

OPTIONS



FUTURES

AN INTRODUCTION TO
FUTURES
AND
OPTIONS

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AND
OPTIONS

Global Leadership in the Financial Marketplace

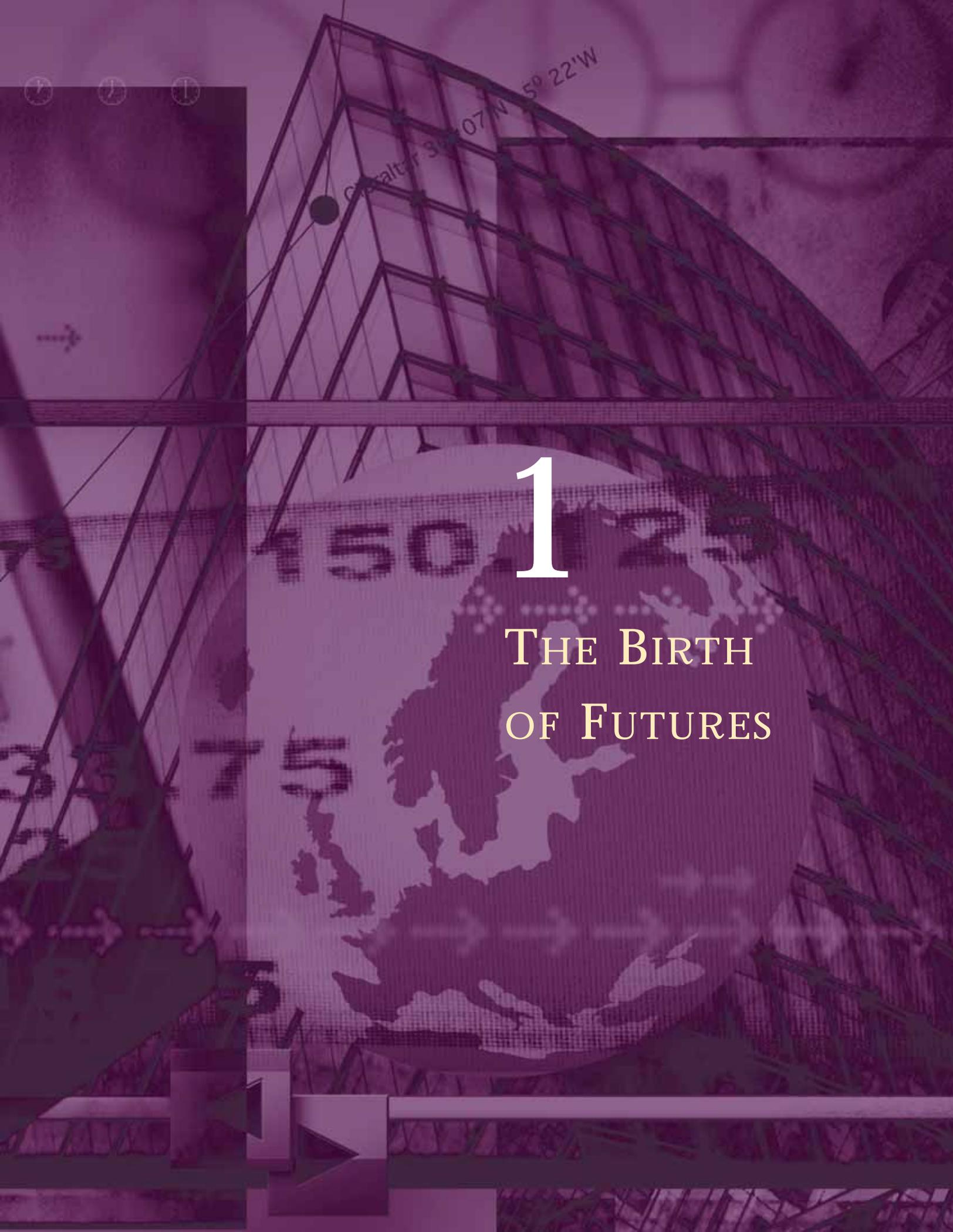
CME is the largest and most diverse financial futures and options exchange in the world - handling over 1 billion futures contracts worth more than \$660 trillion in a single year. Founded in 1898, we serve the risk-management needs of customers around the globe by offering the widest range of benchmark financial products available on any exchange, traded via our CME Globex electronic trading platform and on our trading floors. Our innovative products cover major market segments - including interest rates, equities, foreign exchange, commodities and alternative investment products - and improve the way these markets work for customers everywhere.

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An Introduction to Futures and Options has been prepared by the CME Market Education Department. We hope that this manual will broaden any knowledge you may already have about futures and options or spark an interest in this industry if you have not come into contact with it before now. We also offer a number of other courses, both online and in classrooms, related to the futures industry. Please check our course catalog, available in print from our office and online at www.cme.com. If you have any questions, please contact the **CME Market Education Department in Chicago at (312) 930-6937 or by dialing 1-800-331-3332.**

With special acknowledgement to Larry Schneider, Director of Sales and Marketing for the Zaner Group, former CME member, and an instructor in the CME Market Education Department for more than 25 years; and to the interns from DePaul University, for their invaluable assistance in the updating of this text.



Osaka 34° 07' N 135° 22' W

1

THE BIRTH OF FUTURES

The Birth of Futures

In the Beginning

In the mid-1840s, Chicago began to emerge as the market center for farmers in neighboring states. At harvest time, farmers converged on the city to sell their grain. There was often so much grain that the farmers had to dump a lot of it into Lake Michigan because there were not enough buyers and no way to store it. This was unfortunate, because by the time spring rolled around, grain was in short supply.

How did these extreme conditions of having too much grain and then not enough of it affect grain prices? Let's take a closer look at the forces of supply and demand to give us a clue.

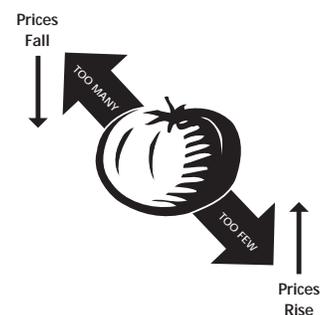
A Tomato Story

As an example, take a look at what happens to the price of tomatoes in the summer. Farmers have so many tomatoes to sell that they must lower their prices to get people to buy all of them. (Who can resist a bargain?) When prices fall because of excess supply, buyers have the upper hand.

But what happens in the winter? People want tomatoes then just as much as in the summer. But as you know, fewer tomatoes are available. Tomatoes can't be grown in the cold, so most are grown in greenhouses (or these days, shipped from warm places). You can't grow nearly as many tomatoes in a greenhouse as you can on a large farm, and shipping is more difficult than having a supply nearby, so fewer tomatoes are brought to the market. People who want tomatoes for their salads and BLTs during the winter find that there is more demand for tomatoes than supply. When a lot of people want to buy something that's not readily available, they end up competing with one another to purchase what they want, and in this process prices go up. People who still want tomatoes in the winter find that they must be willing to spend more money to buy them. Prices of tomatoes rise to a point where a lot of buyers drop out — tomato prices have become too expensive for them. The tomatoes go to the people willing to pay that higher price, and get sold despite that higher price.

It all started with too much or too little grain.

The price of just about everything has a lot to do with supply and demand.



Do the farmers now have the upper hand? They sure do! Demand for tomatoes in the winter exceeds the supply. And this story shows you that the price of just about anything has a lot to do with supply and demand, tomatoes included.

QUICK QUIZ #1

Explain what would happen to the price of tomatoes under each of the following circumstances.

1. A severe drought during the growing season.
2. Highly unusual sub-freezing temperatures in mid-June.
3. A report by the surgeon general linking tomatoes to an increased risk of skin rashes.

Excesses and shortages played havoc with prices.

Back to the 1840s

Let's go back to see what happened with the farmers bringing their grain to Chicago each year at harvest time. Even if they'd been able to store some of it they couldn't bring it to the city in the winter because the rivers were frozen and they were unable to transport it by barge. Then in the spring trails were so muddy that wagons would get stuck. Due to these difficulties, there was an excess of grain in the fall and severe shortages in the spring.

Using what you have just learned about supply and demand, can you figure out what happened to grain prices in the fall and in the spring? As you may have guessed, the excess supply in the fall forced the farmers to lower their prices to induce the grain merchants to buy their grain. But in the spring, when supplies were all but depleted, demand for grain was so great that prices began to rise astronomically. By now, you must be asking yourself if there wasn't a better way to handle this "feast or famine" cycle. As it turned out, there was.

Chicago Board of Trade

A few of the more savvy grain merchants decided to band together in 1848 to form an organized grain exchange — the Chicago Board of Trade (CBOT). The CBOT provided a central meeting place where buyers and sellers of grain could get together and conduct business. With a formal exchange operating, wealthy investors saw an opportunity to build huge silos to store the grain for year-round consumption. This helped smooth out the grain

The CBOT started in 1848 as a grain exchange.

supply problems and helped bring a certain measure of price stability to grain over the course of the year.

CME (Chicago Mercantile Exchange)

The success of the CBOT inspired others to create exchanges that would assist the process of buying and selling futures contracts on other farm products. In 1874, merchants formed the Chicago Produce Exchange, later named the Chicago Butter and Egg Board, and then in 1919 the CME (Chicago Mercantile Exchange). The commodities traded at the exchange throughout these years were butter and eggs. Later, CME began offering trading in hides, onions and potatoes.

During the 1950s, CME also began trading contracts on turkeys and frozen eggs. And in 1961 CME introduced a new contract that really put the exchange on the map — frozen pork belly futures. You've probably heard of pork bellies dozens of times, and you're more familiar with them than you realize. It is from pork bellies that we get bacon, a necessary part of those BLTs.

In 1972, CME introduced financial futures, with the launch of eight currency futures contracts. With its reputation for innovation firmly established, CME went on to become a leading provider of options on futures and cash-settled futures contracts, and also developed an electronic trading platform to permit trading nearly twenty-four hours a day.

Today, CME is the largest futures exchange in the U.S. and the second largest in the world, trading a record 1.05 billion contracts in 2005. It still offers trading of futures contracts on farm products. But these days, farm commodities comprise just one of the following six basic types of CME futures contracts:

- » **CME Commodity Products:** Cattle, hogs, milk, pork bellies, butter, lumber and other commodity products.
- » **CME Foreign Exchange Products:** CME Euro FX, CME British Pound, CME Japanese Yen, CME Canadian Dollar and other FX products.
- » **CME Interest Rate Products:** CME Eurodollars, CME Eurodollar FRA, CME Swap Futures and other interest rate products.
- » **CME Equity Products:** CME S&P 500, CME E-mini S&P 500, CME E-mini NASDAQ-100, CME E-mini Russell 2000, CME S&P MidCap 400 and other equity products.
- » **CME Alternative Investment Products:** CME Weather, CME Energy, CME Economic Derivatives and CME Housing Index products.
- » **TRAKRS (Total Return Asset Contracts):** Commodity TRAKRS, Euro Currency TRAKRS, Gold TRAKRS, LMC TRAKRS, Rogers International Commodity TRAKRS.

CME started in 1874 as the Chicago Produce Exchange (see timeline pages 12-13).

WHAT EXACTLY ARE THESE CME FUTURES CONTRACTS?

CME Eurodollar Time Deposit Futures
(an interest rate product)

Eurodollars are U.S. dollars on deposit in banks outside the U.S. CME's Eurodollar futures contract reflects the offered interest rate for a 3-month \$1 million deposit.

CME Euro FX Futures
(a currency product)

The Euro is the currency of the European Union, introduced January 1, 1999. CME Euro FX (foreign exchange) futures traded at CME are designed to reflect changes in the U.S. dollar value of the Euro.

CME Standard & Poor's 500 Stock Index Futures
(an index product)

The S&P 500 Index is based on 500 large-capitalization companies, representing about 80% of the value of all stocks listed on the New York Stock Exchange. CME's S&P 500 futures contract size is \$250 times the S&P Stock Index.

CME Live Cattle Futures
(an agricultural product)

CME's Live Cattle contract reflects trading of live cattle in units of 40,000 lbs. of 55% Choice and 45% Select USDA grade live steers.

TRAKRS

Non-traditional futures contracts are offered in collaboration with Merrill Lynch & Co., Inc., and are designed to provide market exposure to various TRAKRS Indexes, a series of market-based indexes of stocks, bonds, currencies, commodities and other financial instruments. The indexes on which TRAKRS futures are based differ from most financial indexes in that they are calculated on a total return basis, with declared dividends and other distributions included in the index values.

CME Weather Futures
(an industrial index product)

CME monthly and seasonal weather futures and options on futures are designed to enable businesses to hedge risks associated with unexpected or unfavorable weather conditions. These products are geared to an index of heating degree days (HDD) and cooling degree days (CDD).

QUICK QUIZ #2

Without looking back, can you name which category of futures contracts the following would fall under?

1. CME Frozen Pork bellies futures
2. CME Swiss franc futures
3. CME LIBOR futures
4. CME NASDAQ-100 Index futures

Evolution of the Futures Markets

With this bit of history under your belt, let's take a look at how the futures markets evolved and where futures trading stands today.

Up to this point, you know that centralized exchanges formed in Chicago in the 1800s and that they helped to stabilize wild price fluctuations due to supply surpluses and shortages. Providing a central trading location and improving storage, however, didn't eliminate all pricing problems.

For example, what about Mother Nature? Drought, severe frost and insect infestation and other natural disasters influenced the supply of agricultural commodities. Disease could kill herds of cattle. Then, as now, anything that affected supply and demand for a product inevitably led to price uncertainty — for farm products and non-farm products as well. For example, fear of rampant inflation and a possible recession can drive the stock market into a tailspin. Similarly, political unrest or wars can create supply and trade imbalances and can render the currencies of the countries involved more risky and less valuable in world markets. The list goes on.

Forward Contract

To try to cope with the other causes of price uncertainties, farmers and merchants began making deals called **forward contracts** or **cash forward sales**.

A cash forward sale or forward contract is a private negotiation made in the present that establishes the price of a commodity to be delivered in the future. The commodity does not change hands until the agreed-upon delivery date. Farmers and merchants liked these arrangements because they could lock in prices ahead of time and not worry about price fluctuations in the interim.

Forward contracts were useful, but only up to a point. They didn't eliminate the risk of default among the parties involved in the trade. For example, merchants might default on the forward agreements if they found the same product cheaper elsewhere, leaving farmers with the goods and no buyers. Conversely, farmers could also default if prices went up dramatically before the forward contract delivery date, and they could sell to someone else at a much higher price.

To resolve this problem, the exchanges began requiring each party in a forward transaction to deposit a sum of money with a neutral third party — sort of like an escrow account in a real estate transaction. This helped ensure that both sides would live up to the agreement. If either defaulted, the other party would receive the money as reimbursement for any inconvenience or financial loss.

External events led to price uncertainty.

Forward contracts helped, but they didn't solve all the problems.

FORWARD CONTRACT

A private agreement to buy or sell a commodity at a specific price on a specific date.

A LOOK BACK

Before the exchanges were founded, farmers and merchants traded forward contracts in public squares and on street curbs.

The exchanges also needed ways to address price changes resulting from unforeseen events such as crop failure, drought, war, and so on. They found that developing standardized contracts was helpful. A standardized contract specified a certain quality and unit of measurement for each commodity being traded. Standardized contracts were interchangeable and addressed everything except the price.

COMPARING FORWARDS AND FUTURES

	Forward Contract	Futures Contract
Nature of Transaction	Buyer and seller make a custom-tailored agreement to buy/sell a given amount of a commodity at a set price on a future date.	Buyer and seller agree to buy or sell a standardized amount of a standardized quality of a commodity at a set price on, a future date.
Size of Contract	Negotiable	Standardized
Delivery Date	Negotiable	Standardized
Pricing	Prices are negotiated in private by buyer and seller, and are normally not made public.	Prices are determined publicly in open, competitive, auction-type market at a registered exchange. Prices are continuously made public.
Security Deposit	Dependent on credit relationship between buyer and seller. May be zero.	Both buyer and seller post a performance bond (funds) with the exchange. Daily price changes may require one party to post additional funds and allow the other party to withdraw such funds.
Getting Out of Deals	Difficult to do, so most forwards result in a physical delivery of goods.	Easy to do by entering into an opposite transaction from that initially taken (i.e., buy if you originally sold, sell if you originally bought).
Regulation	State or Federal laws of commerce	3 tiers: Commodity Futures Trading Commission, National Futures Association, and self-regulation by the exchanges.
Issuer and Guarantor	None	Exchange clearing house

Futures Contracts

Standardized forward contracts evolved into today's futures contracts. For example, a June CME Live Cattle futures contract would require the seller to deliver 40,000 pounds of live cattle of a certain quality to the buyer upon expiration of the contract.

A great advantage of standardized contracts was that they were easy to trade. As a result, the contracts usually changed hands many times before their specified delivery dates. Many people who never intended to make or take delivery of a commodity began to actively engage in buying and selling futures contracts. Why? They were "speculating" — taking a chance that as market conditions changed they would be able to buy or sell the contracts at a profit. The ability to eliminate a "position" on a contract by buying or selling it before the delivery date — called "offsetting" — is a key feature of futures trading. Actually, only about 3% of all futures contracts currently result in physical delivery, because most people clear or eliminate their positions before the contract expires.

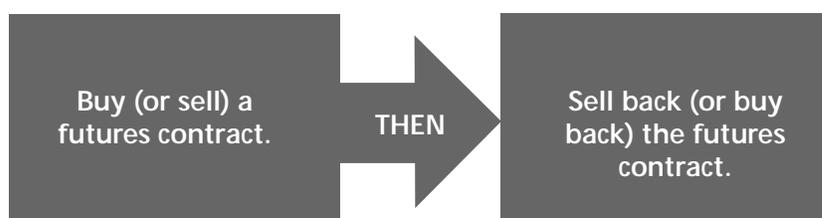
Every futures contract has a last day of trading, and all open positions must be closed out by this Last Trading Day. For a physical delivery contract like CME Live Cattle, the open positions can be closed out by making an offsetting futures trade or by making/taking physical delivery of the cattle. For cash-settled futures contracts, positions can be closed out by making an offsetting futures trade or by leaving the position alone and having it closed out by one final mark-to-market settlement adjustment.

People can trade futures even if they don't want to make or take delivery of the commodity.

FUTURES CONTRACT

A legally binding, standardized agreement to buy or sell a standardized commodity, specifying quantity and quality at a set price on a future date. Some futures contracts, such as the CME Live Cattle and CME British Pound contracts, call for physical delivery of the commodity. Other futures contracts, such as the CME S&P 500 and CME Eurodollar contracts, are cash-settled and do not have a physical delivery provision. If these contracts are not liquidated by the Last Trading Day, the position is closed out by comparing the position's price against a special Final Settlement Price, and debiting or crediting the position accordingly.

OFFSETTING A TRADE



With futures contracts being offset so frequently, a method was needed to match the ultimate seller with the ultimate buyer. Exchange clearing operations evolved to record all transactions and to document delivery from sellers to buyers. A **clearing operation** (at CME it's known as CME Clearing) plays the role of third party to every futures transaction after the trade has "cleared." This means that CME Clearing first ensures that the buyer and seller are in agreement as to price, quantity and expiration month of an order. Then, CME Clearing steps in between and assumes the obligation of the seller against the original seller, and assumes the obligation of the buyer against the original buyer. It is as if the seller had sold to CME Clearing and as if the buyer had bought from CME Clearing. This practice ensures the integrity of all trades. Do you see why?

How Do Futures Markets Benefit Society?

The futures markets can help manage the risks that are part of doing business. This can mean lower costs to you as a consumer, because a well-run business is usually able to bring its goods and services to market more efficiently — at a lower cost. The fewer risks a business has to take, the lower the end price it needs to make a profit. That's really the free enterprise system at its best, and futures markets play a vital role in this process.

Also, firms that manage their risks tend to be more dependable employers. If you work for a company that deals with overseas customers or suppliers, for example, you have an interest in how well your company copes with foreign exchange rates and how well it manages the risk of fluctuating interest rates to protect its profits. Hedging with futures can assist with this aspect of your employer's operations.

Naturally, if you work for a futures exchange or a firm involved in trading, futures markets are particularly important to you. Futures markets are a part of the business scene in this country. Used knowledgeably and appropriately, futures and options markets can be a valuable asset in the business of doing business, which affects each of us.

Global Perspective

We've been talking about the structure and function of U. S. futures exchanges, but the picture would not be complete without taking a look at the world outside of Chicago and New York.

In fact, while there are just nine futures exchanges in the U.S. today, there are more than 50 futures exchanges elsewhere. The exchanges outside the U.S. now do over 65% of global futures business; U.S. exchanges do 35%. So although Chicago provided the prototype or model for futures markets, you really have to look around the world to get an accurate perspective of today's futures trading industry.

For example, while open outcry on a trading floor is still the U.S. model, the majority of trading on exchanges abroad is done electronically. Just as other countries may have initially learned futures from Chicago, Chicago and other U.S. exchanges are now learning from the rest of the world. It wasn't until the early 1990s that some major U.S. exchanges first began allowing electronic trading of their products after their floors shut down each day. Now, at CME, virtually all contracts trade at some point electronically each trading day, and specific products (such as the CME E-mini S&P 500 and CME E-mini NASDAQ-100 futures contracts) trade only electronically, never through open outcry on the trading floors.

All Exchanges Are Not Equal

Ownership of futures exchanges also varies around the globe. Most U.S. exchanges are member-owned organizations. This is not the case, however, for CME, which "demutualized" in 2000 and became a shareholder-owned corporation.

The stock of Chicago Mercantile Exchange Holdings Inc. can be bought and sold on the New York Stock Exchange, much like General Motors and IBM. The ticker symbol is CME. If you were to purchase shares in CME at the New York Stock Exchange, you would own Class-A equity shares, which give you ownership, but not trading floor privileges. The Class-B shares, however, are bought and sold through the exchange, much like membership "seats" were when CME was a membership organization.

The only people allowed on the CME trading floor to trade and execute orders are holders of Class-B shares in Chicago Mercantile Exchange Holdings, Inc. This privilege was once held by members of the exchange, but since CME is no longer a member-owned institution, we no longer officially refer to "members" or "membership" on the Exchange. The old terminology still stays with us, however, and it is common (though technically incorrect) to refer to Class-B shareholder floor brokers and floor traders (at CME) as "members."

In other countries, exchanges are often owned by a small group of banks or by a stock exchange holding company. In some cases, futures exchanges or their holding companies may even be publicly listed on a stock exchange. In other words, there are ownership structures that give rise to different opportunities and advantages, other than those found among most U.S. exchanges. And again, many other U.S. exchanges are giving serious consideration to becoming publicly-traded corporations.

TOP 10 GLOBAL FUTURES EXCHANGES

As Measured By Futures Contracts Traded, 2004

Exchange	Futures Contract Volume (rounded)
Eurex	684,631,000
CME	664,885,000
Chicago Board of Trade	489,230,000
Euronext	310,673,000
Mexican Derivatives Exchange	210,355,000
Brazilian Mercantile and Futures Exchange	173,534,000
New York Mercantile Exchange	133,285,000
Dalian Commodity Exchange, China	88,034,000
Tokyo Commodity Exchange	74,447,000
National Stock Exchange of India	67,406,000

TOP 4 U.S. FUTURES EXCHANGES, 2004

As Measured By Total Contract Volume, Futures + Futures Options

Exchange	Futures and Options Contract Volume
Chicago Mercantile Exchange	805,341,681
Chicago Board of Trade	599,994,386
New York Mercantile Exchange	161,103,746
New York Board of Trade	31,729,591

TOP 10 GLOBAL FUTURES CONTRACTS

By Contract Volume, 2004

Contract	Volume (rounded)
CME Eurodollar	297,584,000
Eurobund (Eurex)	239,787,000
TIIE 28 (MDE)	206,027,000
10 Year T-Note (CBOT)	196,619,000
CME E-mini S&P 500	167,203,000
Euro-BOBL (Eurex)	159,166,000
3 Month Euribor (Eurex)	157,747,000
Euro STOXX 50 (Eurex)	121,661,000
5 Year T-Note (CBOT)	105,469,000
Interest Rate (BM&F)	100,290,000

TOP 10 U.S. FUTURES CONTRACTS

By Contract Volume, 2004

Contract	Volume (rounded)
CME Eurodollar	297,584,000
T-Notes (10-Year)	196,119,000
CME E-mini S&P 500	167,203,000
T-Notes (5 Year)	105,469,000
CME E-mini NASDAQ-100 Index	77,168,000
T-Bonds	72,949,000
Crude Oil	52,883,000
Corn	24,038,000
CME EuroFX	20,456,000
Soybeans	18,846,000

TOP 10 CME FUTURES CONTRACTS RANKED BY VOLUME, 2005

1	CME Eurodollar futures	410,355,384
2	CME E-mini S&P 500 Futures	207,095,732
3	CME Eurodollar Options	188,001,048
4	CME E-mini NASDAQ-100 Futures	72,453,141
5	Rogers TRAKRS Futures	36,081,429
6	CME Euro Fx Futures	34,530,730
7	CME E-mini Russell 2000 Futures	28,902,033
8	CME S&P 500 Futures	15,377,489
9	CME Japanese Yen Futures	12,471,672
10	CME S&P 500 Options	9,810,489

CME TIMELINE

1874 - 2005

1874 »	The Chicago Produce Exchange is opened for trading futures on butter and eggs; name is later changed to the Chicago Butter and Egg Board.
1919 »	Chicago Butter and Egg Board changes its name to Chicago Mercantile Exchange.
1961 »	Trading begins on frozen pork bellies — the first futures contract based on frozen, stored meats.
1964 »	CME initiates futures trading on live cattle — the first futures contract based on live animals.
1972 »	First financial futures traded when CME creates the International Monetary Market (IMM) for trading of futures on seven foreign currencies.
1980 »	CME opens London office — the first overseas office established by a U.S. futures exchange.
1981 »	Introduction of the first cash-settled futures contract — CME Eurodollar futures — which paves the way for futures on stock indexes.
1982 »	CME opens its Index and Options Market (IOM) and becomes the first exchange offering trading of stock index futures and options on futures products. Futures trading begins on the Standard & Poor's 500 stock index.
1987 »	CME opens an office in Tokyo, the first by a foreign futures exchange.
1992 »	CME launches the CME Globex electronic trading platform, offering post-market global electronic futures transactions.
1998 »	CME launches the second generation of the CME Globex trading platform, the world's first global electronic futures trading system.
1999 »	Drawing on the success of the CME E-mini S&P 500, CME creates the CME E-mini NASDAQ-100 futures contract. CME becomes the first U.S. exchange to construct a concrete plan for demutualization.
2000 »	Exchange members vote to transform CME from a not-for-profit, membership-owned organization into a for-profit shareholder-owned corporation. (June) CME becomes the first U.S. financial exchange to demutualize into a shareholder-owned corporation. (Nov.)
2001 »	CME becomes the largest futures exchange in the U.S. (Jan.)
2002 »	CME partners with the Chicago Board of Trade (CBOT) and the Chicago Board Options Exchange (CBOE) to form a new, joint venture exchange for the trading of single stock futures and narrow-based stock index futures — OneChicago, LLC (Oct.) The Eagle Project (Electronic Arbitrage Globex Liquidity Enhancer) is launched, providing electronic trading of complex CME Eurodollar spread trades on the CME Globex platform in a way that replicates how those same spreads trade in the open outcry environment. (Nov.)

CME TIMELINE

CME Holdings Inc. stock is listed on the NYSE, making CME the first publicly-traded U.S. financial exchange. (Nov.)

2003 » CME develops and introduces futures on the CME\$INDEX, a weighted, geometric index of seven foreign currencies (Mar.)

CME begins trading futures on the CME Russell 1000 Index Futures. (Apr.)

CME introduces E-px, a real-time, Internet-based quote service providing price information on CME Eurodollar Pack and Bundle trades directly from the exchange. (Apr.)

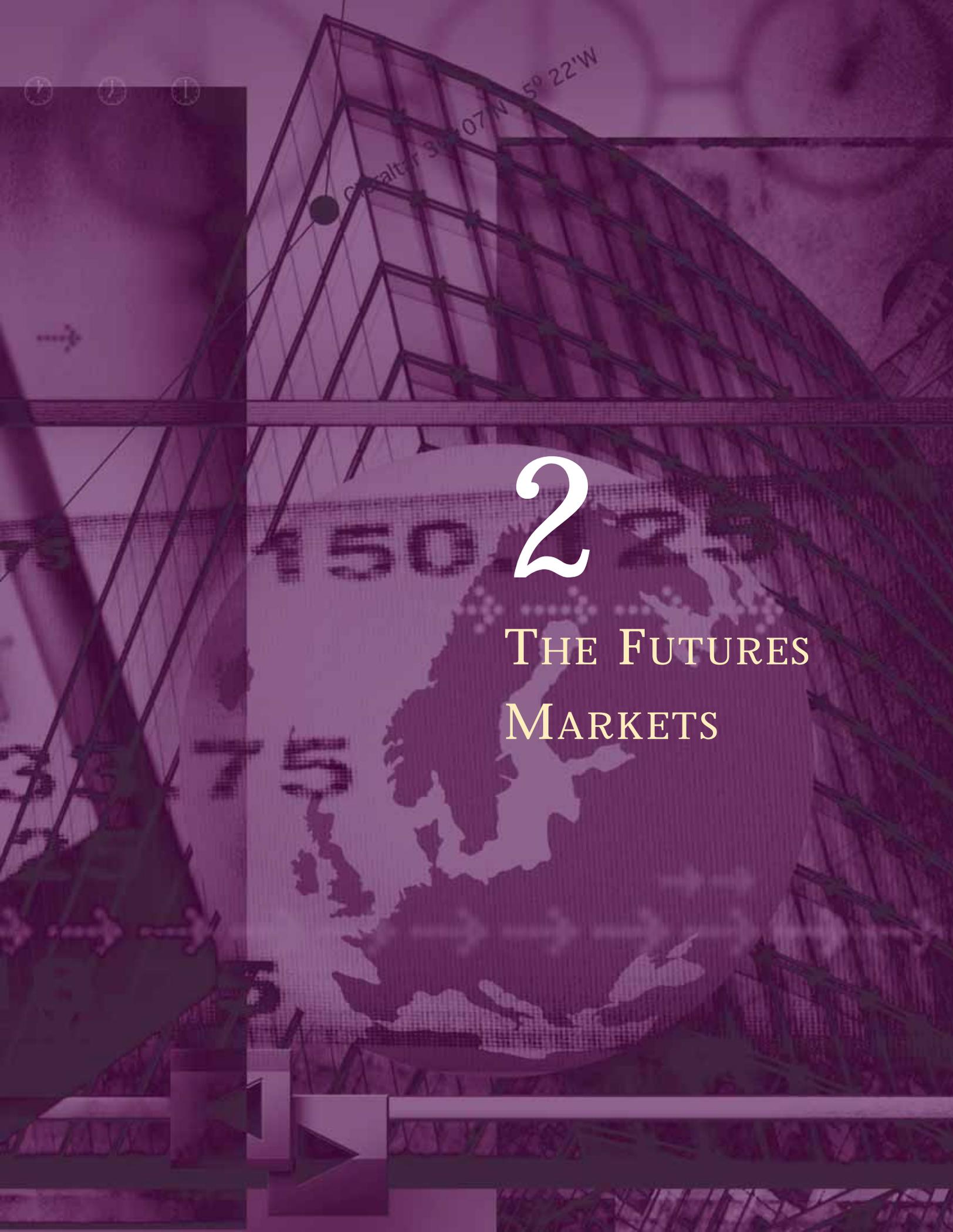
CME begins providing clearing services to the CBOT.

2005 » CME launches CME FX on Reuters, marking the first major linkage of sell-side traders in the interbank FX market to the CME eFX futures markets.

QUICK QUIZ #3

Without looking back, can you answer the following questions?

1. What are the two primary factors that determine the price of a commodity?
2. What does a standardized futures contract specify?
3. Why is offsetting important to buyers and sellers of a futures contract?
4. What is the difference between a forward contract and a futures contract?



2

THE FUTURES MARKETS

The Futures Markets

Forward Contracting Takes Many Forms

In the previous chapter, we discussed how futures contracts evolved from forward contracts. But we don't want you to think that forward contracts no longer exist. There are many kinds of forward contracts, and people use them every day.

If you've ever subscribed to a newspaper or magazine, you've entered into a type of forward contract. If you send in a check for a one-year subscription to *The Wall Street Journal*, *The Wall Street Journal* in return agrees to deliver a specific commodity (the newspaper) of a specific quality (top-notch journalism) at a specific time (each weekday) for a specific, agreed-upon price. The price you paid for the subscription is locked in, just like a forward contract. Even if the price goes up 10 cents a copy on the newsstand, you will only be charged at the mutually agreed-upon rate for the duration of your subscription or contract.

You agree on a price to pay for delivery in the future.



A Forward Contract

You pay ahead to lock in a price on delivery of the newspaper over a certain time.

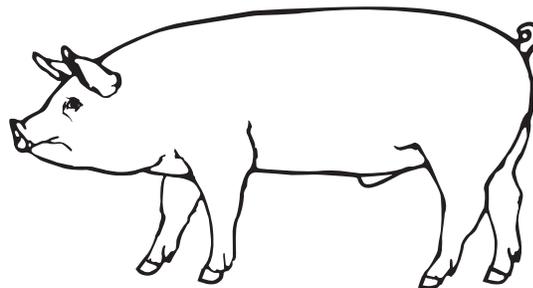
Another kind of common forward contract involves the purchase of a new car. The dealer may not have the exact car with all of the options you require, so he may have to order the car from the factory where these options can be added. But before placing your order, the dealer will want an agreement with you — essentially a forward contract, to buy the car at a specified time in the future at a specified price. Again, this example shows how someone can enter a forward contract to lock in a price. Even if the list price of the car were to go up between the time you struck the agreement and the time you picked up the car, you would still pay the original specified price.

Price certainty allows the buyer and seller to anticipate cash flow in the future.

Forward contracting offers several advantages. Aside from knowing the quantity, the quality level and the time of delivery of what you've agreed to purchase, you know with certainty what the price is going to be. Price certainty is important because it enables both buyers and sellers to anticipate their costs, revenues and cash flows well into the future.

The Cost of a Futures Contract

One CME Lean Hog futures contract is 40,000 pounds. If hogs are selling at 50¢ per pound, the value of the hog contract is \$20,000.



There are some similarities between futures and common stocks, but mostly there are differences.

Distinguishing Between Futures and Stocks

As you may know, futures contracts are traded in a way that kind of looks like stock trading. And although there are some similarities, these two forms of investment are really quite different, as you're about to find out.

Similarities Between Futures and Stocks

Futures and stocks are similar in that both are traded on organized exchanges that bring buyers and sellers together in a centralized marketplace. If there were no exchanges, traders would have to trudge from farm to farm to get the best prices on pork bellies or investors would need to go door to door to get the best price for their stocks.

Another similarity is that you can invest in futures just as you can in stocks. To invest means to commit resources in expectation of making a profit. People who use the futures market hoping for profits are more accurately called speculators. Speculators fall into a different category from hedgers, who trade futures for price protection and who may expect to make or take delivery of what they're trading.

Differences Between Futures and Stocks

A major difference between futures and stocks is that stocks represent ownership in a corporation whereas futures contracts represent a future obligation to receive or deliver a commodity at a future date. Therefore, futures investors can sell short just as easily as they can buy long. Another major difference is the length of time you typically hold a futures contract or stock shares. While stock investment generally suggests a long-term time frame, futures investors (speculators) may commit their funds for only a few minutes, hours, days or possibly months.

Performance Bond

The second, more major, difference involves the concept of the performance bond (previously called “margin”). In stock trading, margin refers to a partial deposit you put up with your broker to purchase securities, while borrowing the remaining amount (typically half) from the broker (expecting to pay interest). In futures, this “down payment” is actually a good faith deposit you pay to indicate that you will be able to ensure fulfillment of the contract. It's a guarantee that both buyers and sellers will respectively take or make delivery of the commodity represented by the contract — unless they offset that obligation via an opposite and equal transaction.

Futures contracts require an **initial performance bond** in an amount determined by the exchange itself. The requirements are not set as a percentage of contract value. Instead, they're a function of the price volatility of the commodity. Brokerage firms are permitted to request higher amounts from their customers, but never less than the minimum set by the exchange. When you trade futures, property rights don't change hands. Instead, you are entering into a legally binding commitment that, at some later point in time, could become a transaction involving the property rights to the actual commodity.

If you trade futures at CME, you'll be required to post an initial performance bond to cover any loss you may incur. If at any time your account dips below a specified maintenance level, you'll be asked to add money to keep your account up to the initial performance bond level.

Before you trade, there has to be some amount of money put up front in your account.

IT USED TO BE CALLED “MARGIN”

A performance bond is a deposit to cover losses you may incur on a futures contract as it is marked-to-market.

A maintenance performance bond is a minimum amount of money (a lesser amount than the initial performance bond) that must be maintained on deposit in your account.

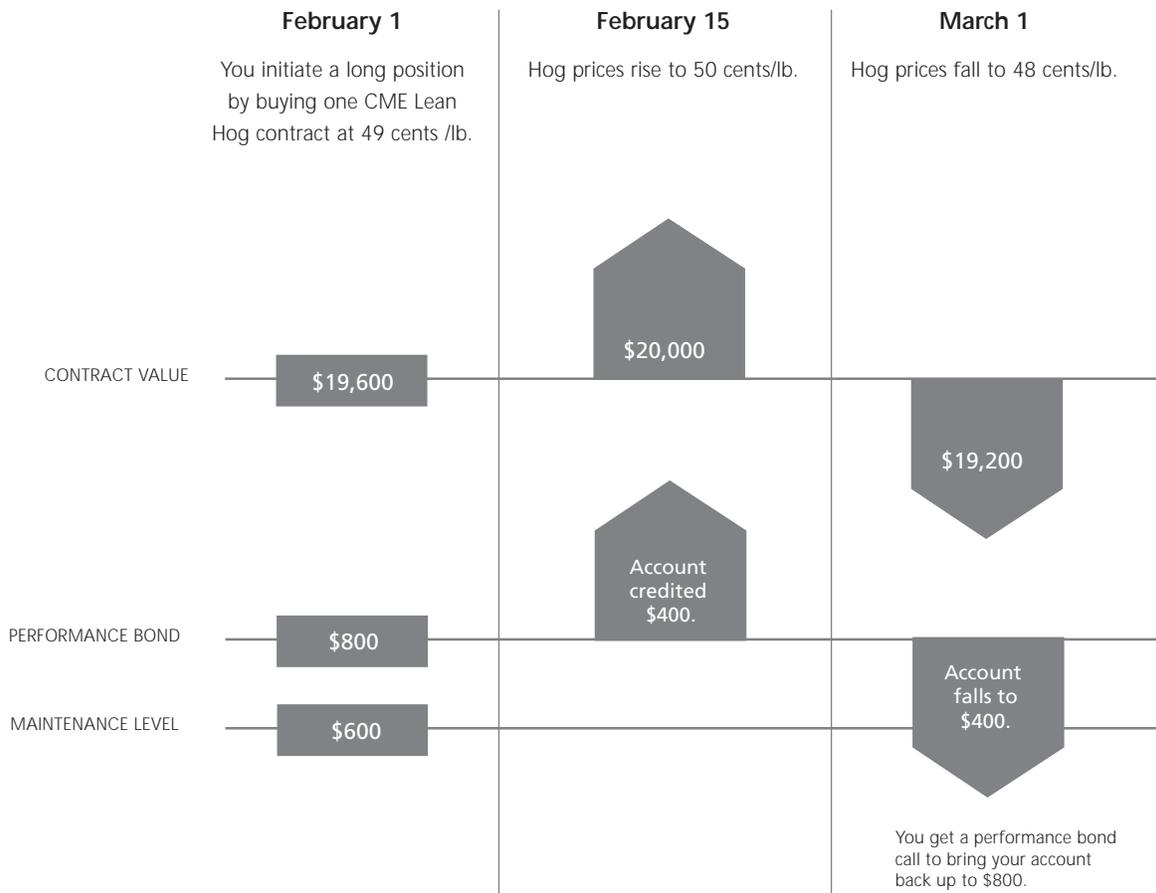
A performance bond call is a demand for an additional deposit to bring your account up to the initial performance bond level.

The Futures Markets

NOTE:

Performance bond requirements vary according to the type of futures position or whether one is a hedger or speculator. Performance bond requirements are also subject to change. Consult the CME Web site at www.cme.com for current performance bond amounts.

At the end of the trading day your position is **marked-to-the-market**. That is, the CME clearing house will settle your account on a cash basis. Money will be added to your performance bond balance if your position has made a profit that day. If you've sustained a loss that day, money is deducted from your performance bond account. This rebalancing occurs each day after the close of trading.



If your position has lost money and the balance in the performance bond account has fallen below the maintenance level, a **performance bond call** will be issued. That means you have to put in more money to bring the account up to the initial performance bond level. Trade-related debt is not allowed to accumulate in futures. All accounts are settled daily (and sometimes more frequently) according to that day's settlement prices. This ensures the financial integrity of the brokerage houses, the clearing members and the exchange as a whole. Performance bond calls can be issued at any time if market movement necessitates such action.

If your position has increased in equity during the day (i.e., the position is making money), your open trade equity profits are credited to your performance bond account directly. You have the choice of either taking the increase in equity or leaving the funds in your account as a safeguard or cushion against future losses.

Monitoring Your Position

One final thing to remember is that you must monitor a futures position much more carefully than a stock position. You can buy 100 shares of stock, put them under your pillow, and forget about them for a few years because your maximum risk is known. You aren't subject to performance bond calls, your greatest loss potential is the amount of your original investment and the stock does not expire unless the corporation goes bankrupt.

With futures, however, constant monitoring is essential. This is because of the leverage but also because futures contracts have expiration dates. Market participants usually will offset (selling if having bought, buying if having sold short) their futures position within a short time frame ranging from minutes to hours, days, weeks or possibly months. They are normally not interested in making or taking delivery of the commodity. You can't just forget about a futures contract, or you might have to make physical delivery if you are short, or take ownership, if you are long, of 40,000 pounds of pork bellies.

However, this is quite unlikely because many of the contracts traded at CME are now cash-settled. (Also, there are specified points where deliveries are made, one of which is not your front lawn.) Your position is marked-to-the-market when the contract expires. You are paid in cash if your position was profitable, but you may have to pay cash if your position sustained a loss. The effect of this is the same as if you were to offset the position at the **final** settlement price of the contract.

You just can't forget about a futures contract.

REGULATION

Regulations were put in place a long time ago to keep the operation of the futures markets free of market abuses and price manipulation. Both the federal government and the exchanges play a role in regulating market activity.

Regulating Futures Trading

In 1923, the Grain Futures Act, the first federal law regulating futures trading, was passed. This was amended and became the Commodity Exchange Act of 1936, from which evolved the Commodity Futures Trading Commission Act of 1974. The 1974 Act created the **Commodity Futures Trading Commission (CFTC)**, the independent federal body that oversees all futures trading in the United States. Although the futures exchanges essentially are self-regulating, they must obtain CFTC approval of any regulatory changes or for the introduction of new futures or options on futures contracts. The exchanges also must have trading rules, contract terms and disciplinary procedures approved by the CFTC.

The National Futures Association (NFA) was incorporated under Section 17 of the Commodity Exchange Act of 1981. Its purpose is to regulate the activities of its members. The CFTC requires NFA membership by the brokerage houses and their agents.

In addition to external monitoring agencies, each exchange is also self-regulating. Disciplinary committees, made up of members, have the authority to fine, suspend or expel members for trading violations.

Both the NFA and CFTC work to look after the public interest. The basic responsibility of the CFTC is to ensure fair practice and honest dealing in order to permit accurate price discovery and opportunities for efficient risk management. Although this basic responsibility lies with the CFTC and the NFA, other bodies such as the Securities and Exchange Commission, the Federal Reserve Board, and the U.S. Treasury Board have claimed rights over some aspects of futures trading as well. Violations of exchange rules can result in substantial fines, suspension or revocation of trading privileges, and/or loss of exchange membership.

DIFFERENCES BETWEEN FUTURES AND STOCKS

	Futures	Stocks
Trading	Traded at an organized exchange	Traded at an organized exchange
Represents	A commitment to buy or sell something in the future and to make or receive daily payments depending upon the direction of the contract price.	Ownership of a corporation
Issued by	The exchange writes the terms of the contract but does not issue a contract. Buyer and seller create an obligation when they enter into a futures contract.	A corporation
Maximum number that can be issued	No limit	Set by corporate charter
Investing	Can invest in expectation of making a profit.	Can invest in expectation of making a profit.
Cash flows	None, other than daily in and out flows to trader's account based on daily marking to market	May receive dividends
Leverage	Highly leveraged	Optional: 2 to 1 maximum if purchasing stock on margin
Ability to sell short	Yes, as easily as buying long	Permitted under special circumstances and a short can be made only on an "uptick"
Options	Yes. If an option is exercised, the buyer receives a long or a short futures position.	Yes. If the option is exercised the buyer receives or delivers the actual stock certificate.
Time	Typically short term	Typically long term
Maturity	Fixed maturity date, typically less than one year	None
Money	Performance bond account that is adjusted daily.	Margin paid as a "down payment" for stocks.
Monitoring	Need constant monitoring because it is a leveraged investment and there are unique nuances such as First Notice Day and Last Trading Day.	Requires monitoring as stock prices can change dramatically as much as futures. If the stock is not bought on margin the most that can be lost is the entire investment.

3

TRADING VENUES:
OPEN OUTCRY
AND ELECTRONIC
TRADE MATCHING

Trading Venues:

Open Outcry and Electronic Trade Matching

Buyers and Sellers Need a Venue for Conducting Business

In order to conduct any kind of trading, there has to be a way of bringing together buyers and sellers. In the earliest days of futures trading, people interested in forward contracting met on street corners to negotiate agreements. There were obvious drawbacks to this, and as the futures industry evolved, the trading floor was created as a logical, convenient way to bring people together to conduct their business.

As with all business transactions until the computer revolution, futures trading took place at a much slower pace and with minimal technology for many years.

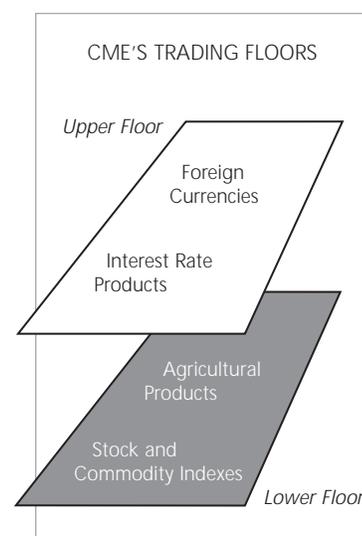
In recent decades, however, technology has transformed the way business is conducted around the world, and futures trading is no exception. Technology now is an integral part of open outcry trading on the floors — with electronic quote boards, hand-held computers, computerized order entry and reporting systems, and so on — all used to speed up and streamline the trading process. Even more revolutionary, however, has been the development of electronic trading, with buyers and sellers now being able to come together via computerized trade matching.

In the first part of this chapter we will look at how trades are executed on the CME trading floor via the open outcry method. Then we will look at computerized trade matching via the CME Globex electronic trading platform, in addition to a brief history of electronic trading at CME.

Open Outcry Trading at CME

In 2005, approximately 30 percent of total CME volume came from “open outcry” trading — a face-to-face, auction-like process that takes place in what are called trading “pits.” Pits are special tiered areas on the trading floors that look a little bit like bleachers, built into the floor and traditionally arranged in the shape of an octagon.

Buyers and sellers need a venue for conducting business.



There's a lot of action on the floors of the exchange.

#1 FUTURES CONTRACT

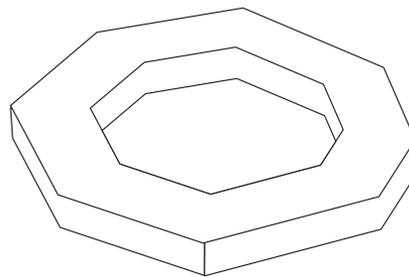
The most actively traded futures contract in the world is CME's Eurodollar, with annual volume of more than 410 million futures contracts in 2005. Two of the world's top 10 most actively traded futures contracts as of June 2005 were CME products (CME Eurodollar futures and CME E-mini S&P 500 futures).

In floor trading, the traders stand in the pits making bids and offers on a specific commodity. Generally, only one commodity is traded in each pit and that pit is the only location on the floor where trading in that commodity may take place. Options on each contract are traded in adjoining pits. To accommodate its many different contracts, CME offers pit trading on two floors.

The pits are surrounded by rows of **workstations** or "desks," where orders from individual investors as well as large commercial users are received by phone or computer from around the world. These orders are carried to the trading pits by runners or "flashed" to the pits by hand signals.

Each pit is divided into segments designated for different contract delivery months. The lead month (the month closest to expiration — and usually the most actively traded) requires the most space. In the CME S&P 500 futures pit, for example, the lead month takes up about 90% of the pit. The back months (those furthest from expiration and usually the least actively traded) take up just one small section of the pit.

Traders stand in a tiered trading pit, shouting and signaling bids and offers with their hands.



(Full maps of the trading floors appear later in this chapter.)

Electronic tickers and display boards located all around on the walls add to the vibrancy of the trading floors. For example, huge electronic tickers on the south end of both CME floors display price quotes from the New York Stock Exchange (NYSE), the Chicago Board of Trade (CBOT), and the various New York futures exchanges.

The date and time are displayed on **electronic boards** in each corner of the trading floors. Above the time there is a letter or symbol that signifies the time bracket. Every 15 minutes a siren sounds and a new bracket letter appears. The time brackets serve as part of a paper trail audit for the exchange and the members in case a question arises. The floor brokers and floor traders are required to write the time bracket letter or symbol on an executed order ticket. This bracketing system therefore helps to pinpoint within a fifteen-minute range the time that a trade took place.

Other displays provide up-to-the-minute information such as the latest trade figures, cash (spot) market prices, news about the exchange, and various announcements, such as the presence of VIPs visiting the exchange.

How Is Price Information Communicated?

If you visit CME, you'll see exchange employees dressed in many different colored jackets. The people in each of the pits wearing light blue jackets are most likely trained **market reporters**, whose job it is to report all price changes. Each carries a walkie-talkie, and when a price change occurs in the course of trading, these observers notify other staff members at computer terminals on the catwalk above the floor. The new price information is recorded immediately, and the system sends the new data to the quote boards.

But the information doesn't stop at the boards. The same network also puts the price information out around the world via quotation systems, allowing brokers and traders to monitor the market without ever leaving their desks.

Why Are There Video Monitors in the Trading Pits?

The video monitors in the pits keep options traders informed about what is happening in the options pits. For example, a particular option may not trade all day, but the traders will want to know the most recent market bid and offer. These monitors are necessary because there are so many different options contracts available for trading. With options, knowing the last quote is not as important as knowing the "market quotes" for each option. The video screens are updated the same way as the price boards around the floor — via a walkie-talkie from one market reporter in the pit to another at a computer terminal.

How Do the Traders Know Who's Who in the Pits?

Many traders stand in a favorite spot all the time, and many recognize each other and know one another by name. But in the busy action of trading you need a means of identification that is simpler than using names. That's why the people on the CME trading floors wear different colored jackets. The jackets help to sort people into three main groups — members, employees of members and member firms, and exchange employees.

There are four kinds of memberships at CME; although the term "member" is used to denote someone who satisfies certain requirements to trade or execute orders at CME on the trading floor. Members either own or lease Class B shares, which are divided into four Divisions. Each Division determines what the members are permitted to trade.

- » **CME** Division trading rights allow open outcry trading in any contract listed on the exchange.
- » **International Monetary Market (IMM)** Division trading rights allow open outcry trading in interest rate, foreign exchange and stock index contracts.
- » **Index and Option Market (IOM)** Division trading rights allow open outcry trading in index and lumber contracts and all options on futures contracts.
- » **Growth and Emerging Markets (GEM)** Division trading rights allow open outcry trading in emerging market currency, interest rate and index products (such as the CME Mexican peso and CME Brazilian real).

Prices travel from the trading pit to the quote board to the world — almost instantaneously.

HAND SIGNALS

See the Appendix to find out how arbitrage traders communicate with each other on the trading floor.

Badges and jackets identify people on the floor.

TYPES AND NUMBERS OF CME MEMBERSHIPS AS OF 2005

CME membership — 625
 IMM membership — 813
 IOM membership — 1287
 GEM membership — 413

CME, IMM, IOM, GEM

What do all these initials stand for?

CME: Chicago Mercantile Exchange

IMM: The International Monetary Market

IOM: The Index and Options Market

GEM: Growth and Emerging Markets

All are divisions of CME.

CME, IMM and IOM members are supplied red jackets by the exchange, but if they prefer, they may also wear their own distinctive jackets, again as an easy means of identification. GEM members, however, are required to wear orange jackets.

Besides different colored jackets, members also wear different colored badges that indicate the type of membership they have. CME members wear gold badges, IMM green, IOM blue, and GEM black or blue. The badges also bear a set of large, easy-to-read initials that serve as each person's individual symbol or floor "name."

No two traders have the same initials on their badges. When traders complete a transaction, each notes the other's initials on their trading cards as a way of telling exactly who did the trade.

Assigning unique initials to each member cuts down on confusion and also minimizes the number of "out-trades" (a misunderstood or mistaken trade) that take place. **Out-trades** are noticed at the end of a day's trading session when trades don't match.

For example, it's considered an out-trade if both traders thought they were buying, or when the traders have recorded different contract amounts. The great majority of these out-trades are actually clerical errors, caused by misreading what a floor broker wrote on a ticket, or by transmitting to the clearing house something other than what the floor broker or trader actually wrote on the tickets. The exchange clearing house and out-trade clerks try to reconcile these errors. If numerous attempts to do so fail, exchange rules provide specific procedures to follow. Out-trade clerks are employed by member firms or members, and have their own identifying jackets — usually pale green with a black patch on the back.



CME Members: Usually Red

CME Employees: Blue

Out-Trade Clerks: Pale Green

Employees of Brokerage Firms: Gold

GEM Members: Orange

How Do We Identify Other People on the Floor?

As we mentioned, light blue jackets designate market reporters, who may be stationed in the pits or at the equipment on the catwalk overlooking the floor. You may also see dark blue jackets, which are worn by other types of CME employees. CME Information Systems employees often wear black jackets.

You will see lots of people wearing gold jackets. Gold designates the employees of various financial firms — not exchange members. You'll also notice that they also wear a different type of badge. These brokerage employees are responsible for performing a number of important tasks, including:

- » Communicating trading information from the pits to the phone by means of hand signals (arbitrage clerks)
- » Carrying orders and other information to and from members (runners)
- » Holding customer orders for the traders (deck holders)
- » Staffing the phones, workstations, computers and printers

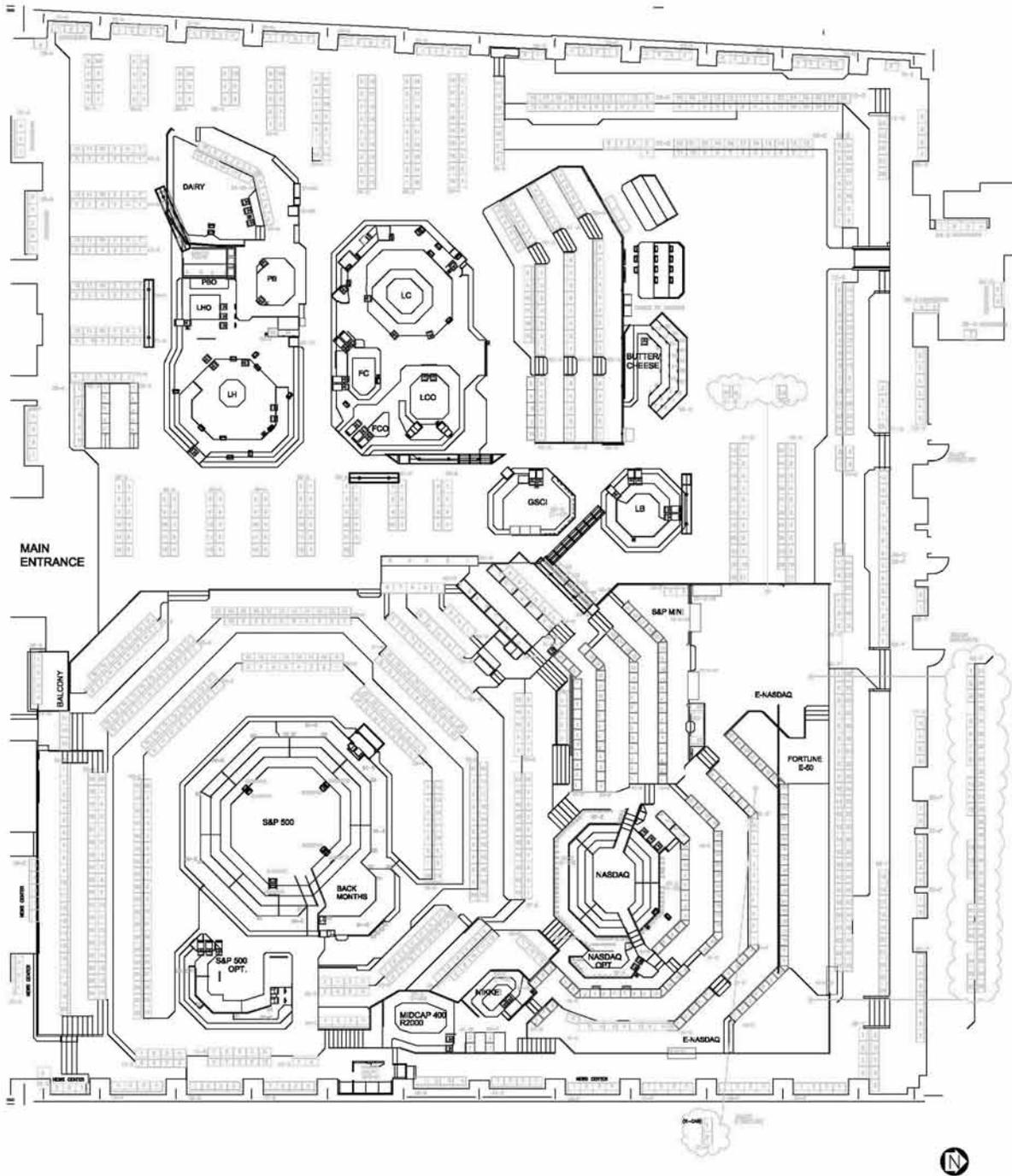
How Many People Work on the Trading Floor?

The lower CME trading floor can accommodate up to 4,300 people at one time, while the upper floor can accommodate 2,300. But the exact number of people working on the floors varies from day to day, even hour to hour. Someone may be in a particular trading pit for a few hours, then leave for a break and return for the close of trading in that contract. When markets are extremely active, traders are less likely to stay away from the action for too long, so the floor may be a bit more crowded.

On a typical day there are about 5,000 people on the CME floors. This includes brokers, traders, member and member firm employees, CME market reporters, and supervisors.

There are CME members, CME employees, out-trade clerks and many employees of member firms on the floors of the exchange each day.

Trading Venues: Open Outcry and Electronic Trade Matching

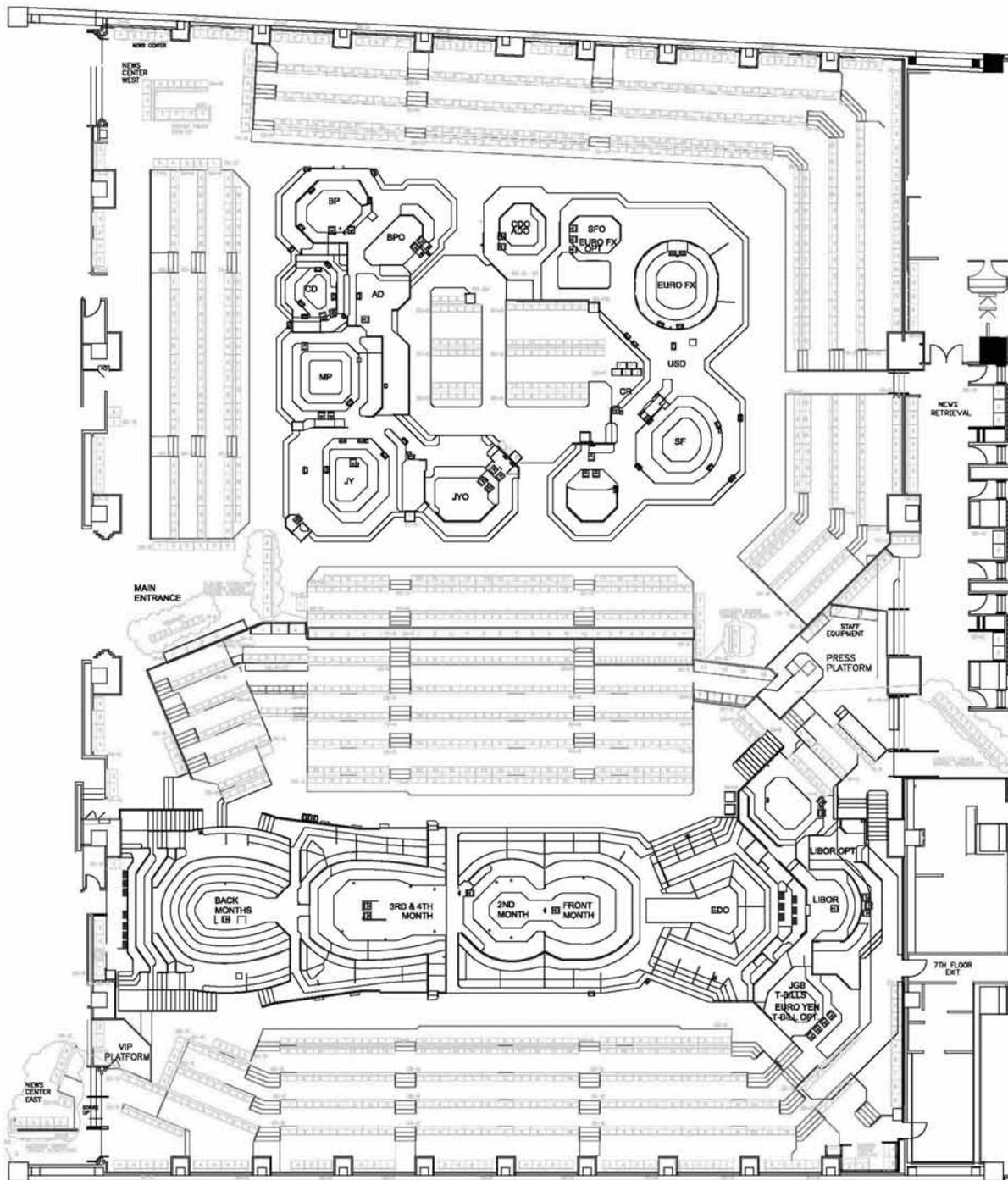


Chicago Mercantile Exchange
International Monetary Market

EXISTING LTF

Index + Options Market

REV. 01/21/06
SCALE 1/2" = 1'-0"



Chicago Mercantile Exchange

International Monetary Market

Index + Options Market

EXISTING UTF



DATE: 01/01/00
SCALE: N.T.S.

CME Futures Product Codes

Futures contracts are assigned symbols for faster and easier reference purposes. The “ticker” (product codes) symbols you see here are a form of shorthand for the contracts and their delivery months. Instead of writing December CME Japanese Yen, we use the symbol JYZ (contract, then month). Most of the symbols below indicate floor-traded contracts; electronically traded products may use different symbols.

Month Symbols		SOME CME FUTURES PRODUCT CODES		
January	F	CME Commodity Products		
February	G		Ticker	CME Globex
March	H	CME Live Cattle	LC	LE
April	J	CME Feeder Cattle	FC	GF
May	K	CME Lean Hogs	LH	HE
June	M	CME Frozen Pork Bellies	PB	GPB
July	N	CME Milk	DA	
August	Q	CME Random Length Lumber	LB	
September	U	CME Foreign Exchange Products		
October	V		Ticker	CME Globex
November	X	CME Australian Dollar	AD	6A
December	Z	CME British Pound	BP	6B
		CME Canadian Dollar	CD	6C
		CME Euro FX	EC	6E
		CME Japanese Yen	JY	6J
		CME Mexican Peso	MP	6M
		CME Swiss Franc	SF	6S
		CME Interest Rate Products		
			Ticker	CME Globex
		CME Eurodollars	ED	GE
		CME LIBOR	EM	GLB
		CME Equity Products		
			Ticker	CME Globex
		CME S&P 500	SP	
		CME E-mini S&P 500		ES
		CME S&P MidCap 400	MD	
		CME Nikkei 225	NK	NKD
		CME GSCI	GI	
		CME Russell 2000		RL
		CME Alternative Investment Products		
		CME NYMEX e-miNY Crude Oil		QM
		CME NYMEX e-miNY Natural Gas		QG
		CME Benzene	BZ	
		CME Mixed Xylenes	MX	

Other symbols are used as a shorthand for put and call options. Instead of writing October CME Live Cattle put option, CME uses the symbol PKV (option, contract, then month).

SOME CME OPTIONS ON FUTURES PRODUCT CODES

	Calls	Puts
CME Commodity Products		
CME Live Cattle	CK	PK 
CME Feeder Cattle	KF	JF
CME Lean Hogs	CH	PH
CME Frozen Pork Bellies	KP	JP
CME Milk	DA	DA
CME Random Length Lumber	KL	JL
CME Foreign Exchange Products		
CME Australian Dollar	KA	JA
CME Brazilian Real	BR	BR
CME British Pound	CP	PP
CME Canadian Dollar	CV	PV
CME Euro FX	EC	EC
CME Japanese Yen	CJ	PJ
CME Mexican Peso	MP	MP
CME Swiss Franc	CF	PF
CME Interest Rate Products		
CME Eurodollar Time Deposit	ZE	PS
CME 1-Month LIBOR	OL	OL
CME Equity Products		
CME S&P 500	CS	PS
CME S&P MidCap 400	MD	MD
CME Nikkei 225	KN	JN
CME GSCI	OG	OG
CME Russell 2000	YUC	YUP

Month Symbols

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

How to Read the Display Boards

Here is an example of one of the display boards that you can see all around the walls on the CME trading floor.

	Name (symbol) of the commodity or financial instrument (Live Cattle)		Contract delivery month
	[LC]	Aug	Oct
Open Range	7267	7230	
	7275		
High	7282	7232	
Low	7210	7170	
Est Vol	18,629	9,443	
7	7230	90	
6	32B	92	
5	32A	95	
4	30	97	
3	35	7200	
2	32A	7197	
Last	32	7195	
Net Change	-35	-17	
Prev Settle	7267	7212	
Year High	7490	7505	
Year Low	6580	6250	

Open Range is the price (or prices) reflecting the initial activity of each futures contract for that day.

Daily High is the highest sale or bid during the current trading session.

Daily Low is the lowest sale or offer during the current trading session.

Estimated Volume is a computerized estimate of the number of contracts traded in the current trading session.

Price Changes (includes up to the last 7) are read from the bottom up, with the Last or most current quote listed at the bottom.

Net Change indicates the difference between the last price and the prior settlement price, showing how much the market has moved up or down from the close of yesterday's trading.

Previous Settlement for the prior day's business, determined by averaging the extremes of range reached in the Closing Range (within last minute or less of trading).

Year High/Year Low refers to the contract high and contract low, showing the highest and lowest sale or bid reached since the contract was listed.

As you can see, a highly developed and specialized “culture” — meaning all the means devised for communicating quickly and accurately, identifying who’s who, and conveying price information — has developed on the trading floor over the years. Trading floors are unique and exciting environments, and well worth a visit to see for yourself how it all works.

QUICK QUIZ #1**Fill in the futures contract symbol for the following:**

1. December CME S&P 500
2. June CME Japanese Yen (floor-traded)
3. May CME Feeder Cattle
4. July CME Frozen Pork Bellies

Electronic Trading at CME

In addition to open outcry trading on a trading floor, buyers and sellers of futures contracts now also come together through electronic trade matching. As you learned in Chapter One, electronic trading is the predominant venue for futures trading in most countries outside the U.S. Approximately 70% of the volume at CME now comes from electronic trading, and this venue continues to grow.

CME has created a unique and highly successful mix of both open outcry and electronic trading. Virtually all CME products are traded electronically at some point during the day, and most still also trade on the floor. Some products trade electronically when the trading floor is closed, and some trade simultaneously on the CME Globex platform and via open outcry. There are also products, such as the CME E-mini stock index contracts, that trade only electronically and never via open outcry. This mix has developed in response to the needs and demands of the trading audience, as well as with consideration of the characteristics of the products themselves.

Brief History of Electronic Trading at CME

CME began pioneering the concept of electronic futures trading in the late 1980s, a time when many companies were exploring new possibilities for applying technology to meet business needs. At CME there was a demand for extended trading hours in foreign currency futures to better meet the needs of companies doing international business.

Five years in the planning, the CME Globex platform was launched in June 1992 and was the first global electronic trading platform for the trading of futures and options on futures products. The platform offered after-hours trading on a handful of foreign exchange products. A few months later, after-hours trading of CME Eurodollar futures and options on futures was added. The exchange's benchmark CME S&P 500 futures and options on futures became available electronically, again for after-hours trading only, in September 1993.

Trading on the CME Globex platform took an exponential leap beginning in 1997 with the introduction of the CME E-mini S&P 500 contract, the first futures contract designed specifically and solely for electronic trading. This contract, which is one-fifth the size of the standard CME S&P 500 contract, quickly became the fastest-growing product in CME history. The CME E-mini NASDAQ-100 futures contract, another around-the-clock, electronic-only product one-fifth the size of the standard contract, was launched in 1999 and became the second-fastest growing CME product.

The CME Globex platform has grown from its modest beginnings as an after-hours platform to a trading platform available virtually around the clock, five days a week, Sunday evening through Friday afternoon, to customers all over the world. Volume in the system's first year averaged less than 1,000 per day. Today, average daily volume is approximately three million contracts, making CME Globex one of the largest electronic derivatives markets in existence.

Increasing Sophistication of the Platform

Today's CME Globex platform offers far greater capabilities than the system introduced in 1992. The technology available now is more sophisticated and complex than it was in the early 1990s, and the system has been continually upgraded to take advantage of changes in available technology to increase the speed, capacity, reliability, functionality and accessibility of the platform.

A key feature of the CME Globex platform is that it is highly "scalable," which means it can accommodate growing volume and new products. The platform's open architecture enables customers to access it with their own proprietary trading applications or with systems provided by futures brokers and Independent Software Vendors (ISVs). Alternatively, customers may choose to connect to the CME Globex system with CME Globex Trader, a CME-provided front-end trading application.

Advances in technology have also enabled the platform to accommodate more complex trading strategies. For example, CME's Eagle Project, launched in January 2003, enables customers to execute implied spread trading for CME Eurodollar futures on the CME Globex platform. Previously, these strategies could only be transacted on the trading floor because of

their complexity. The exchange has since added implied spreading functionality and other enhancements to other products on the CME platform, as well as provided additional electronic trading strategies with the launch of new phases of Eagle.

An International Platform

Electronic trading at CME has always had an international component (the first connections were to Paris and London) but now there is a specially designated CME telecommunications “hub” in London to meet the electronic trading needs of customers outside the United States. The hub also makes it possible to lower the costs of access to CME markets overseas.

The CME Globex marketplace is appealing because it provides access to a diverse range of futures and options contracts basically around-the-clock. Trades are executed, on average, in less than one-third of a second, and the transparency of electronically traded contracts ensures that all market participants can see accurate prices at all hours of the day and night. The deep liquidity of many of the electronic markets enables traders to make timely and efficient moves into and out of positions.

A Diverse Range of Products

The CME Globex platform offers access to all of CME’s major product categories — equities, interest rates, foreign exchange and commodities — as well as alternative investment products.

In addition, the CME Globex platform also offers certain non-CME products. In 2002, CME and the New York Mercantile Exchange (NYMEX) launched CME e-miNY crude oil and natural gas futures, based on CME’s successful CME E-mini concept. These contracts trade on the CME Globex platform but are cleared at the NYMEX Clearing House.

Customers can also use the CME Globex platform to trade OneChicago security futures. These are futures contracts on individual stocks, narrow-based indexes and Exchange-Traded Funds (ETFs). OneChicago is a joint venture of CME, the Chicago Board Options Exchange (CBOE) and the Chicago Board of Trade (CBOT).

You can find a complete list of products offered on the CME Globex platform on the CME Web site at www.cme.com/globexproducthours.

Open Access

A major difference between open outcry trading and electronic trading is that there are no membership requirements for trading on CME’s electronic platform. All customers who have an account with a Futures Commission Merchant (FCM) or Introducing Broker (IB) (who in turn have a CME clearing house guarantee) can view the book of prices (bids and offers currently available on a product) and directly execute transactions in CME’s electronically traded products. This open access policy has expanded the potential customer base for futures trading. Market integrity is still maintained, however, because all trades are guaranteed by a clearing member firm and CME’s clearing house.

The Life of an Order

To trade on the CME Globex platform, you enter your orders via your trading software, which routes the orders to CME and the CME Globex matching engine. Each user receives an order acknowledgement from the CME Globex system, which then stores all orders in a centralized order book by market. Orders are matched based on the appropriate matching algorithm and contract specifications (i.e., tick size, price band variation range).

As a CME Globex trader you can modify or cancel your orders at any time until the order is executed (filled). After your trade has been executed, you will receive the fill information from CME Globex through your trading application. At the same time, the trade information is sent in real-time to the CLEARING 21® system at the CME clearing house for post-execution processing.

Market Data

The CME Globex platform provides users real-time market prices, including aggregate order volumes available to buy or sell in the market at the various price levels (the “CME Globex Book”). CME disseminates this real-time electronic market data via four distribution mechanisms:

- » Quote vendors distributing CME product quotes via the Market Data Network (MDN)
- » Third-party trading applications for accessing CME Globex market data
- » The CME Globex Trader front-end trading application
- » E-quotes, CME’s real-time market data application over the Internet

CME Globex Order Entry and Management

A user may enter orders via a front-end trading application at any time from the start of the pre-opening period until the market closes. These orders may be for any contract, month or strategy.

When an order is submitted to the CME Globex matching engine, it is considered “accepted” once the engine has confirmed it as valid, time-stamped it and sent an acknowledgement to the customer.

Orders that do not trade to completion are stored in the central order book. As with open outcry trading, the time stamp on your order is used for subsequent order prioritization.

Trading Sessions on the CME Globex Platform

For CME Globex products, the start of the CME Globex session, which usually occurs in the afternoon or evening, generally marks the beginning of the next Trading Day. (For example, orders entered during Sunday’s evening session are dated for and cleared on Monday).

The Trading Day includes both the CME Globex session and the trading floor open outcry session (i.e., the time accounted for during "Regular Trading Hours"), if the CME Globex and open outcry sessions overlap for a given product.

Products that trade on the CME Globex platform are classified into three trading groups based on their hours of availability:

- » "Side-by-Side" contracts trade on the CME Globex platform and, for a portion of the day, simultaneously via open outcry on the trading floor.
- » "Electronic-only" contracts trade only on the CME Globex platform.
- » "After-Hours Electronic" contracts trade electronically on the CME Globex platform only after the product stops trading via open outcry on the trading floor.

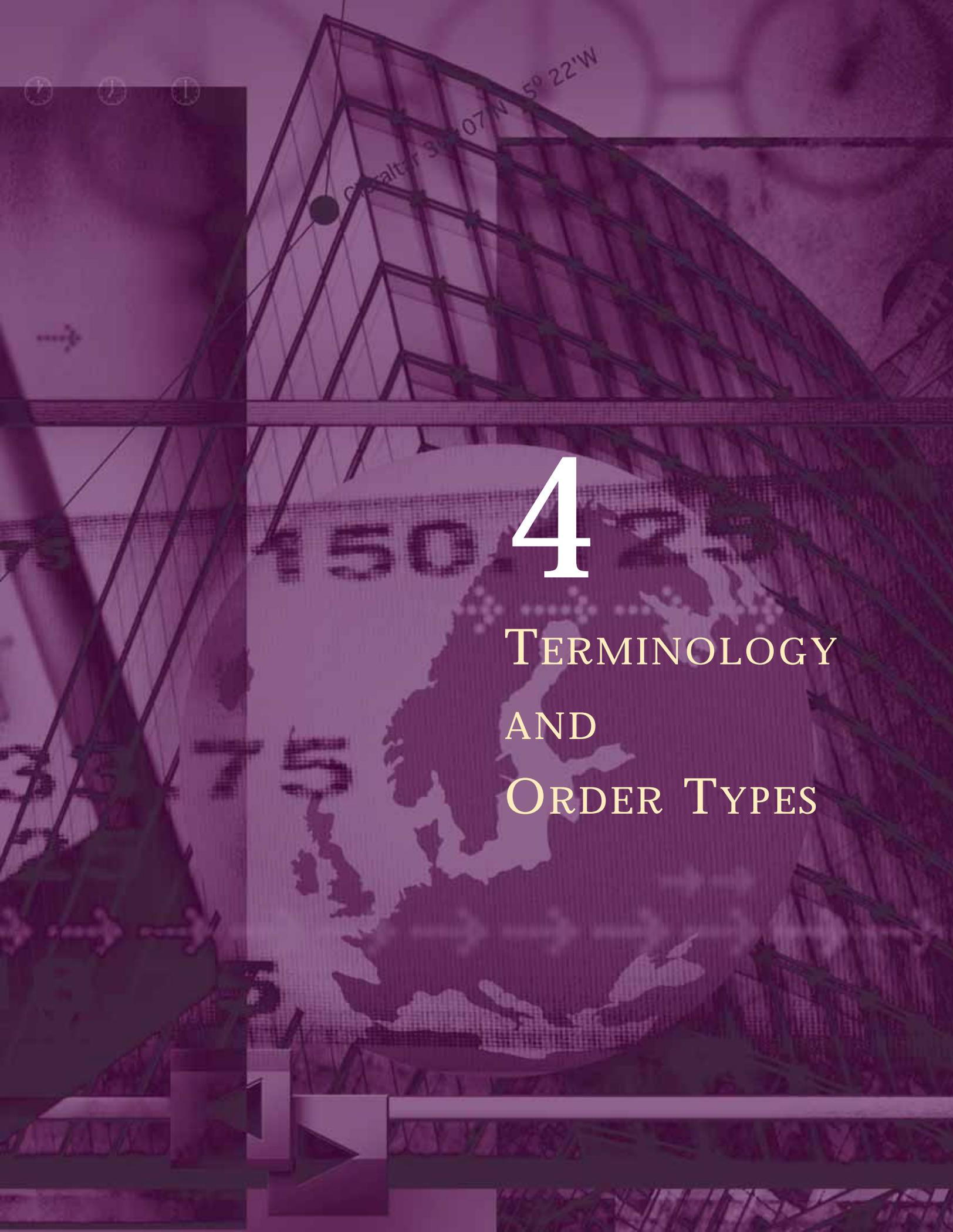
As you can see, the essentials of order placement, trade matching, confirmation and clearing are basically the same with electronic trading as with the open outcry system. Buyers and sellers are brought together, trades are verified and accounts marked-to-market when the trading session ends. What's different? No elaborate hand signals, colored jackets, trading pits. Business is conducted via keyboard and screen rather than face-to-face negotiation.

One Contract, Two Platforms

We should emphasize that traders may initiate and liquidate (close out) positions on either the open outcry (pit) or the CME Globex platform. For example, a trader may enter a Buy order for 1 December CME Eurodollar contract by directing the order to the trading floor; and can then liquidate the position by directing a Sell order to the CME Globex platform. There is only one CME Eurodollar contract, not separate pit and CME Globex contracts.

WHAT DOES THE TRADING DAY LOOK LIKE FOR TUESDAY, OCTOBER 4, 2005?

Trading Group	Example	CME Globex Platform	Trading Floor Platform
Side-by-Side	CME Swiss Franc	5:00 p.m., October 3 - 4:00 p.m., October 4	7:20 a.m.- 2:00 p.m., October 4
Electronic-only	CME E-mini S&P 500	3:30 p.m., October 3 - 3:15 p.m., October 4	
After-hours Electronic	Regular CME S&P 500	3:30 p.m., October 3 - 8:15 a.m., October 4	8:30 a.m., October 3 3:15 p.m., October 4



4

TERMINOLOGY AND ORDER TYPES

Terminology and Order Types

There is a glossary of terms at the end of this book, but let's take this opportunity to acquaint ourselves with some of the more common futures terminology.

Bull Market

A bull market is a market in which prices are rising. When someone is referred to as being **bullish**, that person has an optimistic outlook that prices will be rising.

You agree on a price to pay for delivery in the future.

Bear Market

A bear market is one in which prices are falling. Therefore, a **bearish** view is pessimistic, and that person would believe that prices are heading downward.

Going Long

If you were to **buy** a futures contract to initiate a position, you would be **long**. A person who has purchased 10 pork belly futures contracts is **long 10 pork belly contracts**.

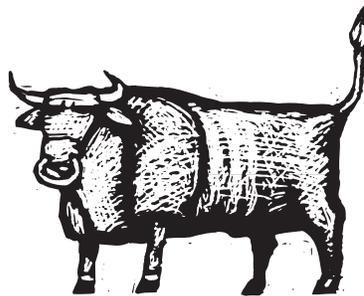
Someone who is long in the market expects prices to rise. They expect to make money by later selling the contracts at a higher price than they originally paid for them.

If you buy a futures contract, you're long.



BEAR MARKET

A market in which prices are falling.



BULL MARKET

A market in which prices are rising.

If you sell a futures contract to initiate a position, you're short.

LONG AND SHORT

*If you bought a July CME Lean Hogs contract, you would be **long July CME Lean Hogs**. To get out of the market, or offset your position, you would sell a July CME Lean Hogs contract.*

*If you sold a March CME LIBOR contract, you would be **short March CME LIBOR futures**. To offset or cancel your obligation you would buy a March CME LIBOR contract.*

Futures contracts don't last forever.

LAST DAY OF TRADING ALWAYS DESIGNATED

Each contract has a specified last day of trading. For example, the September CME Canadian Dollar futures contract matures in September. The last day of trading on the contract would be the business day immediately preceding the third Wednesday of September.

Going Short

A more difficult concept involves the sale of futures contracts before buying them. Someone who **sells** a futures contract to initiate a position is said to be **short** — for example, **short 10 pork belly contracts** would mean that a person initiated a position by selling those 10 contracts. But don't confuse this concept with someone who originally went long by purchasing futures contracts and is now selling them to offset his or her position in the market. A **short seller** has entered into an obligation to deliver a commodity at a future date, at a price agreed upon today, but with the ability to offset that obligation by buying back the futures contract.

As a short seller, you believe that prices are heading downward, so you sell futures contracts that you think will be less valuable sometime in the future. If things go as you anticipated and the market does head downward, you can then buy back those same contracts at a lower price and make a profit. The transaction is in reverse, but you can still make money the old fashioned way — buy low, sell high.

Let's take a hypothetical example of how this would work in real life in a forward market scenario. Johnny and Jill are playing in the park on Saturday afternoon. Johnny tells Jill that he would pay \$10 if he could get his hands on a genuine professional baseball. Jill (who aspires to be a futures trader some day) can recognize an opportunity when she sees one. Jill tells Johnny that she will sell him that pro baseball for \$10, but asks if Johnny can wait until tomorrow to give it to him. Johnny agrees and hands over the \$10 to Jill, thus entering into a forward sale. The next day Jill runs over to the local sports store, buys the baseball for \$6 and delivers it to Johnny. Jill walks away with a \$4 profit, having sold the baseball before she purchased it. Now you can see how short selling (selling something before you've actually purchased it yourself) can work!

Contract Maturity

Futures contracts have limited lives, known as contract maturities. Contract maturity is expressed in terms of months, such as December. The contract maturity designates the time at which deliveries are to be made or taken, unless the trader has offset the contract by an equal, opposite transaction prior to maturity. Futures contracts are typically traded up to one year into the future, while some commodities may trade more than two years into the future (e.g., CME Eurodollar futures).

Many contracts expire quarterly — specifically towards the end of March, June, September and December. For simplicity, the months are assigned alphabetical codes.

Delivery

Only about 3% of all futures contracts actually result in physical delivery or cash settlement of the commodity. The other 97% are simply **offset**. That means that the majority of participants close out their positions prior to the contract's delivery date (sellers buy back the futures they sold, and buyers sell back the futures they bought).

For some futures contracts, such as stock index futures, there is no physical delivery. Rather, positions are closed out through **cash settlement**. On the day following the final trading day, open contract positions are settled in cash with no deliveries of the securities. The full value of the contract is not transferred to your performance bond account. Instead there is a final "marking-to-the-market" of the contract position to the actual index based upon the opening values of the stocks, with the final gain or loss applied to the performance bond accounts. With this cash delivery feature, liquidity is ensured to the last day of trading of the contract.

Why would the remaining 3% of traders make or take delivery? They would do this primarily for two reasons:

- » The buyer or seller actually has need for the product to be bought or sold. Farmers and homebuilders are examples.
- » The locked-in futures price is better than what they could get elsewhere in the marketplace.

Hedge

If you "hedge," you buy or sell a futures contract as a temporary substitute for a cash market transaction to be made at a later date. Hedging usually involves holding opposite positions in the cash market and futures market at the same time. Hedging is a business management tool used to manage price risk.

Long Hedge

If you put on a "long hedge" you purchase a futures contract in anticipation of an actual cash market purchase. Processors or exporters typically use long hedges as protection against an increase in the cash price.

Example: An American cruise line facing increases in the price of the Euro (currency) could put on a long hedge in CME Euro FX futures to minimize the price risk they face. The long hedge would enable the cruise line to purchase the Euros at the lock-in price of the futures, even if exchange rates do in fact rise.

97% of futures contracts are offset.

Cash settlement, in futures trading, simply means the offsetting of an outstanding futures obligation with a final mark-to-market adjustment. The trader will ultimately receive (or pay) the difference between the price at which the trader initiated the position, and the final settlement price.

Short Hedge

To put on a “short hedge” you would sell a futures contract in anticipation of a later cash market sale. Traders use short hedges to eliminate or lessen the possible decline in value of ownership of an approximately equal amount of a cash financial instrument or physical commodity.

Example: In contrast to businesses that need to purchase commodities, such as airlines, other businesses produce or harvest commodities to sell, and therefore worry about price decreases in their commodities rather than price increases. Thus, commodity producers, such as farmers, put on “short hedges.” A farmer, for example, who needs to sell his crops at a certain price in order to make a profit, will attempt to lock in a reasonable price for his crop through a short hedge, to protect himself against too low a price in the cash markets at harvest time.

It is important for all people who hedge, either through long or short hedges, to realize that while hedging can provide price protection for them, there is also a “cost” involved. If the hedge succeeds and they minimize their price risk, they also sacrifice a possibly greater return than they would have had had they not hedged. The hedge provides a type of insurance for them, but also determines the price at which they will buy or sell the commodities they are trading.

Speculator

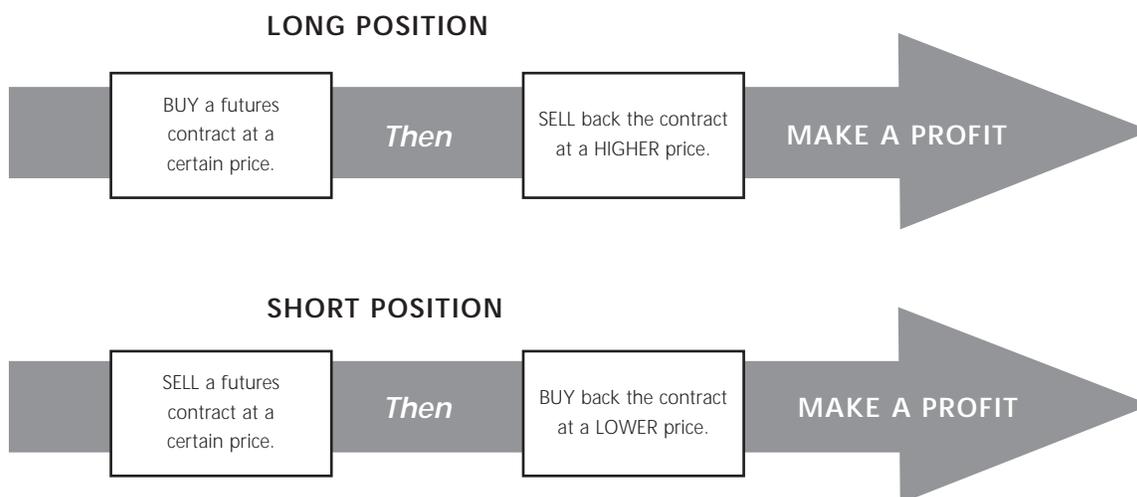
You would be considered a “speculator” if you bought and sold futures contracts for the sole purpose of making a profit. Speculators attempt to anticipate price changes. They do not use the futures markets in connection with the production, processing, marketing or handling of a product, and have no interest in making or taking delivery.

The rule for speculators in futures trading is to buy low and sell high.

Review of Futures Trading and Price Discovery

Before we go learn any more terminology, let's take a moment to review the concept of futures trading and how people make or lose money in the trading process. Quite simply, futures trading is the buying and selling of futures contracts or options on futures contracts. (You'll learn about options on futures in Chapter 9.)

If you buy a futures contract at one price and sell it at a higher price, you make money. If you sell at a lower price than you paid when you went long, you lose money. In trading futures and options on futures you can buy and sell in whatever order you want. You can buy, then sell or sell, then buy. Whichever way you choose, the selling price should be higher than the buying price if you want to make a profit. The rule is to buy low, sell high.



How are futures and options prices determined?

In a free market, prices are determined by what the seller can get from the buyer or “what the market will bear” (in other words, supply and demand). If buyers are more eager than sellers, prices tend to go up. When the opposite is true, prices tend to go down.

Here’s an example of the free market at work. Suppose you decide to sell your much-loved, but now outgrown car. You place an ad in the newspaper and list the price at \$5000. Someone out there is looking for exactly your kind of car, but is only willing to pay \$4500. Who is setting the price? The buyer is, because your car is worth what someone else will pay for it (assuming you’re willing to settle for \$4500).

If only one person wants to buy and there are 10 people selling a car just like yours, that one buyer can exercise more influence over the price than the 10 sellers. On the other hand, if yours is the only car of its type and you have 10 interested buyers, you are pretty certain to get the price you want.

The same relationship between sellers and buyers (supply and demand) exists in the markets for futures and options on futures. Prices are determined by what someone is willing to pay for a given product. The most recent traded price represents a coming together of buyers and sellers.

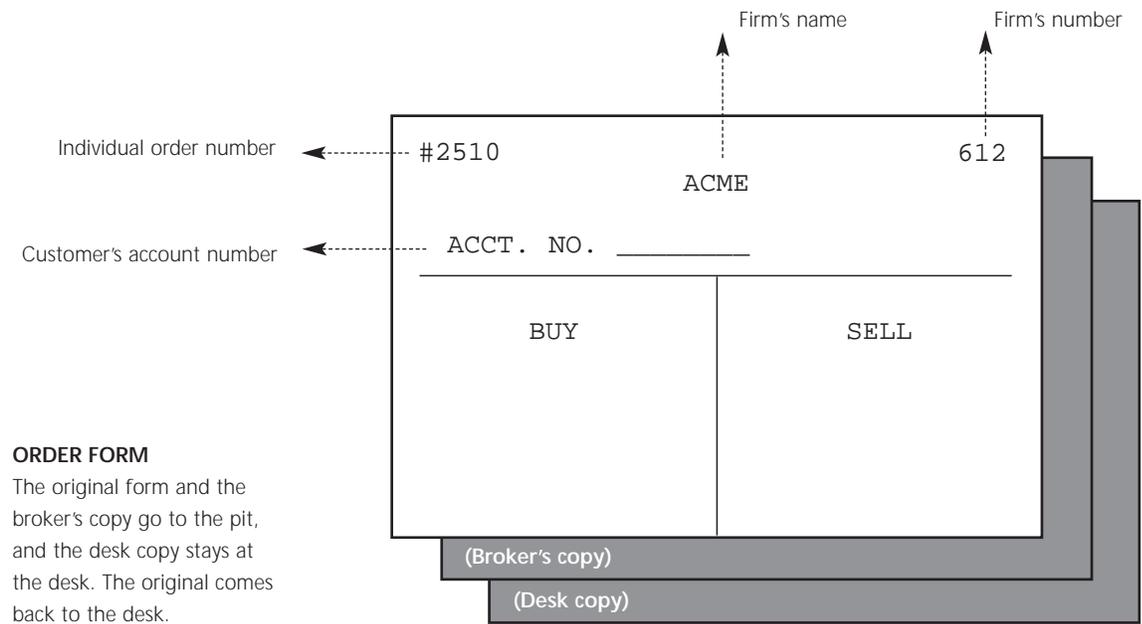
Types of Futures Orders

There are buy orders, sell orders and spread orders.

There are a number of different ways you can go about trading to reach your goal of buying low and selling high. Whenever you trade futures, you must specify what kind of trade you are interested in making. There are a number of different order types you could place through a broker or, if you were trading electronically, through the CME Globex electronic matching engine, and you need to know the terms that describe these order types. At present, the order types available do differ somewhat between the open outcry and electronic trading venues. For electronically placed orders, the available order types also vary according to which brokerage and which type of system interface you are using.

The basic futures orders are buy orders, sell orders and spread orders. In open outcry trading, these orders are relayed to your brokerage firm's desk on the trading floor by telephone or a computerized order entry system. Then they're written or printed out on an order form as a buy order (left side of the form), a sell order (right side of the form) or a spread order (both sides). The order is then brought by a runner or flashed to the firm's floor broker in the appropriate pit so it can be filled. Or, the order is sent direct to a handheld device used by the floor broker — eliminating the need for paper tickets brought out by runners. When and if the order is filled, the executed (filled) order is conveyed back to the firm's desk by runner, hand signal or electronically from the floor broker's handheld. You then receive confirmation of the fill by phone or computer. In electronic trading, your order and fill are posted to your computer screen.

SAMPLE OPEN OUTCRY ORDER TICKET



ORDER FORM

The original form and the broker's copy go to the pit, and the desk copy stays at the desk. The original comes back to the desk.

Market Orders

A market order is an order that is to be filled at the best available price immediately upon receipt by the broker. Here are examples of three different ways of writing a market order. The order is interpreted as follows: **For account 83156, buy 2 December CME Swiss francs at the market.**

You can shoot for the best price at which to buy or sell.

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL
<i>2 Dec Swiss</i> —		

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL
<i>2 Dec Swiss-MKT</i> ==		

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL
<i><u>2 Dec Swiss</u></i>		

Limit Orders

You can say at which price you want to buy or sell.

A limit order instructs the broker to fill the order at a specified price.

This example reads: **Buy 2 February CME Live Cattle at 6627**. It is understood that if the order can be executed, it will be filled at 6627 or any price lower than 6627. It cannot be filled at any price higher than 6627. That would be considered an error.

#2510		61
	ACME	2
83156		
<hr/>		
BUY	SELL	
2 Feb LC 6627		

This particular order tells the broker to **sell 3 February CME Live Hogs at 5120** or any price higher than 5120. Any fill less than 5120 will cause an error.

#2510		61
	ACME	2
83156		
<hr/>		
BUY	SELL	
	3 Feb LH 5120	

Stop Orders

A stop order is an order that becomes a market order if and when the market reaches a designated price. A **buy stop** is placed above the market and becomes a market order when the commodity trades or is bid at or above the specified stop price. A **sell stop** is placed at a price below the market. It becomes a market order when the commodity trades or is offered at the stop price or below.

To trade this buy stop order, the market in Swiss francs must be trading at or above 75.

#2510		61
	ACME	2
83156		
<hr/>		
BUY	SELL	
<i>5 Mar Swiss 8875</i>		
<u>Stop</u>		

IS IT CONFUSING?

The stop order can be hard to understand at first. But this example will help you.

Let's say July hogs are at 50¢ and you're long at 52¢. You don't want to lose any more than 5¢ / contract. You can put a sell stop at 47¢. As long as the market stays above 47¢ you stay long. If prices drop, your order becomes a market order when 47¢ trades and your position is offset, protecting you from further losses. This is the most common use of a stop and is called a "stop loss order."

To execute this sell stop order, the market must be trading at or below the 8890.

#2510		61
	ACME	2
83156		
<hr/>		
BUY	SELL	
<i>5 Mar Swiss 8890</i>		
<u>Stop</u>		

A spread is a special kind of trade explained in Chapter 7.

Spread Orders

A spread is an order to buy one futures contract and sell another futures contract of the same or a related commodity simultaneously at a specified price difference. The order below instructs the broker to **buy 10 Dec CME Live Cattle at 100 points over the price at which he sells 10 Feb CME Live Cattle**. The broker can fill this order at 95 points December over February, but not at 105 points December over February.

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL
10 Dec LC		10 Feb LC
<u>+100</u>		

Order Types on the CME Globex Platform

The following order types are currently supported by the CME Globex matching engine:

- » **Limit:** As described above, this is an order to execute a trade at a specified Limit price.
- » **Market-Limit:** Also as described above, this is an order to execute a trade at the best available price. If the entire quantity cannot be filled at the best opposite price, the unfilled quantity remains in the market as a Limit order at that opposite price.
- » **Stop-Limit:** As with open outcry orders, this is a request to execute a trade at a specified Limit price only when the market hits the specified Stop price.

CME's iLink interface (the interface to the CME Globex platform developed and offered by CME) supports only the order types described above on the CME Globex matching engine.

However, third-party front-end applications to CME Globex generally provide additional order types. For a comprehensive list of order types supported by your front-end trading application, please contact your broker or software vendor.

It is important to note that the CME Globex platform and capabilities are under continual development. For example, a new order type is being developed that will allow an order to be filled within a pre-determined range of prices, and others are likely to be added.

To know for certain which order types are supported on CME Globex in conjunction with the CME interface, you should check the CME Web site at cme.com. A table of order types is provided on the next page.

COMPARISON OF ORDER TYPES ON THE TRADING FLOORS AND CME GLOBEX

	Trading Floor	CME Globex
Accepts GTC orders	Yes	Yes
Accepts MARKET orders	Yes	Yes
Accepts PRICE LIMIT orders	Yes	Yes
Accepts STOP orders	Yes	Yes
Accepts STOP LIMIT orders	Yes	Yes
Accepts MOC orders	Yes	No

True or False

1. _____ All futures trading takes place in the pits.
2. _____ The symbol for the CME Eurodollar futures contract is ED.
3. _____ The symbol for the CME British Pound futures contract is PS.
4. _____ A market order can only be filled when the price specified on the order is reached.
5. _____ The role of the floor broker is to provide the link between the customer and the execution of his order in the trading pit.
6. _____ Every futures contract for a specific commodity differs in terms of quantity and quality because these must be negotiated by the traders.
7. _____ Anyone who wants to trade futures can walk into a pit at CME and make a bid or offer.
8. _____ Futures markets are auction markets that give all traders an equal opportunity to get the best possible price for each transaction.
9. _____ A stop order becomes a market order when the market reaches the designated price.

CONTINUED...

QUICK QUIZ #1

QUICK QUIZ

Multiple Choice

1. What does the member firm's floor broker do?
 - a) Time stamps the incoming order
 - b) Announces the bid or offer by hand signals, open outcry and other means to all traders in the pit
 - c) Conveys the order from the communications desk to the trading pit
 - d) All of the above

2. All trade orders must indicate all the following information except:
 - a) Quantity, commodity, month
 - b) Buy or sell, price or other special execution instructions
 - c) Name and address of the customer
 - d) Customer account number

3. The order illustrated at right is an example of:

- a) A limit order
- b) A market order
- c) A stop order
- d) A spread order
- e) None of the above

#2510	ACME	61 2
83156		
BUY	SELL	
<u>2 Dec LC</u>		

Fill out these orders as if you were a CME phone clerk.

1. Buy 5 December CME Live Cattle contracts at 6700.

#2510	ACME	61 2
83156		
BUY	SELL	

QUICK QUIZ

2. Sell 2 March CME British Pound contracts at the market.

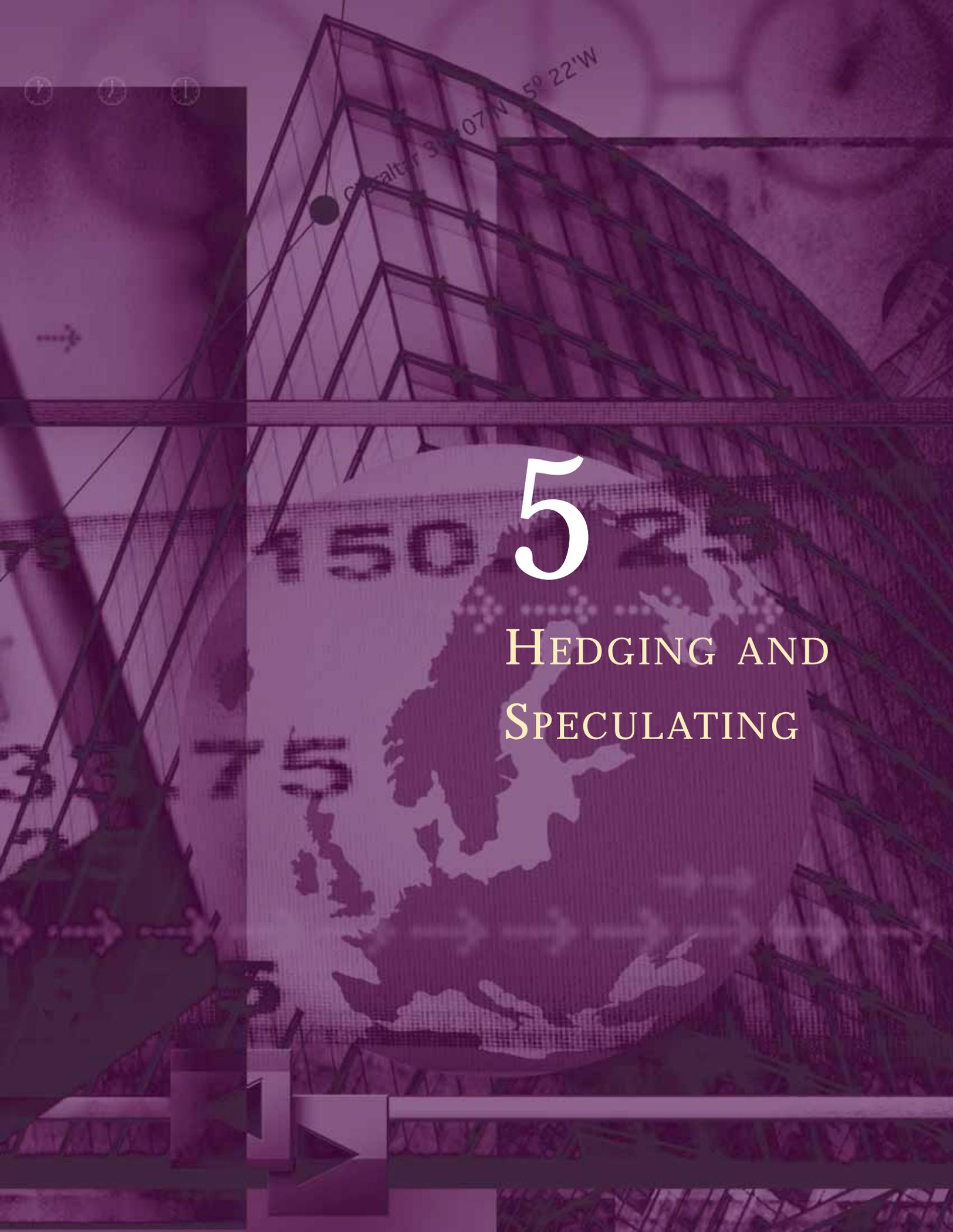
#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL

3. Buy 10 March CME Eurodollar contracts at the market.

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL

4. Sell Stop 20 April CME Lean Hogs at 5000.

#2510		61
	ACME	2
83156		
<hr/>		
BUY		SELL



5

HEDGING AND SPECULATING

Hedging and Speculating

Hedging

Earlier we discussed how changes in the forces of supply and demand could affect the price of a commodity. For example, an excess supply of corn brought to the market can drive prices downward. Likewise, a boom in residential homebuilding will exert demand pressure for lumber, thus bidding up the price of lumber in the open market.

As futures trading developed, market participants began to note a fundamental relationship between the cash market prices (today's prices) and that of futures prices. They observed that as the forces of supply and demand began to shift, cash prices and futures prices tended to rise and fall in a roughly parallel fashion. So if, for example, a construction boom started to raise prices for lumber in today's market, lumber futures prices would also rise. Noticing this relationship was significant, because market participants realized that they could take action in the futures market that could control or minimize their cash market risk.

Let's take a look at how a homebuilder could use futures to reduce the risk that a higher cost of lumber three months from now could hurt his chances of making a profit. Because the homebuilder plans to buy lumber in the future, he will need to *buy futures* contracts **now** that will approximate that amount of lumber. By doing so, the homebuilder will be able to "lock in" the price of lumber in advance. This is known as **hedging**.

A Long Hedge

Suppose on June 1 our homebuilder realizes he needs to purchase 110,000 board feet of lumber on September 1. Today's cash price for lumber is \$300 per 1000 board feet (\$300/MBF).

Our builder observes that September CME Random Length Lumber futures are currently trading at \$305/MBF. He also knows that historically the futures price in September tends to be about \$5/MBF higher than the cash price. So the builder figures that by buying a September CME Random Length Lumber futures contract in June at \$305, he is locking in a price of about \$300 (that's \$305 minus the \$5). Let's see how this works out.

Cash market prices and futures prices for a commodity tend to rise and fall together.

BASIS

The difference between the cash price and the futures price is called basis. The basis changes during the life of the futures contract. It tends to narrow as contract maturity approaches. That is, the futures price moves closer to the cash price during the delivery month.

A homebuilder wants to buy lumber.

LUMBER FUTURES

A CME Random Length Lumber futures contract is 110,000 board feet.

Hedging and Speculating

	CASH MARKET	FUTURES MARKET
JUNE 1	<i>Needs to buy lumber in September for \$300/MBF to make desired profit.</i>	<i>Buys (goes long) one September CME Random Length Lumber futures contract at \$305/MBF.</i>
SEPT. 1	<i>Cash price rises to \$315/MBF. The builder buys lumber for \$315/MBF.</i>	<i>The builder sells his September CME Random Length Lumber contract at \$320/MBF.</i>
RESULTS	<i>Homebuilder pays \$15/MBF more for lumber than he wanted to.</i>	<i>However, he gains \$15/MBF when he sells the futures contract.</i>

Let's look at what happened to the numbers.

	CASH MARKET	FUTURES MARKET
JUNE 1	$\$300/\text{MBF} \times 110 = \$33,000$	$\$305/\text{MBF} \times 110 = \$33,550$
SEPT. 1	$\$315/\text{MBF} \times 80 = \$34,650$	$\$320/\text{MBF} \times 110 = \$35,200$
RESULTS	<i>Higher cost in cash market: Spent \$1,650 more</i>	<i>Net profit in futures market: Gained \$1,650</i>

As you can see, the homebuilder was able to offset exactly his increased lumber costs in the cash market with his futures market profits. In other words, the profit on the futures hedge exactly offset the increase in the cost of lumber in the cash market. Deducting his \$15/MBF profit from the \$315/MBF he paid to his supplier for the lumber gave the homebuilder a net cost of \$300/MBF — precisely the amount he had hoped to spend when he placed the hedge.

*NOTE: The homebuilder example given here is called a **perfect hedge**, which rarely happens exactly as we've portrayed it. Although futures and cash prices tend to parallel each other, they don't usually move in exact amounts. So, if the September CME lumber futures were \$5 higher than cash prices in June, they probably wouldn't be exactly \$5 over cash prices in September.*

Long Hedging

The homebuilder example demonstrates a long hedge because it involves the purchase of a futures contract or going long. An easy way to remember when to use a long hedge is this: If you are **short the commodity** (that is, you need to buy it in the future), then you must **go long in the futures market**. In other words, if you plan to buy a commodity, then you should buy the futures contract.

Why do hedgers hedge? The primary reason is that hedging reduces the impact of price fluctuations. Or more precisely, hedging reduces the risk that price fluctuations will hurt the hedger's profit. Hedging offers people who plan to purchase a commodity in the future a very good idea of what their costs will be. People who plan to sell a commodity in the future also use hedging to help them know what revenues they can expect. Both buyers and sellers can lock in a price and minimize an extremely important risk — the risk of price uncertainty. In our long hedge example, the homebuilder was able to minimize his risk of lumber price uncertainty through the purchase of a futures contract.

A Short Hedge

Let's take a look at how a lumber mill can use the futures market to reduce the risk of price uncertainty. Suppose it's June 1, and a lumber mill needs to sell 110,000 feet of lumber on September 1 at \$308/MBF to make a desired profit. Today, the cash price for lumber is \$308/MBF, and CME Random Length Lumber futures are selling at \$313/MBF.

	CASH MARKET	FUTURES MARKET
JUNE 1	<i>Needs to sell lumber in September for \$308/MBF to make desired profit.</i>	<i>Sell (goes short) one September CME Random Length Lumber futures contract at \$313/MBF.</i>
SEPT. 1	<i>Cash price drops to \$295/MBF. The mill sells lumber for \$295/MBF.</i>	<i>The mill buys back its September CME Random Length Lumber contract at \$300/MBF.</i>
RESULTS	<i>The lumber mill receives \$13/MBF less for the lumber than it needed to get.</i>	<i>However, it gains \$13/MBF when it buys the futures contract.</i>

With a long hedge, you go long or buy the futures contract.

LONG HEDGERS

People who plan to buy a commodity can place a long hedge. Who are some of these hedgers?

- » The homebuilder who needs to buy lumber
- » The meat packer who needs to buy hogs
- » The baker who needs to buy wheat
- » The portfolio manager who needs to buy stocks
- » The feedlot operator who needs to buy feeder cattle

A lumber mill wants to sell lumber.

SHORT HEDGERS

People who plan to sell a commodity can place a short hedge.

- » The lumber mill that needs to sell lumber
- » The hog producer who needs to sell hogs
- » The farmer who needs to sell wheat
- » Oil drillers who need to sell oil

The profit on the futures hedge exactly offsets the decrease in the value of lumber in the cash market. Adding the \$13/MBF futures profit to the \$295 the lumber mill got for its lumber gives the mill a net sales price of \$308 — just what it needed to get.

	CASH MARKET	FUTURES MARKET
JUNE 1	$\$308/\text{MBF} \times 110 = \$33,880$	$\$313/\text{MBF} \times 110 = \$34,430$
SEPT. 1	$\$295/\text{MBF} \times 110 = \$32,450$	$\$300/\text{MBF} \times 110 = \$33,000$
RESULTS	<i>Net loss in cash market: Sold for \$1430 less</i>	<i>Net profit in futures market: Gained \$1430</i>

Even if prices are heading down, the hedger still can make money on his futures position. Note that the lumber mill entered a short position. It sold the futures contract at a higher price (\$245/MBF) and purchased it back at a lower price (\$233/MBF).

Short Hedging

Our lumber mill example demonstrates a short hedge because it involves the sale of a futures contract or going short. An easy way to remember when to use a short hedge is this: If you are **long the commodity** (that is, you own the commodity and plan to sell it in the future), then you must **go short in the futures market**. In other words, if you plan to sell a commodity later, then you should sell the futures contract now.

People who plan to sell a commodity can place a short hedge to minimize the risk of price uncertainty.

With a short hedge, you go short or sell the futures contract.



Hedging Is Not Always Perfect

Hedging works best when the hedger has carefully calculated the basis. The basis is the difference between the specific commodity the hedger buys or sells in the local cash market and the standardized specifications of the futures contract. For example, CME cattle futures contract quality specifications are based on corn-fed steers. But what if a rancher is hedging grass-fed steers and bulls — a lower quality grade of cattle? The rancher needs to recognize that his local price for these animals will typically be lower than the cattle futures market price. And unlike a feedlot operator raising corn-fed steers near a CME delivery city and who can choose to make delivery against his short position, this particular rancher cannot. The rancher must therefore always close out the futures position and sell the cattle at the local market.

We call this cross-hedging because the product being hedged (in this example, grass-fed steers and bulls) cannot be delivered against the CME contract. The cross-hedger is now substituting basis risk for absolute price risk.

QUICK QUIZ #1

1. A meat processor will be purchasing pork bellies soon. He is afraid that higher belly prices could wipe out his potential profits. What can the meat processor do in the futures market to minimize his price uncertainty?
2. A portfolio manager has a large portfolio of stocks closely resembling the composition of stock in the S&P 500 Index. She knows that CME S&P 500 futures are traded at CME. Over the next six to nine months, she expects the market to weaken significantly. Rather than liquidating her entire portfolio now (thus incurring commission costs and tax liabilities), how can she protect against an adverse price move using CME S&P 500 futures? Would this be considered a long or a short hedge?

Risk Management

Let's recap what you have learned so far. The futures market is specifically designed for hedgers, or commercial participants, to minimize their chance of loss due to adverse price moves in the cash market. Hedgers are firms or individuals whose businesses include the same or similar commodities as those traded in the futures markets. They represent U.S. and international businesses — banks, corporations, ranchers, portfolio managers, pension funds, farmers, food processors, and a variety of other commercial concerns.

Someone has to take the risk.

The hedger attempts to reduce the risk of price uncertainty through the purchase or sale of futures contracts. By entering into futures contracts, hedgers can effectively lock in a price that will make their revenues or costs more predictable. This is risk management.

HEDGERS

- » Avoid risk
- » Protect against price changes

SPECULATORS

- » Accept risk
- » Try to profit from price changes

By now you should be wondering how the hedger can rid himself of unwanted risk. The risk cannot just disappear. Someone has to take that risk. Who are these risk takers? They're known as **speculators**.

A speculator must be prepared to accept outright losses in the futures market.

Speculators

Hedgers enter the futures market to manage risk. Speculators enter the market to accept that risk in the pursuit of profit. The speculators play an extremely important role. If it weren't for them, hedgers would not have a market in which to hedge, and there would be no futures trading.

Speculators analyze the market in an attempt to forecast future price movement and then enter the market accordingly. For example, suppose a speculator's research indicates that there is going to be a shortage of pork bellies this winter. If that happens, the excess demand for pork bellies will tend to drive up the futures price of pork bellies — more than the winter futures prices currently reflect. The speculator would then want to capitalize on this mispricing by going long in CME Frozen Pork Belly futures. If her predictions are correct and the market does move upward between now and winter, she can then sell her futures contracts and make a profit.

SPECULATORS TRADE ON OUTCOME

Speculators hope that prices will move to their advantage. Their presence in the market keeps it active and provides liquidity, giving hedgers a market in which to hedge.

PRICE PREDICTION

How do speculators determine how prices are going to move?
No, they don't use crystal balls.
See Chapter 8 on Fundamental and Technical Analysis.

Speculators have no intention of making or taking delivery of the commodity. They don't even have any connection with the production or use of the commodity. Speculators enter the market anticipating that prices are going to change. In doing so, they take futures positions with the intention of making a profit.

The objective of the speculator is to make a profit. But the marketplace is improved by permitting public participation. The benefits of speculation are price discovery and liquidity. A good example of price discovery is an online auction site. The more people who will bid (or stop bidding) on an item, the greater the likelihood that that item (a commodity) will sell for its true price — where supply and demand have come together.

Leverage Can Work For or Against a Speculator

As you recall from Chapter 2, futures trading can require a relatively small upfront investment (in the form of the performance bond) in the sense the amount required to enter a futures position is a fairly small percentage of the overall value of the contract being traded. Futures trading is thus highly leveraged, and can result in large profits or large losses compared to the initial investment needed.

In a short period of time, a speculator's performance bond account could be wiped out very easily in a fast-moving market. Another important point to consider is that a speculator is typically involved in a one-sided transaction. Whereas a hedger can absorb losses in the futures market by gains in the cash market, the speculator must be prepared to accept outright losses in the futures market. There's no cash market investment to help counter the loss.

Leverage Can Work For or Against a Hedger

Although hedgers absorb losses in the cash market by gains in the futures market (and vice versa), hedging does involve opportunity costs. For example, a farmer who short hedges a corn futures contract due to his worries of price risk may end up sacrificing some potential profits, depending on which way the price of corn moves. If the price goes up, the farmer will not have access to all the profit he might have had had he not hedged. That is because the gains in the cash market are limited due to the offsetting position he took in the futures markets.

QUICK QUIZ #2

1. Why do hedgers enter the futures market?
2. What role do speculators play in the futures market?
3. How do hedgers and speculators differ?



6

ARBITRAGE

Arbitrage

What Keeps Futures Prices in Line?

You know that buyers and sellers come together at futures exchanges and negotiate prices. But there's another activity going on, called "arbitrage," that further refines the process of "price discovery." Arbitrage can be defined as the simultaneous purchase and sale of equivalent commodities (either cash or futures) in different markets in order to profit from price discrepancies.

For example, gold trades all over the world in major financial centers such as New York, London, Hong Kong and Frankfurt. For reasons related to short-term supply and demand fluctuations, the price of gold in New York will rarely be the same as in London.

If gold is trading in New York at \$400/ounce and in London at \$405/ounce, **arbitrage traders**, or **arbitrageurs**, with access to prices in both markets via computer and telephone hook-ups, will see this discrepancy. They'll then buy gold in New York at \$400 and simultaneously sell it in London at \$405, making \$5/ounce profit by doing so. This transaction is virtually risk-free because the arbitrageurs are **simultaneously** buying and selling the same commodity. As this happens, prices tend to converge to a smaller difference — perhaps just 30¢ to 50¢.

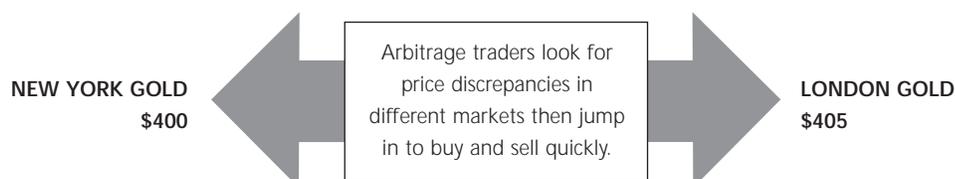
Significant arbitrage also occurs in the foreign currency markets — in Swiss francs, Japanese yen, the Euro, for example — as well as in metals such as silver, gold and platinum. Any time there are two geographically separate markets with similar instruments (i.e., cash yen vs. yen futures) or identical instruments (i.e., London and New York gold futures), there is potential for arbitrage.

An arbitrageur trades in different markets.

AN ARBITRAGE EXAMPLE

Arbitrageurs can watch the prices of a stock index and the futures contracts on that index. When prices are out of sync, the futures contract price can move higher or lower than the index itself. The arbitrageurs would simultaneously buy the "cheaper" and sell the "more expensive."

The price difference between the index and the futures may be only a fraction of a dollar. But huge numbers of contracts can be traded at the same time with significant results — if the timing is right.



Arbitrageurs bring balance into the market.

HAND SIGNALS

See the Appendix to find out how arbitrage traders communicate with each other on the trading floor.

What Role Does Arbitrage Play In The Market?

In addition to profit opportunities, arbitrage also acts to keep prices in line. Why? When arbitrageurs notice price discrepancies that can provide them with a quick, risk-free profit, they jump into action. The strong selling pressure that occurs when arbitrage is going on helps drive prices downward, and the corresponding strong buying pressure helps drive them upward. In a very short time, the two prices are driven toward each other until there is no profit left to be made by arbitraging. All this buying and selling is a major contribution to market liquidity.

In real life, the discrepancies we're talking about are temporary, typically lasting only minutes or even seconds. Arbitrageurs must act fast in order to profit from these discrepancies, because prices reach a point of **equilibrium** or "parity" very quickly.

Arbitrage traders play a very important role in futures trading. By acting on price discrepancies, they help bring balance and order back into the market.



QUICK QUIZ

Your broker calls you and informs you that a troy ounce of gold is trading in London for \$410 per ounce and in New York at \$408 per ounce.

1. Where would you buy the gold and where would you sell it?

2. Suppose there was a 1000-ounce limit on what you could buy and a 1000-ounce limit on what you could sell, and that the basis between London and New York gold is \$2.00/oz. What is the most profit that you could make?



7

SPREADING

Spreading

A Special Kind of Trade

A special type of futures trading is called spread trading. A **spread trade** consists of the simultaneous purchase and sale of two *different* but related futures contracts. Traders initiate spread trades when they think that the price difference between the two contracts will change to their benefit before the trade is offset.

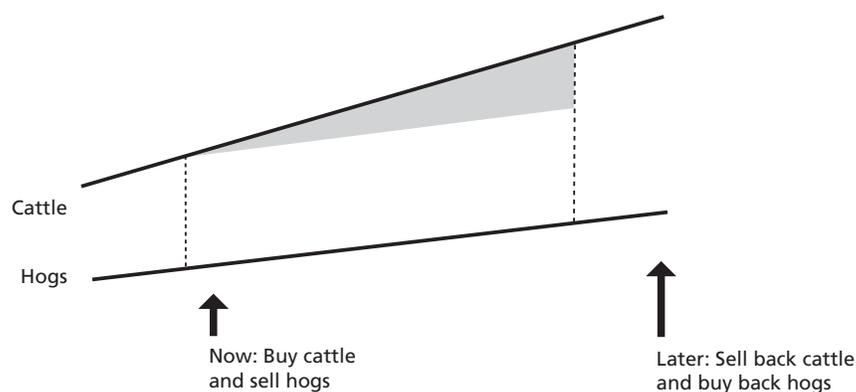
You can buy and sell two related futures contracts at the same time.

The Price Difference

The price difference between two futures contracts is called the **spread**. Suppose you expect the price difference between cattle and hogs to become wider by winter. You do not know (nor are you forecasting) whether cattle and/or hog prices will rise or fall. You are forecasting that if prices rise, then cattle prices will rise faster (greater) than hog prices. You are forecasting that if prices fall, the price of hogs will fall faster (greater) than cattle prices. Believe it or not your spread position is also forecasting that cattle prices may remain steady but hog prices will fall or that cattle prices will rise and hog prices remain unchanged. You do not care about absolute price levels but only price relationships.

You're really looking at the spread between the contracts.

When you get out of the spread, you either make more money selling back cattle than you lose buying back hogs or, conversely, you make more money buying back hogs than you lose selling back cattle. Your profit on the trade (illustrated below in a scenario of rising prices) is actually the change in spread between the two contracts (gray area).



A spread trade that's long October CME Live Cattle/short October CME Lean Hogs means that you've bought cattle and sold hogs.

Take a Look at the Numbers

Suppose that prices on the October CME Live Cattle and October CME Lean Hog contracts have been on the rise. Right now you think hogs are overpriced compared to cattle. If the uptrend continues, you anticipate that the rise in hogs will slow relative to the rise in cattle prices. But if the trend in livestock prices reverses, you anticipate that hog prices will fall further and faster relative to cattle prices. Therefore you put on a spread trade. You buy cattle and sell hogs. In trading terms, you're putting on a **long October CME Live Cattle/short October CME Lean Hogs** spread.

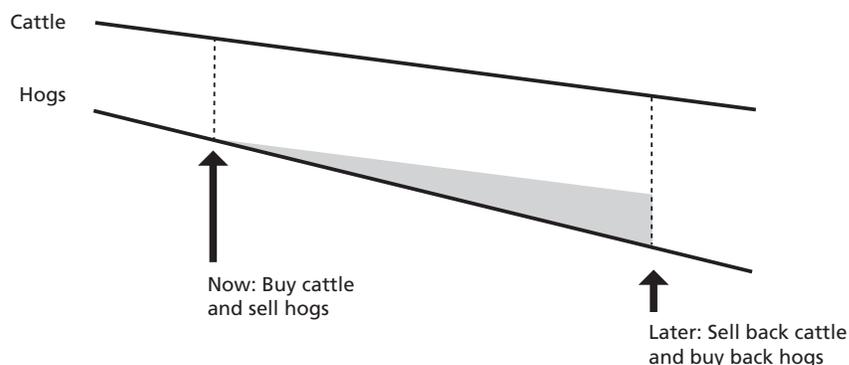
You initiate the spread trade when cattle are at 66¢/pound and hogs are at 48¢/pound. (The size of each contract is 40,000 pounds, quoted in cents per pound.) The spread between the two contracts is 18¢/pound. Then the markets move as you expected, with cattle prices rising more. At the appropriate time you get out of the spread. Cattle are now at 68.5¢ and hogs at 49.5¢, for a spread of 19¢/pound. Notice that the spread has widened by 1¢.

You gain \$1000 on the cattle side of the spread trade when you sell back the cattle contract (2.5¢/pound x 40,000 pounds). When you buy back the hog contract, you lose \$600 (1.5¢/pound x 40,000). Your profit is \$400, the difference between the two. It's also equal to the change in spread (1¢ x 40,000, or \$400). That's what we mean when we say the gain on the trade is really the change in spread.

	LONG OCTOBER CME LIVE CATTLE FUTURES	SHORT OCTOBER CME LEAN HOG FUTURES	SPREAD
Now	<i>Buy 1 October CME Live Cattle Contract .6600</i>	<i>Sell 1 October CME Lean Hog Contract .4800</i>	.1800
Later	<i>Sell 1 October CME Live Cattle Contract .6850</i>	<i>Buy 1 October CME Lean Hog Contract .4950</i>	.1900
Results	<i>Gain of .0250</i>	<i>Loss of .0150</i>	.0100

What If Prices Fall?

Spread trading isn't only used in rising markets. You might also expect the prices of cattle and hogs to fall, but not by the same amount. In that case, you could buy the contract expected to **fall less** (again, assume cattle) and sell the other (hogs). Let's say that prices fall and cattle prices do indeed fall less. Then you make more money buying back hogs than you lose selling back cattle. Again, the profit you make on the spread trade is the change in spread.



Here's a **long June CME Live Cattle/short June CME Lean Hog** spread trade initiated with cattle at 67¢, hogs at 52.5¢, and the spread at 14.5¢. You expect that both prices will fall but cattle will fall less, and that's what happens. Later, you offset the trade with cattle at 66¢ and hogs at 50¢, for a spread of 16¢. You lose \$400 on the cattle side of the trade (1¢ x 40,000) and gain \$1000 on the hog side (2.5¢ x 40,000). The \$600 profit is equal to the gain in the spread (1.5¢ x 40,000).

	LONG JUNE CME LIVE CATTLE FUTURES	SHORT JUNE CME LEAN HOG FUTURES	SPREAD
Now	Buy 1 June CME Live Cattle Contract .6700	Sell 1 June CME Lean Hog Contract .5250	.1450
Later	Sell 1 June CME Live Cattle Contract .6600	Buy 1 June CME Lean Hog Contract .5000	.1600
Results	Loss of .0100	Gain of .0250	.0150

QUICK QUIZ #1

Cattle prices are currently \$.70/pound and hog prices are \$.60/pound. Expecting the price difference between cattle and hogs to continue to grow wider, a spread trader puts on a long June CME Live Cattle/short, June CME Lean Hog spread trade (one contract each). Three months later when the change in the spread differential reaches \$.15 cents per pound, she liquidates the position.

1. When she initiated the spread trade, which contract did she believe would rise more?

2. How exactly did she liquidate the trade?

3. Assuming the change in spread is in her favor, what profit does the spread trader make on the trade?

Spread Principles

The trader tries to make more on the winning side than he/she loses on the losing side.

Obviously, the goal of spread trading is to make more on the winning side of the trade than is lost on the losing side. Taking a spread position is generally less risky than taking an outright position in the market. However, it is possible to lose on each side of a spread trade. The trader, of course, will try to avoid this situation.

NOW	LATER YOU PROFIT	LATER YOU LOSE
Prices are rising, and you expect cattle to gain more than hogs. You put on a long cattle/short hogs spread trade (buy cattle and sell hogs). The spread between the contracts is at 2¢.	The spread increases by 1¢ per pound. Cattle gained relative to hogs. You gain more when you sell back cattle than you lose when you buy back hogs. You gain \$400.	The spread decreases by 1¢ per pound. Cattle lost relative to hogs. You gain less when you sell back cattle than you lose when you buy back hogs. You lose \$400.

Choosing the Contracts to Spread

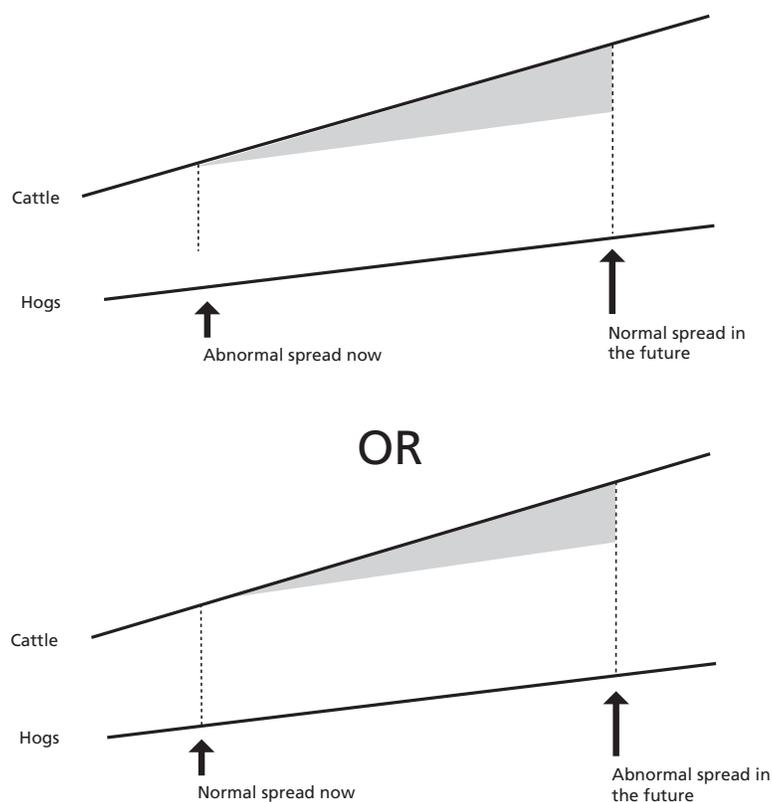
Spread traders must be careful about which two futures contracts they choose for the spread. Not any two will do. The contracts must be closely enough related so that their prices generally rise or fall together. For example, cattle and hog futures tend to follow that pattern. Spread traders also often work with two different contract months for the same commodity or the same month of a commodity, traded at different exchanges.

THE ABNORMAL SPREAD

The opportunity arises when the price difference between contracts is abnormal.

Know What's Typical — to Spot the Unusual

Second, traders need to be familiar with the typical patterns of the commodities to be able to put on a successful spread. That's because opportunities for profit occur when price patterns vary from what usually takes place. Thus, spread traders study external events, current market activity, and historical spread patterns between related futures contracts so they can recognize price abnormalities when they occur. When the prices of two contracts appear to be rising or falling together in an abnormal way, traders seize the opportunity to make a profit by initiating a spread trade between the contracts.



An opportunity can arise when the price difference is abnormal now and some development is expected to bring it back into line. Or, the price difference can be normal now but is expected to become abnormal in the future.

The Timing

A spread trade is held until the anticipated change occurs.

Third, let's talk about timing. A spread trade is initiated when expecting the price relationship to change and is liquidated after the change has occurred. A spread position may be held for only hours, for days or even weeks. Some traders get in and out fast, while others may hold a position longer. It all depends on the nature of the contracts, the timing of the change and the profit potential.

One other important point: Buying and selling the contracts to initiate the spread trade is done simultaneously. Selling back and buying back the contracts to liquidate the trade also are done simultaneously. You saw how the spread order is executed earlier in Chapter 3.

#2510	61
ACME	
83156	
BUY	SELL
10 Dec LC <u>+100</u>	10 Feb LC

PUTTING ON THE SPREAD

Buying December CME Live Cattle and selling February CME Live Cattle simultaneously

#2510	61
ACME	
83156	
BUY	SELL
10 Feb LC	10 Dec LC <u>+300</u>

LIQUIDATING THE SPREAD

Buying February CME Live Cattle and selling December CME Live Cattle simultaneously

BULL SPREADS

There's a general rule for some of the storable commodities such as corn and pork bellies. In a *bull market*, the near contract will gain ground over the distant months. The trader puts on a bull spread as shown here:

Long Near/Short Distant

Same Commodity, Different Delivery Months

When a spread trade involves different contract months of the same agricultural commodity or financial instrument, it's called an **interdelivery spread**. This is a widely used type of spread trade.

March CME Frozen Pork Bellies vs. July CME Frozen Pork Bellies, March CME Japanese yen vs. September CME Japanese yen, and June 2006 CME Eurodollars vs. December 2006 CME Eurodollars are all examples of interdelivery spreads. Each one involves the relationship of prices between a near contract month (the contract closer to expiration) and a more distant contract month (further from expiration) of the same commodity. When the normal relationship between the two contracts gets out of line, there's an opportunity for a spread trade.

If you expect the near contract to gain on the distant contract, you would buy the near and sell the distant when putting on the spread. On the other hand, if you expect the distant contract to gain on the near contract, you would sell the near and buy the distant to initiate the spread. The key is whether the near contract is too high or too low relative to the distant contract.

Related Commodities, Usually the Same Month

Another kind of spread, called an **intercommodity spread**, involves the simultaneous purchase of one futures contract and the sale of a different but related futures contract expiring during the same month. As we said before, related contracts are those whose prices generally rise and fall together. But what types of contracts are related in this way?



» **Contracts that compete with each other.** Cattle (beef) and hogs (pork) compete at the supermarket. A price rise in one will cause consumers to buy the other instead, driving its price up until both prices are back in line.



» **Contracts that can be affected by the same general event.** A drought can cut yields of corn and wheat, driving up the prices of both, but at different rates. Rising short-term interest rates will drive down the prices of both T-bill and CME Eurodollar futures. Economic events affecting the stock market can cause the prices of both CME S&P 500 Index futures and CME NASDAQ-100 Index futures to rise or fall, but at variable rates. There are many different kinds of intercommodity spreads.



» **Contracts where one commodity is physically derived from another.** For example, pork bellies come from hogs, soybean meal from soybeans, refined sugar from raw sugar, and gasoline from crude oil. A price rise in the source tends to stimulate a price rise in the product derived from that source.

The spread trader would act when the price relationship between related contracts like those mentioned previously is out of line. Here's an example of two markets shifting due to an abnormal price relationship. An increase in bank failures causes people to shift funds from banks to government debt instruments such as T-bills. The banks, in order to try to keep the funds, start offering higher interest rates for CDs. As a result, the spread between CDs and T-bills starts to change. Events such as this can generate big gains (or losses) in a popular spread called the TED spread in which the trader buys T-bills and sells Eurodollar CDs or vice versa.

BEAR SPREADS

The general rule for these storable commodities is different in a *bear market*. When prices are falling, the near contract will lose ground relative to the distant months. Then the trader would put on a bear spread:

Short Near/Long Distant

TYPES OF SPREADS

- » *Interdelivery*: Same commodity, different delivery months.
- » *Intercommodity*: Related commodities, usually the same month.
- » *Intermarket*: Same or related commodities at different exchanges.

Same or Related Commodities — Different Exchanges

The **intermarket spread** can involve buying and selling the same contract month of a commodity at two different exchanges, even in two different countries. Because wheat futures are traded at four different exchanges in the Midwest, there is an opportunity for trading on any changes in price differences between wheat contracts at the four exchanges.

Other examples include spreading between gold futures at Chicago, New York, or London exchanges. Cotton, copper, and sugar are traded in New York and London, too.



In the financial futures markets, intermarket spreads also can involve trading in related contracts at different exchanges. For example, you could take a spread position between two different stock indexes at different exchanges — the S&P 500 Index in Chicago against the NYSE Composite in New York.

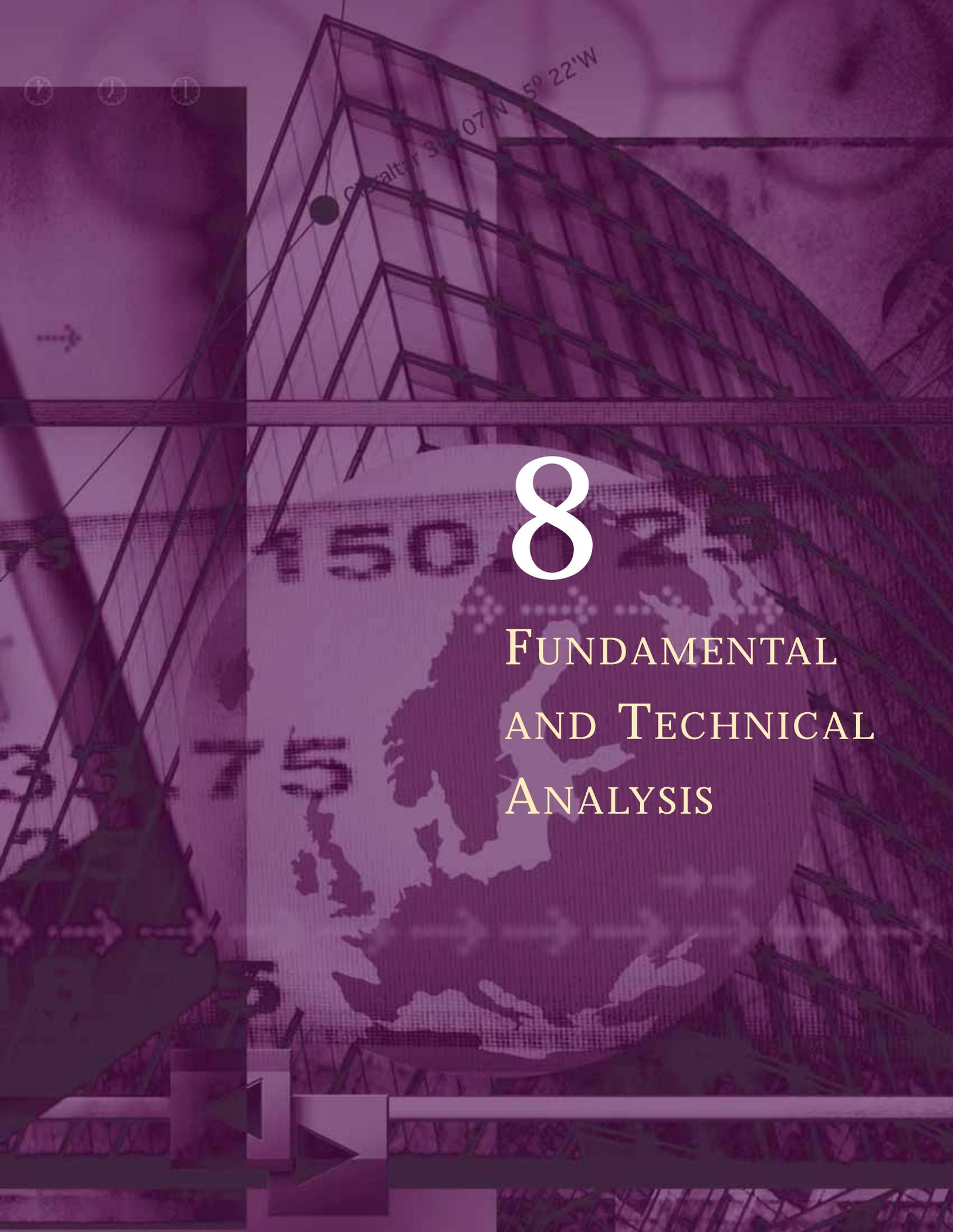
The financial intermarket spread is also called arbitrage. (Note: This is a somewhat different kind of arbitrage, not to be confused with "pure" or "classical" arbitrage as described in Chapter 6. In classical arbitrage, the transactions involve a known profit at no risk.)

Spread trading does involve risk, and in fact you can lose money on both sides (positions) of the spread. However, spread trading offers unique opportunities that differ considerably from outright long or short positions. The way to take advantage of perceived spread opportunities is to know the economic fundamentals of the market; this includes a seasonal and historic knowledge of price patterns. The trader must be able to recognize the potential for widening or narrowing changes between contracts and to make that spread change work in his/her favor.

QUICK QUIZ #2

What is the name used for each of the following spread trades?

1. New York copper vs. London copper
2. June CME Live Cattle vs. October CME Live Cattle
3. September soybeans vs. September soybean oil
4. CME S&P 500 Index vs. NYSE Composite Index (traded at the NYBOT)



8

FUNDAMENTAL
AND TECHNICAL
ANALYSIS

Fundamental and Technical Analysis

Price Prediction

Traders don't take positions in the futures market without an informed opinion about where the market appears to be headed. They won't go long without some kind of signal that prices are moving up, and they won't go short without a signal that prices are headed down. They don't operate blindly, and they don't throw darts at a dart board or hold séances to form an opinion about price movement (at least we hope not). What are these signals? Where do they come from, and how do traders use them to form educated opinions?

The signals come from two very different kinds of research — the analysis of external events that affect the markets (fundamental analysis) and the analysis of historical patterns of price movements (technical analysis). Each approach has its followers among hedgers and speculators. While some people are purists who advocate one type of analysis over the other, many others engage in both.

Fundamental Analysis

Fundamental analysis focuses on cause and effect — causes external to the trading markets that are likely to affect prices in the market. These factors may include the weather, current inventory levels, government policies, economic indicators, trade balances and even how traders are likely to react to certain events. Of course, fundamentalists have to know what to look at (the factors differ for each commodity) and how to interpret the information available.

Suppose, for example, that you take a fundamentalist approach to buying a house in a certain area. You would start by looking at factors affecting prices in that area. You might discover there's been too much new construction this season, and that there are also many older homes on the market because of cutbacks at a local corporation. You'd note that sales are sluggish compared to earlier years and that currently there are more houses available than buyers — supply is greater than demand. Your fundamental research tells you that homes in that area will be priced at value or possibly even under-priced, so you're likely to get a good deal if you act before the situation changes.

You have to have some idea where prices are heading.

TECHNICAL ANALYSIS

Price forecasting based on historical patterns and trends in price movements.

FUNDAMENTAL ANALYSIS

Price forecasting based on the analysis of supply and demand components that affect a particular market.

Fundamentalists believe that present conditions determine future prices.



Home Supply Up

- » Too much construction
- » Transfer brings older homes to market

Home Demand Down

- » Sluggish sales

Supply and Demand

Supply and demand affect the price of a commodity.

Because fundamentalists hope to predict which way prices will move, they're interested in identifying factors that are likely to affect supply and demand. When the supply of a commodity increases and demand decreases or stays the same, the price falls (just like those tomatoes we talked about earlier). When supply decreases and demand increases or stays the same, the price of that commodity rises. If the supply stays the same, changes in demand will cause prices to rise or fall.

SUPPLY	DEMAND	PRICE
Up	Down	Falls
Down	Same	Rises
Same	Up	Rises
Same	Down	Falls

Fundamentalists study how the markets respond to events, so they can take action before the general markets do.

The fundamentalist studies how events change the value of the commodity — whether it becomes more valuable or less as a result of an event — and whether prices can be expected to go up or down because of the event. Because all public information about a commodity ultimately will be reflected in its price, fundamentalists try to determine *how* and *when* these factors will affect the market price, so they can trade accordingly.

Fundamentalists also study the psychological effects of various kinds of information on traders. In other words, *how* and *when* do traders respond to a certain type of event or release of information? The fundamentalist analyzes this response and hopes to trade before the information is incorporated into the price. This lag time between an event and its resulting market response presents a trading opportunity.

Agricultural Fundamentals

Because each market has different supply and demand factors, fundamentalists typically only trade in markets they know. What needs to be known about the cattle market is quite different from what needs to be known about the currency market.

Fundamentalists trading a crop will watch last year's carryover stock and this year's projected production, usage and ending stock to predict the direction of price movement. The U.S. Department of Agriculture (USDA) releases this information in *Crop Production Reports* each month and includes price projections of its own. A fundamentalist takes nothing for granted and will fine-tune these projections with further analysis.

Fundamentalists will compare this year's statistics with those of previous years and try to identify how prices have moved in similar situations. They also will analyze external factors affecting the current supply and demand for the crop.

On the supply side for corn, for example, fundamentalists study factors affecting acreage and yield numbers. Low corn prices can encourage producers to plant other crops or participate in government production control programs, while high prices are an incentive to plant more. Weather during the growing season affects the number of bushels per acre produced.

On the demand side for corn, livestock numbers indicate a rising or falling demand for feed. Fundamentalists also take into account those international factors that can increase or decrease the demand for corn exports. Even the U.S. dollar exchange rate can affect how competitive U.S. corn is in the world market. Fundamentalists pay close attention as all of these events unfold.

Livestock Fundamentals

Livestock fundamentals are very different from crop fundamentals. There are no carryover stocks, because livestock are non-storable. Therefore, the current supply is the key livestock fundamental to watch.

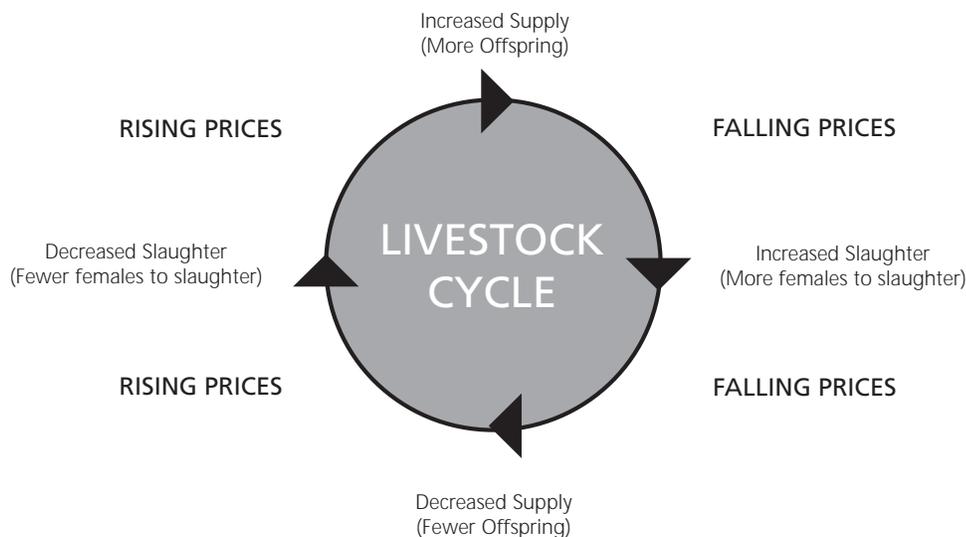
Let's take a look at cattle, for example. Basically, producers determine what the cattle supply will be based on the answer to one question: **How profitable is it to raise cattle?** The market price of cattle and the cost of feed affect this profitability. High profitability encourages producers to enlarge breeding programs, increasing supply and eventually causing prices to fall. Low profitability works the opposite way. Producers will cut back on breeding programs, decreasing the supply and eventually causing prices to rise. Because herd building and herd reduction take time, this is a longer cycle than the cycle for crops.

The price of each commodity is affected by different factors.

GOVERNMENT PUBLICATIONS

The U.S. Government releases several reports relating to crops, dairy products, livestock and lumber on a regular basis that fundamentalists use in their analyses, including:

- » U.S. Bureau of the Census
 - Housing Starts
 - Lumber Production and Mill Stocks
- » U.S. Department of Agriculture
 - Cattle
 - Cold Storage
 - Crop Production
 - Dairy Products
 - Hogs and Pigs
 - Livestock and Poultry Situation and Outlook
 - Livestock Slaughter
 - Milk Production
 - Outlook for U.S. Agricultural Exports
 - Rice Situation and Outlook
 - Wheat
- » U.S. Department of Commerce
 - Fats and Oils
 - Oilseed Crushings
- » USDA Foreign Agricultural Service
 - Grain and Feed
 - Market News
- » U.S. Forest Service
 - Production, Prices, Employment and Trade in Northwest Forest Industries



For livestock fundamentals, current supply is important.

Current supply numbers are available in the monthly *USDA Cattle on Feed Report*. Fundamentalists develop formulas to determine what effect an increase or decrease in supply over last year will have on prices. They also look closely at the potential effect of government programs on cattle supply. A milk reduction program, for example, could lead to increased supply because dairy farmers may have to slaughter their herds to comply with the program.

Hog producers control hog supply and react to profitability in the same way that cattle producers do. The quarterly *USDA Hogs and Pigs Report* (a sample follows) provides a primary source of statistics which fundamentalists can study to project supplies and formulate realistic hog prices.

Fundamentalists may develop econometric models to determine livestock demand factors. Inflation, consumer tastes, consumption patterns and population numbers all affect the demand for meats. Meat products are competitive, meaning that consumers will substitute one meat for another, depending on prices. For example, when beef prices are low, people tend to consume less pork, while high beef prices will increase the demand for pork.

A commodity that is highly demand-driven is lumber. Lumber fundamentalists use the monthly *Housing Starts Report* from the U.S. Department of Commerce as a key indicator of demand, as well as other information on general economic conditions affecting the building industry such as employment levels, mortgage interest rates and inflation.

SAMPLE HOGS AND PIGS REPORT (NUMBERS IN MILLION HEAD)

	Two Years Previous	One Year Previous	Current Year	Current Year as % of Two Years Previous	Current Year as % of One Year Previous
INVENTORY NUMBER SEPT 1					
All hogs and pigs	59,030	62,320	61,060	103%	98%
Kept for breeding	7,130	7,415	7,068	99%	95%
Market	51,900	54,905	53,992	104%	98%
MARKET HOGS AND PIGS BY WEIGHT GROUP					
Under 60 lb	19,675	20,790	20,390	104%	98%
60 - 119 lb	13,175	13,960	13,627	103%	98%
120 - 170 lb	10,545	11,170	11,080	105%	99%
180 lb and over	8,505	8,985	8,895	105%	99%
SOWS FARROWING					
December - February	2,808	2,885	2,886	103%	100%
March - May	3,220	3,389	3,260	101%	96%
December - May	6,028	6,274	6,146	102%	98%
June - August	2,972	3,107	3,006	101%	97%
September - November	2,982	2,995	2,999	101%	100%
June - November	5,954	6,102	6,005	101%	98%
PIG CROP					
December - February	22,871	23,368	23,860	104%	102%
March - May	26,135	27,976	27,120	104%	97%
December - May	49,006	51,344	50,980	104%	99%
June - August	24,041	25,547	25,000	104%	98
September - November	24,003	24,509	....	....	....
June - November	48,044	50,056	....	....	....
PIGS PER LITTER (number)					
December - February	8.15	8.10	8.27	101%	102%
March - May	8.12	8.26	8.32	102%	101%
December - May	8.13	8.18	8.29	102%	101%
June - August	8.09	8.22	8.32	103%	101%
September - November	8.05	8.18	....	....	....
June - November	8.07	8.20	....	....	....

Different variables are studied in the financial markets.

Financial Fundamentals

Fundamentalists in the financial futures markets — whether in foreign currencies, interest rate products, or index products — work with a complex array of supply and demand factors to predict price movement. The foundation for financial fundamental analysis is the study of the overall health of the economy that affects each of these markets.

THE OVERALL HEALTH OF THE ECONOMY IS A KEY FUNDAMENTAL FACTOR TO WATCH IN THE FINANCIAL FUTURES MARKETS.

ECONOMIC REPORTS

- » **Leading Indicator Index**, a report based on a number of economic factors that signal the state of the economy for the coming months.
- » **Consumer Price Index**, a report that traces the prices of goods and therefore is a measure of the inflation rate.
- » **Producer Price Index**, a report of the costs of resources used in manufacturing and the rate of inflation for raw materials, that provides an indication of future consumer prices.
- » **Gross Domestic Product**, a report of the value of goods and services produced in the U.S. over a specific time period, confirming the direction and magnitude of economic change.
- » **Employment Situation**, a report of unemployment figures, indicating rapid or slow economic growth.

Financial fundamentalists watch a number of economic indicators to determine changes in the state of the economy. Some examples are listed here, but there are many others.

The supply and demand for money determines **interest rates**, and changes in the economy's direction normally precede major interest rate turning points. Financial fundamentalists study economic indicators and prevailing economic policies to determine the direction of the economy. They use these indicators to forecast interest rates and, subsequently, the prices of interest rate products such as U.S. Treasury Bills. In general, the demand for money rises during economic expansion, causing interest rates to rise. Likewise, the demand for money falls during economic recession, causing interest rates to fall. Analysis of long-term versus short-term interest rates can also signal the direction of interest rate movement.

Fundamentalists trading in the **currency markets** study the U.S. economy as well as that of other countries. The price of one currency in relation to another shifts as supply and demand factors shift. For example, fundamentalists trading CME British pound futures consider the strength of the British economy, its fiscal and economic policies, budget deficits, balance of trade levels, inflation trends and general political situation — factors that are reflected in the value of the British pound.

Market psychology plays an important role in the financial markets, and it pays for the fundamentalist to be familiar with the market's response to economic indicators and news. Rumor, expectations and human behavior have a tremendous impact on price movement. The fundamentalist needs to be smart enough to tell when the market is oversold or overbought due to the excitability of the traders.

In each of the following cases, describe how the event would affect the supply or demand of the commodity given and then tell if the futures price is likely to rise or fall.

1. Lumber: An announcement is made that mortgage rates are likely to skyrocket in the next six months.

2. Corn: Indications are that a new fertilizer is increasing corn yield by an unexpected 40% this year.

3. Live hogs: The *USDA Hogs and Pigs Report* estimates the pig crop as considerably lower than last year's crop.

4. Japanese yen (quoted in U.S. dollars per yen): A Japanese technology advance has traders excited about Japan's economic growth.

QUICK QUIZ #1

SOPHISTICATED MODELS

Fundamentalists develop complex economic models to study supply and demand variables for each commodity they trade — whether it's a crop, livestock or interest rates. Using computers, they create mathematical relationships between these variables to figure out which way prices are heading.

TRADER REACTION

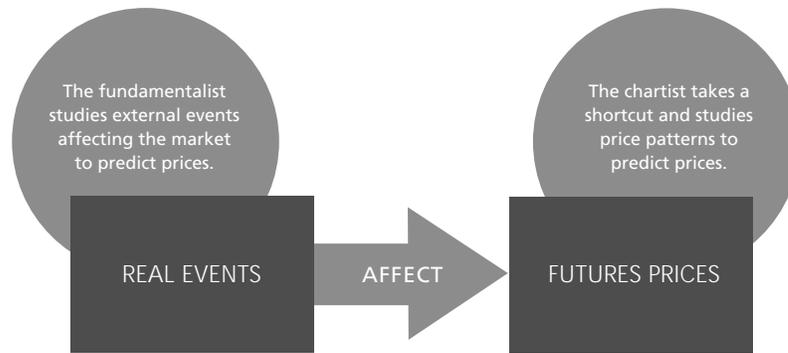
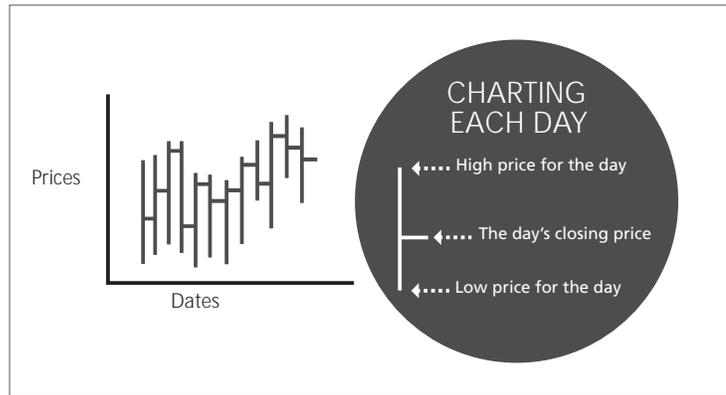
After the World Trade Center in New York was attacked by terrorists on 9/11/01, the markets tumbled rapidly due to investor fear and uncertainty — precisely what a fundamentalist would expect. Within weeks, however, the markets had gone back up to pre-attack levels as investor fear diminished. Early in 2002, though, corporate scandals such as Enron and WorldCom again negatively impacted the markets.

Technical Analysis

Technicians search for the trend.

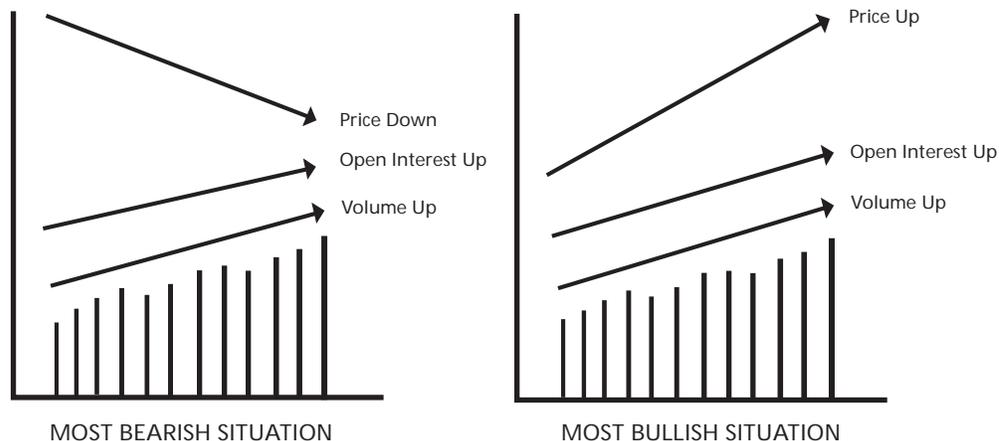
The most basic goal of technical analysis is to determine the direction and strength of the current trend in the market, and then identify when that trend is about to change. If the technician identifies the trend as bullish, the forecast is to remain Long and keep buying until the trend is deemed to be over.

WHAT BAR CHARTS LOOKS LIKE



Technical analysis focuses almost exclusively on past and current prices. The technician believes that all the economic supply/demand news and forecasts are built into the current prices. Compared to fundamentalists, technicians, in a sense, take a shortcut. While fundamentalists study external factors, technicians study the effect of those factors as shown in actual price trends and patterns.

There is a misconception that technical analysis means charting — using bar charts to find patterns. Actually, there are four sub-schools of technical analysis, including: Charting, Modeling, Cycles and Behavioral Studies.



Technicians look at more than just prices. They're also interested in patterns of volume and open interest. **Volume** is the actual number of trades that have taken place during a specified time limit (usually one day or one trading session). **Open interest** is the number of open positions (positions not yet offset in the marketplace) held over from one trading session to the next. These are important to chartists because they help identify the strength and direction of market trends.

Spotting trends is essential, because neither bullish nor bearish markets ever go straight up or straight down. They fall during the course of an upward trend, and go up in the midst of a downward trend. Suppose a chartist sees that on one day the market finishes on an upward note with high volume and open interest, but the next day it finishes down on low volume and similar or decreased open interest. The chartist would note that the market might be turning bullish, because sellers in the marketplace were not as keen to sell as buyers had been keen to buy on the previous day.

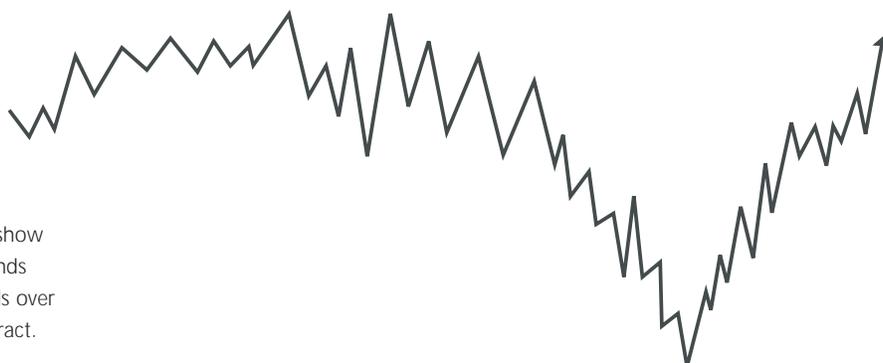
Some technical analysts believe in **cycle theory** — the cyclical repetition of price patterns over time. Cycle theory requires in-depth analysis of market movements, ranging from relative high- and low-point cycles which last for two or three years, integrated with those that last only for a few days. Cycle theory is better applied to agricultural commodities than financials because of the seasonal nature of agricultural products.

VOLUME AND OPEN INTEREST

Volume means the number of contracts traded in a day.

Open interest is the number of positions that haven't been offset.

Futures prices can show downtrends, uptrends and sideways trends over the life of the contract.



Like fundamental analysis, technical analysis often looks to complex computer programs for assistance in interpreting market behavior. A number of **trading systems**, usually geared to specific commodities, are now used by **system traders** to identify trading opportunities.

Common Patterns in Technical Analysis

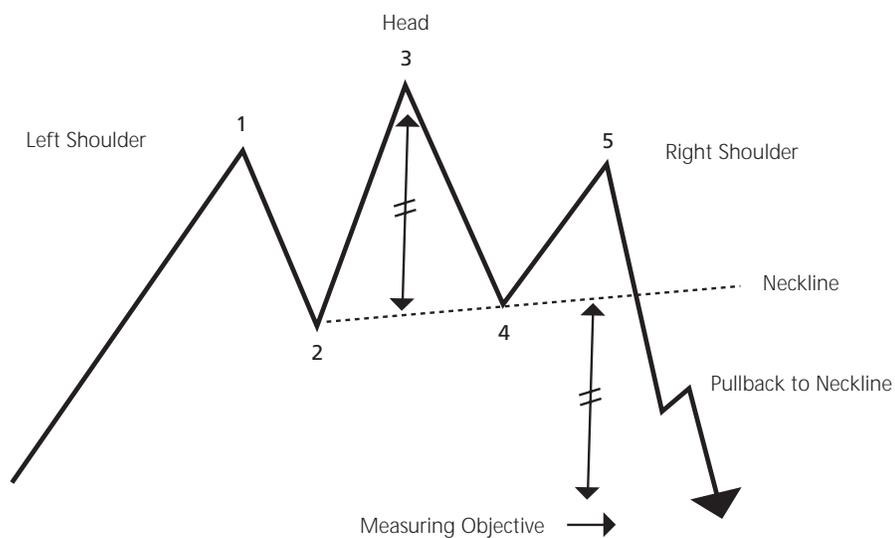
Now let's take a look at some of the common chart patterns in technical analysis, such as the head and shoulders and the symmetrical triangle. These patterns are complex, so it's enough for you at this stage of your futures education to have a general awareness of the kinds of patterns that exist. Their names are derived from their appearances, so don't be put off by them.

Head and Shoulders

This is a reversal pattern, meaning that it represents the end of a trend (either up or down). Let's look at an example of the **head and shoulders** top (ending of an uptrend). This formation takes at least five days to appear because at least five minor reversals of the daily trend are required to form the pattern.

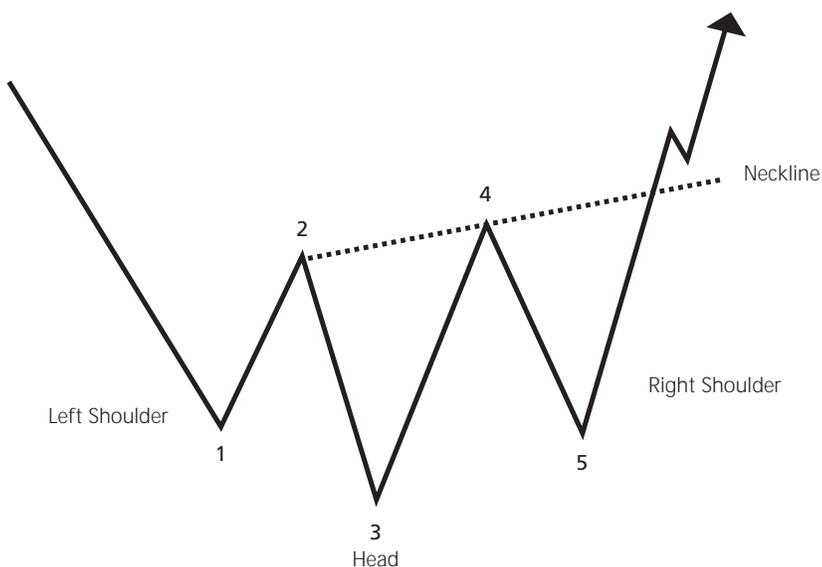
As you can see in the diagram, there are five reversals in the head and shoulders pattern, with the high point coming on the third reversal. The high point is the **head**; point one is the **left shoulder** and point five is the **right shoulder** (hence, the name). When a possible head and shoulders begins to form — usually around point three — the chartist carefully notes the location of the **neckline**, the most important line in the chart. The chartist draws a line from points two to four, and continues it forward in time on the chart. Once point five appears, chartists immediately offset any long positions they may be holding, and prepare to put on short positions as the price nears the neckline. A measuring line is drawn from point three to the neckline. When the neckline is broken after point five, another line is drawn, the same length as the first line. If the pattern lives up to expectations, the price will drop at least this distance, maybe more.

Head and Shoulders pattern



A head and shoulders can also indicate a bottoming pattern, called the **head and shoulders bottom**. At the bottom of a downtrend, the formation shows a period when the market changes from down to sideways and then from sideways to up. The neckline is drawn from points two and four. The trend reversal is considered complete when prices pass the neckline on the right.

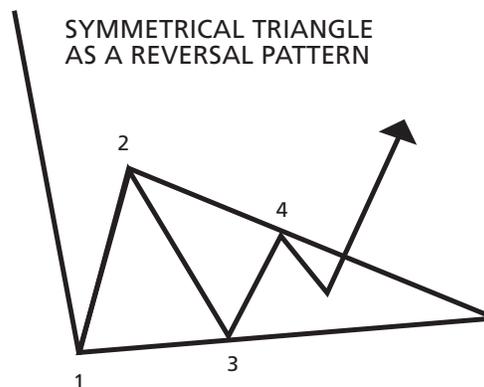
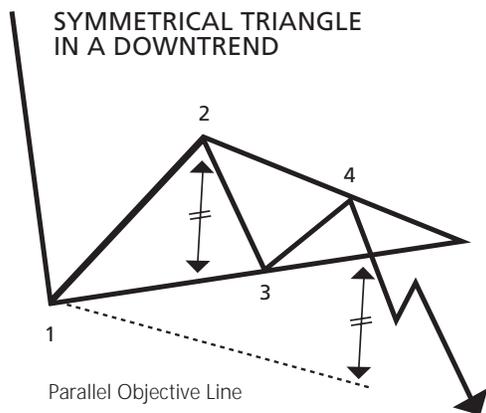
Head and Shoulders bottom pattern



Symmetrical Triangles

These patterns take a few days to develop.

Symmetrical triangles can be either reversal or continuation patterns. Usually they are continuations with about one in five being a reversal, which tends to form a major high or low in the contract's life span. Once again, this pattern takes four to five days to appear, sometimes longer.

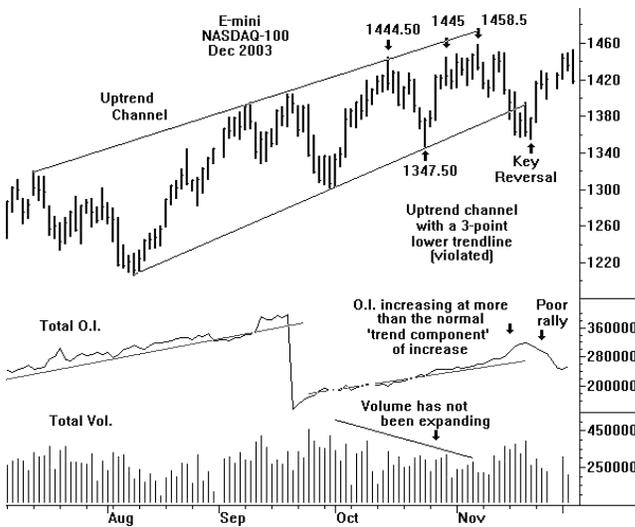
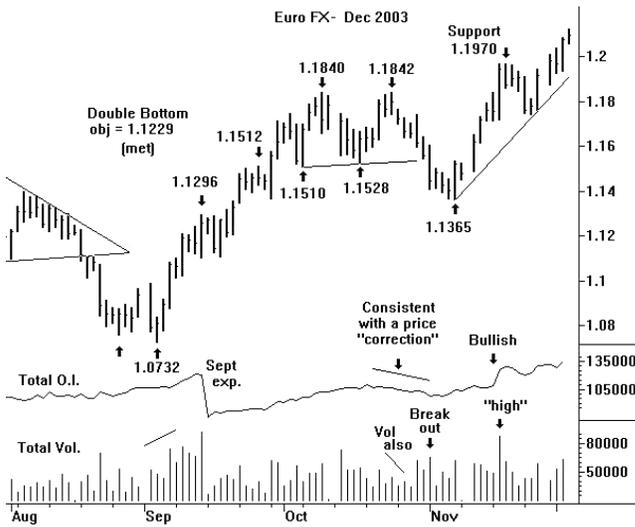


There are only four reversals in the symmetrical triangle pattern, and it is usually fair to say that the direction of the price chart when it moves out of the triangle is the direction in which the market will continue to move. If the pattern is continuation, the chartist will draw up a measuring line, as with the head and shoulders, but from point two to the line between points one and three. Another line is drawn from the "breakout" point, the same length as the original measuring line. This line usually, but not always, intersects with a line drawn from point one, parallel to the upper line of a triangle (in a downtrend continuation as previously illustrated).

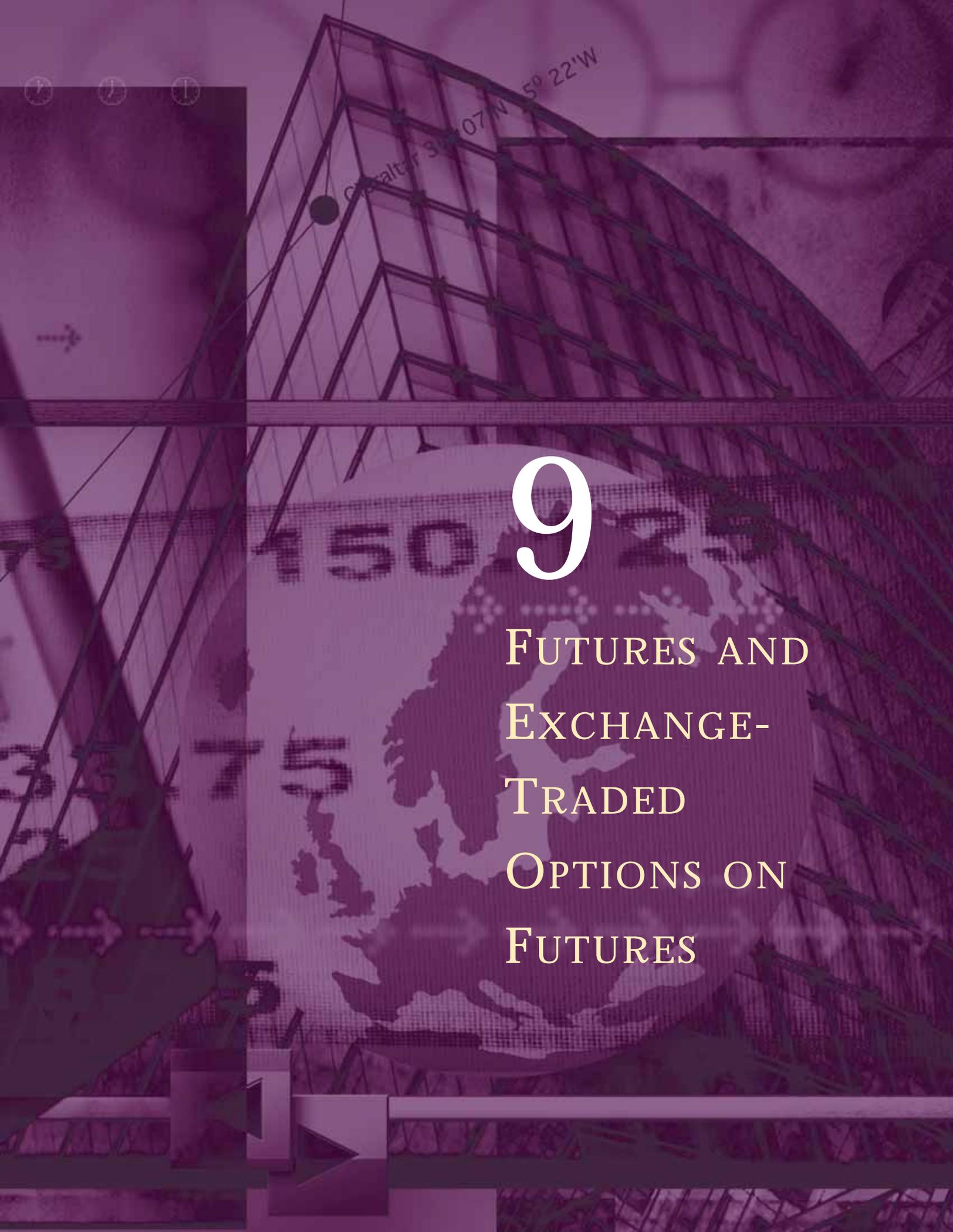
There are many books that go into far more detail if you want to learn more about technical analysis.

Volume and open interest are not so important in this pattern. Due to the uncertainty during the four-point reversal, volume usually gets lighter until the breakout, as does open interest. However, do not overestimate these factors in a symmetrical triangle.

However you look at charting, patterns or time cycles are not guarantees of the direction of market movement or how far it will move. The patterns have, however, acquired a self-fulfilling quality. When a head and shoulders pattern appears, for example, many traders will sell when the neckline is broken (on the downward) in anticipation of the fall in the price. If people are selling more eagerly than buying, prices fall, thereby fulfilling the anticipated price downtrend. So charting is something you should be aware of, even if you don't happen to believe in it.



(The preceding examples are from Ken Shaleen's *Technical Analysis and Charting*.)



9

FUTURES AND
EXCHANGE-
TRADED
OPTIONS ON
FUTURES

Futures and Exchange-Traded Options on Futures

Review of Futures

Futures contracts are legally binding agreements, made at a futures exchange, to buy or sell something at a specific time in the future — hence the name. That something could be an agricultural commodity such as live cattle, a financial commodity such as foreign currencies or Eurodollars, or an index such as the S&P 500. Each contract specifies the quantity (for example, 40,000 pounds of live cattle or 62,500 British pounds) of a commodity and the time of delivery (such as October CME Live Cattle or September CME British pound futures).

Options

To provide additional financial flexibility to the investment community, CME also offers trading on another type of exchange-traded derivative contract — **options on futures**. These contracts offer the buyer the right, **but not the obligation**, to buy or sell an underlying futures contract at a particular price.

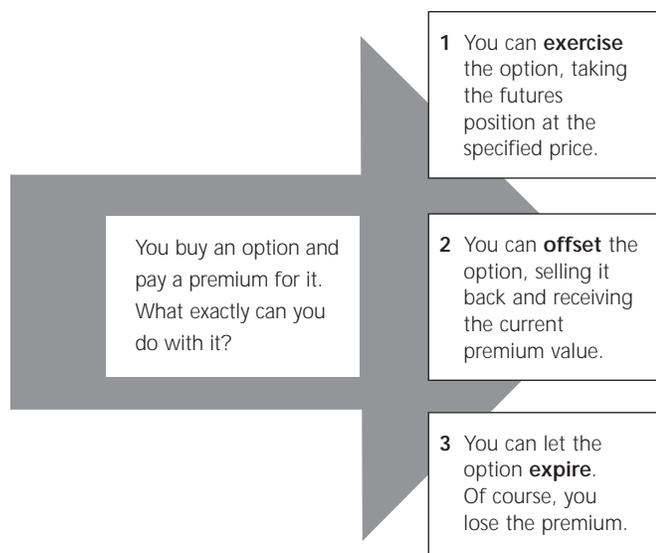
In futures trading, the risks can be higher than some speculators can bear. Losses can be large. With options, though, you can limit this risk substantially. If you didn't want to commit yourself to buying (long) a futures contract, or selling (short) a futures contract, you could buy an option on a futures contract.

Futures and options on futures are closely related.

There's more flexibility with options.

OPTIONS AT CME

More than 207 million options on futures contracts were traded at CME in 2005.



OPTIONS ON FUTURES

Each option specifies:

- » The right to sell or buy a futures contract
- » The commodity and the contract month of the futures contract
- » The price at which the futures contract will be bought or sold
- » The expiration date of the option

WHAT THEY ARE

Call option: The right to buy a futures contract at a specified price.

Put option: The right to sell a futures contract at a specified price.

You would then have the right, but not the obligation, to **exercise** the option and buy or sell the futures contract at a specified price if it seemed profitable. You could also simply **offset**, or sell the option back in the market, if it had increased in value. On the other hand, if the option became less valuable as the market moved against the position you've taken, you could simply forget it, let it **expire** and write off the money that you paid for it. This concept is the same as paying the insurance premium on your car. If nothing goes wrong, you simply write off the money you spent on insurance.

Calls and Puts

An option to **buy** a futures contract is known as a **call option**. People who buy calls are forecasting that the price of the underlying futures is going to go up, so they can buy low and sell high. An option to **sell** a futures contract is known as a **put option**. People buying puts are betting that the price of the underlying futures is going to go down, enabling them to sell high and buy low. Of course, if the market moves against their position, option holders can let the options expire.

Now here's where it can get confusing. You can be an option buyer who **buys** a put or a call. Or you can be an option seller (also called the option **writer**) who **sells** a put or a call. In other words, you can buy the right to buy or sell the underlying futures contract or you can sell the right to buy or sell the underlying futures contract. The table below helps you sort it out.

	CALL OPTIONS	PUT OPTIONS
Option Buyer	Buys the right to buy the underlying futures contract at the specified price.	Buys the right to sell the underlying futures contract at the specified price.
Option Seller (also called the Option Writer, or Option Grantor)	Has the obligation to assume a short position in the underlying futures contract at the specified price if the Option Buyer chooses to exercise the Call.	Has the obligation to assume a long position in the underlying futures contract at the specified price if the Option Buyer chooses to exercise the Put.

Premium

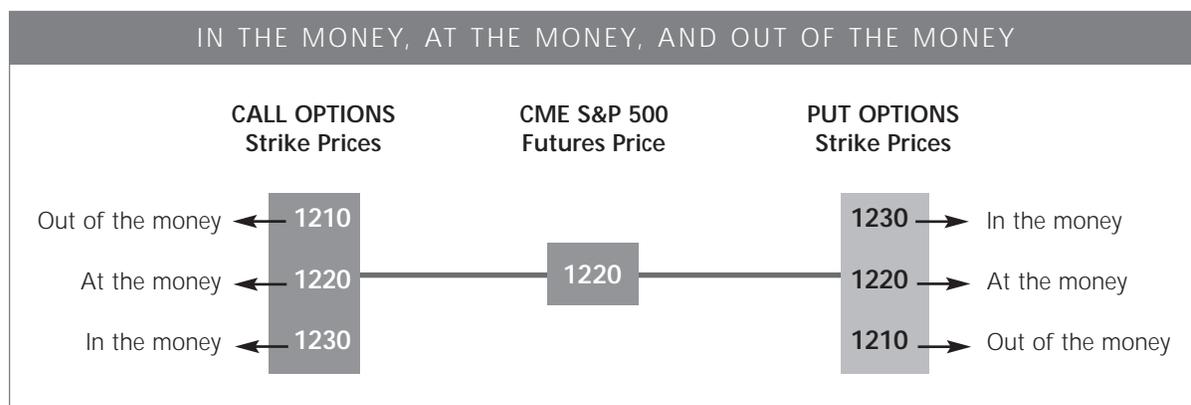
The premium is the cost of an option, the price the buyer pays to the seller in exchange for the option. This premium rises and falls as the traders make their bids and offers. The option buyer has no risk beyond the payment of the premium. The buyer's maximum dollar risk is therefore limited to the amount of the premium plus the commission paid to the brokerage firm. (The option seller's risks are different and considerably larger.)

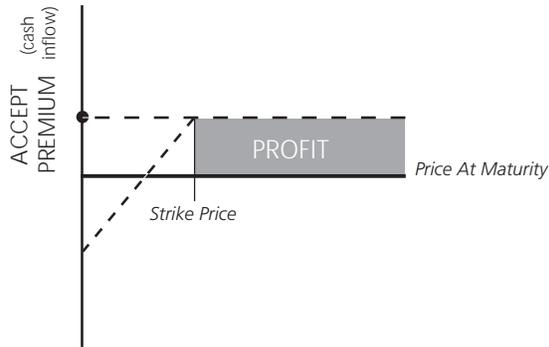
Strike Price

An option's strike price (also called the exercise price) is the price at which you go Long (in the case of a Call) or go Short (in the case of a Put) the underlying futures contract. For example, the buyer of a CME Swiss franc **June 71 call option** has the right to buy (or go Long) an underlying June CME Swiss franc futures contract at 71¢/SF anytime on or before the option's expiration date. The holder of an **October CME Live Cattle 69 put option** has the right to sell (go Short) an October CME Live Cattle futures contract at 69¢/pound on or before the expiration of the option.

The strike price tells at what price you can buy or sell the underlying contract.

Several puts or calls at different strike prices will be available for a particular underlying futures contract. For example, there may be December CME S&P 500 put options at strike prices of 1210, 1220, 1230, and so (x \$250).

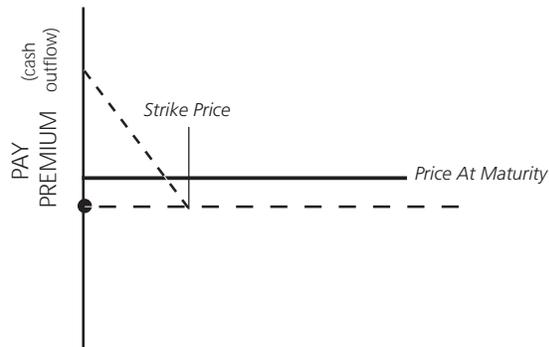




SELL PUT

Profit: Limited
Loss: Unlimited

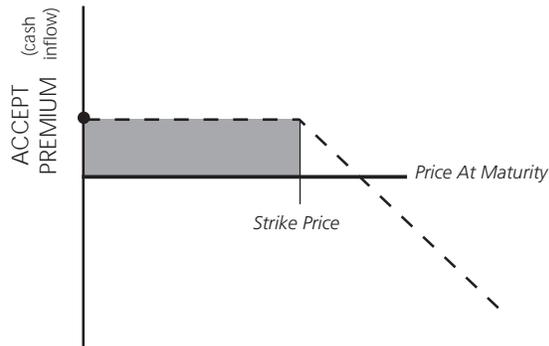
Seller: Guaranteed premium regardless of price movement. Must deliver if option exercised (if futures price is less than strike price).



BUY PUT

Profit: Limited
Loss: Unlimited

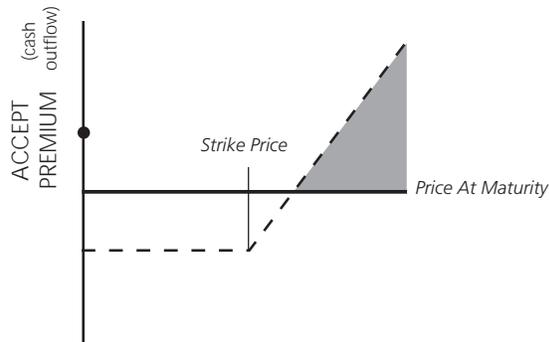
Buyer: Guaranteed loss of premium. Profit depends of whether strike price exceeds futures price and by how much.



SELL CALL

Profit: Limited
Loss: Unlimited

Seller: Guaranteed premium regardless of price movement. Must deliver if option is exercised (if futures price exceeds strike price).



BUY CALL

Profit: Limited
Loss: Unlimited

Buyer: Guaranteed loss of premium. Profit depends on whether futures price exceeds strike price and by how much.

Expiration

The expiration date of an option is the last day the option can be exercised or offset. Options have various expiration months, such as a **June** CME Swiss franc call or **September** CME Japanese yen put.

You can exercise your option to take the futures position.

Exercise

As a call option buyer, you may exchange your option to buy a futures contract by a process known as exercise. If you exercise your call option, you will receive a long futures position at the strike price of the option. Likewise, if you exercise a put option, you will receive a short futures position at the strike price of the option.

A June CME Swiss franc 82 call could be exercised into a long June CME Swiss franc futures contract at a price of 82 (\$.82 per franc), no matter what the current futures price may be. If you exercise a put option, you will be selling or going short the underlying futures at the option's strike price. A CME Live Cattle June 70 put, if exercised, will result in a short futures position at 70¢/pound, no matter what the futures price is.

	FUTURES	CALL OPTION ACTIVITY
June 1	October CME Lean Hogs are trading at 45¢/lb.	You buy an Oct CME Lean Hogs 45 call option and pay a premium. You hope prices will rise.
August 1	October CME Lean Hogs are trading at 49¢/lb	<p>You could exercise the call (buy a futures contract at 45¢). Then you can sell the contract back at 49¢ at a gain of 4¢/pound. Your total profit is the futures gain minus the premium you paid.</p> <p>You could offset the call (sell back the call), which is now in the money. Your overall gain would be the higher premium received for the call minus the premium you paid originally.</p>
October 1	October CME Lean Hogs are trading at 43¢/lb.	When hog prices fall, your call option is out-of-the-money. So if you've held it this long, you can let it expire (do nothing). But you'll lose the premium you paid for the call.

*You can sell
back the option.*

Offset

Rather than exercise, you may offset your long option position by selling it in the market, in the hope of making a profit. Remember that if you have bought a call option, you must sell a call option to offset. If you have bought a put option, you must then sell a put option to offset. You also may offset your option to limit losses on an unprofitable trade. For example, if you bought an option at a certain price and you see that it is losing value, you can sell the option back into the market in the hope of limiting your loss.

Time Decay

While some financial instruments can be held for many years or even indefinitely, options have a finite life span, usually no longer than nine months. Thus, if the underlying futures contract does not move as expected, the option holder will suffer because he has time working against him. Options are a wasting asset. That is, they will eventually be worth nothing by expiration if the futures contract fails to advance (in the case of call options) or decline (in the case of put options).

QUICK QUIZ #1

Multiple Choice

1. The cost of an option is referred to as its:
 - a) Premium
 - b) Strike price
 - c) Futures price
2. As a buyer of a call or put option, you are exposed to:
 - a) Unlimited risk
 - b) Risk to the extent of the premium paid
 - c) Financial ruin
3. Call and put options on futures usually have life spans of:
 - a) 30 years
 - b) An unlimited period
 - c) Two years
 - d) Nine months or less
4. The option seller:
 - a) Can exercise if he/she wants
 - b) Can offset in the market
 - c) Can wait for years for the option to move favorably
5. Options generally expire:
 - a) Weekly
 - b) Every year
 - c) Monthly

True or False

6. _____ Your call option has some value if the futures price is below the strike price at expiration.

10

FOLLOWING
FUTURES AND
OPTIONS PRICES

Following Futures and Options Prices

Futures Prices

In addition to other media, futures prices are reported daily in major newspapers such as *The Wall Street Journal*, which contains futures price and volume quotes from the previous trading session. Contracts are grouped into like commodities such as: grain and oilseed futures; livestock futures; food and fiber futures; metal futures; petroleum futures; interest rate futures; currency futures; index futures. In this chapter you will learn how to decipher these listings.

*Prices are
published for
every trading
session.*

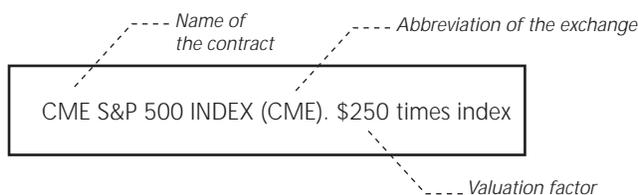
THE WALL STREET JOURNAL				INDEX FUTURES		FRIDAY, MAY 6, 2005	
S&P 500 INDEX (CME) — \$250 x index							
June	122880	122940	121880	122040	– 910	163280	107050 610,005
Sept	122400	122750	121750	121920	– 910	151490	107200 21065
Est vol 58,762; vol Wed 62,486; open int 634,549, +692							
Idx pri: Hi 1229.62; Lo 1219.72; Close 920.27, – 9.35.							
Mini S&P 500 (CME) — \$50 x index							
June	122900	122925	121825	122050	– 900	123950	108725 696,269
Vol Thu 650,957; open int 700, 739, +10,300.							
NASDAQ 100 (CME) —\$100 x index							
June	113850	113950	111700	111800	– 2150	116400	81850 79,909
Sept	.....	.....	.....	112100	– 2150	115650	95250 1,643
Est vol 15,328; vol Wed 15,513; open int 81,554, +758							
Idx pri: Hi 1132.28; Lo 1116.67; Close 1118.76, –17.09							
Mini NASDAQ 100 (CME) — \$20 x index							
June	1138.0	1139.0	1117.5	1118.0	– 21.5	1163.5	941.5 241,853
Vol Thu 264,190; open int 242,266, +1,725.							

Following Futures and Options Prices

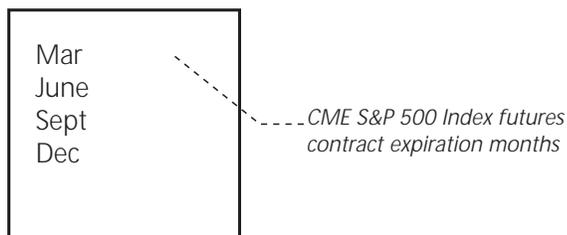
TRADING HOURS

During a normal business week, CME E-mini stock index futures are open 23 hours a day; and currency and interest rate contracts are open 23 hours!

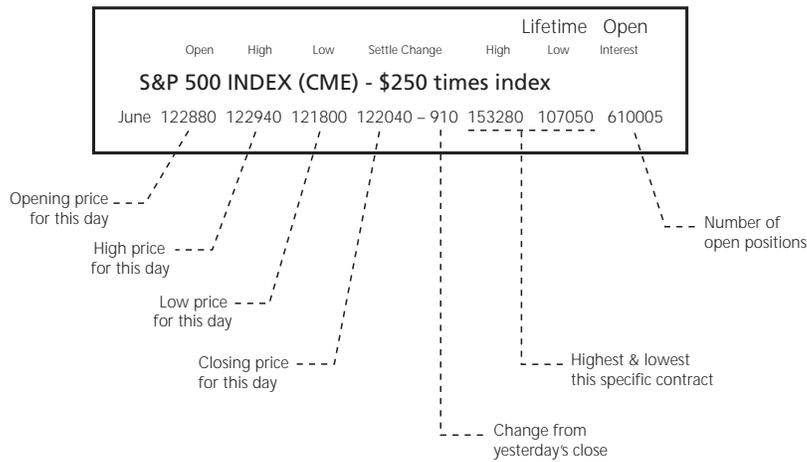
In parentheses, and adjacent to the name of the contract, is the **abbreviation of the exchange** on which the contract is traded. In our example, the first contract listed — the CME S&P 500 Stock Index contract — is traded at CME. Just to the right of the exchange abbreviation is the valuation factor (also called the multiplier). With the CME S&P 500 Index, the value of a futures contract is \$250 times the present value of the CME S&P 500 futures index (which, as you may know, changes almost constantly.) The prices quoted are listed as dollars times the index number.



Each contract maturity or **delivery month** is listed downward along the left margin. In this case, the March contract is listed first because it is the most nearby contract traded. As we go down the list, we are going out to future months, eventually ending in June 2003.



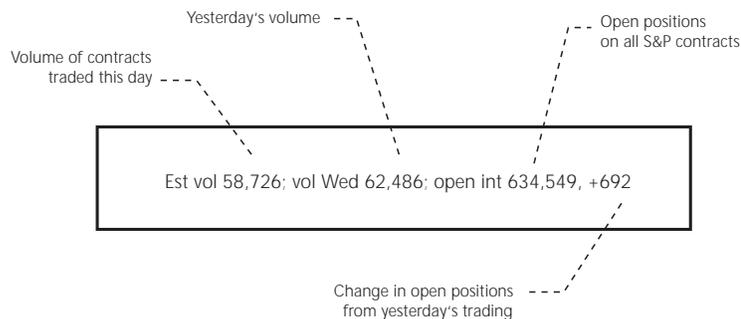
Now let's look more closely at the June 2005 contract (the first one in the list). The first quote of 122880 (1228.80) is the **Open** or opening price for this day's trading. Moving to the right, the next quote is the **High** price of the day for the June CME S&P 500 contract, 122940 (1229.40). Next to the high is the **Low** price of the day for this contract, 1218.00. Continuing to the right, we next see the **Settle** price of 122040 (1220.40), which is the closing price for this day's trading session. Just next to the settle is the net **Change** in the closing price from the prior day's trading session. In this case, the net change is – 910.



The next two columns indicate the **Life-of-Contract High** and **Life-of-Contract Low** for this specific contract. This indicates a high of 1532.80 and a low of 1077.50 for the June CME S&P 500 contract since its inception in early 2003. The last item is **Open Interest**, which indicates the number of open positions in that contract. In this case, there are 610,005 open positions, meaning there are that many contracts still long and short in the market. Remember, when two people trade one contract (one trader buying from a trader selling), that represents one open interest.

At the bottom of each set of contract quotes (under the quotes for that particular contract) is another line that provides information detailing:

- » The estimated volume of contracts trading that day (58,726).
- » The volume traded in the previous session (Wed. 62,486).
- » Total open interest for all contracts in this particular commodity (634,549).
- » The net change in open interest (+692) from the previous trading day.



Following Futures and Options Prices

FUTURE OPTIONS							
S&P 500 STOCK INDEX (CME)				\$250 times premium			
Strike Price	Calls — Settle			Puts—Settle			
	May	Jun	Jly	May	Jun	Jly	
1210	17.60	30.80	37.40	7.20	20.40	22.80	Previous day's closing price (premium) for a July 2005 CME S&P 500 futures put
1215	14.40	27.80	...	9.00	22.40	...	
1220	11.50	24.90	31.70	11.10	24.50	32.50	
1225	9.00	22.30	29.00	13.60	26.90	34.80	
1230	6.90	19.80	26.50	16.50	29.40	...	
1235	5.10	17.50	...	19.70	...	...

Est. vol.33,821, Wed 7,467 calls, 14,748 puts
Open int Wed 99,950 calls, 196,574 puts

Options

You also can find price information on options on futures in *The Wall Street Journal* (as in our example below) and in other places, such as the CME Web site (www.cme.com). In the table below, you can find out the previous day's closing prices for all available options on CME S&P 500 futures, as well as strike prices and expiration months.

CME S&P 500 STOCK INDEX (CME)			
\$250 times premium			
Strike Price	Calls — Settle		
	May	Jun	Jly
1210	17.60	30.80	37.40
1215	14.40	27.80	...
1220	11.50	24.90	31.70
1225	9.00	22.30	29.00
1230	6.90	19.80	26.50
1235	5.10	17.50	...

Here, we've highlighted the CME S&P 500 June 1215 call option. On Thursday, May 5, 2005 this call option settled or closed at 27.80. The right to go long or buy an CME S&P 500 futures contract at a price of 1215 between now and April would cost the option buyer a premium of 27.80 per contract. That would be \$250 times 27.80 for the premium ($\$250 \times 27.80 = \$6,950.00$).

The option buyer pays the \$6,950.00 premium to the option seller (plus a commission to the brokerage firm). The option seller receives the \$6,950.00 premium (but must also pay a commission to the brokerage firm).

If the futures advance to 1230, the option would increase in value because the holder of the option has the right to buy at a lower price (1215) than is currently trading. (Notice that a June 1230 call option is worth less than a June 1215 call option because the right to buy the 1230 call is worth less than the right to buy lower at 1215.) Only if the June CME S&P 500 futures price rises above 1215 will the 1215 call option gather any value. If not, then by expiration, the 1215 call option will waste away and eventually expire worthless. However, the most you could lose would be the premium paid.

**CME S&P 500 STOCK INDEX (CME)
\$250 times premium**

Strike Price	Puts—Settle		
	May	Jun	Jly
1210	7.2	20.4	22.8
1215	9.0	22.4	...
1220	11.1	24.5	32.5
1225	13.6	26.9	34.8
1230	16.5	29.4	...
1235	19.7	...	...

Example of a Put

Using data from the chart above, let's take a look at how it would work if we decided to buy the June 1225 put option. On Thursday, May 5, 2005, this put option settled or closed at 26.90. The right to sell a CME S&P 500 futures contract at a price of 1225 between now and June would cost the option buyer a premium of 26.90 per contract. That would be \$250 times 26.90 for the premium ($\$250 \times 26.90 = \$6,725.00$).

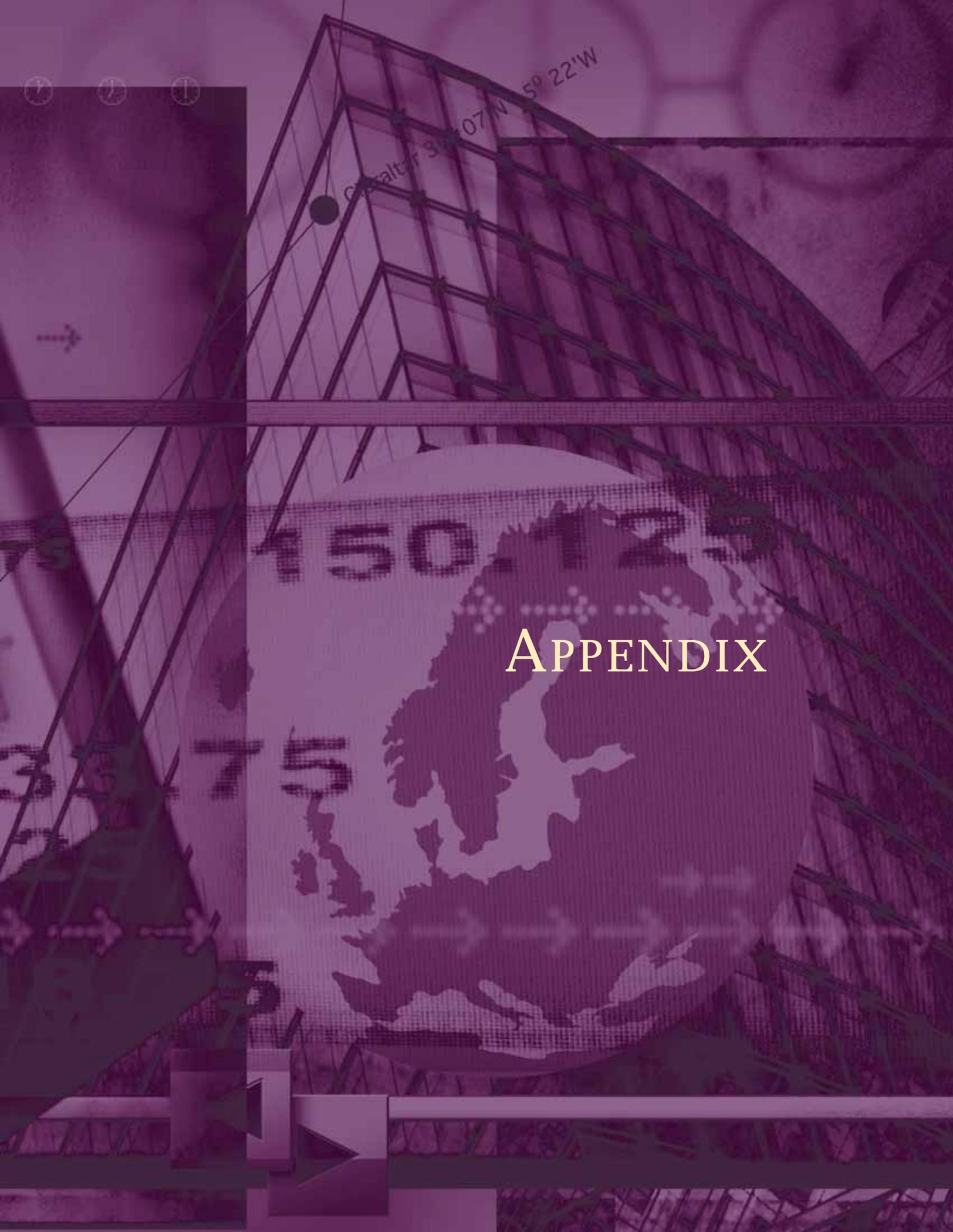
As the buyer of the put option, you would pay the \$6,725.00 premium to the seller of the option (plus a commission to the brokerage firm). The seller of that option receives the \$6,725.00 premium (but must also pay a commission to the brokerage firm).

If the futures decline to 1215, the put option would increase in value because the holder of the option has the right to sell at a higher price — 1225. (Notice that a June 1215 put option is worth less than a June 1225 put option because the right to sell at 1215 isn't as profitable than selling at 1225.)

QUICK QUIZ #1

Use the options information in this chapter for the following questions.

1. A May 1225 CME S&P 500 call option would cost how much to the buyer?
 - a) \$2,250
 - b) \$22,500
 - c) \$4,500
2. A June 1210 CME S&P 500 put option would cost how much to the buyer?
 - a) \$5,100
 - b) \$51,000
 - c) \$20,400
3. A July 1220 CME S&P 500 call option will be more expensive than a May 1235 call option because:
 - a) There is much more time for the futures contract to perform.
 - b) S&Ps are generally lower in January.
 - c) March is fire sale month in CME S&P 500 options and futures.



APPENDIX

Glossary

This glossary was compiled by CME from a number of sources. The definitions are not intended to state or suggest the correct legal significance of any word or phrase. The sole purpose of this compilation is to foster a better understanding of futures and options on futures.

Abandon — To elect not to exercise an option contract.

The holder of a long option position has the right to exercise or abandon an option contract. Same as “expire.”

American-style option — Type of option contract that can be exercised at the buyer’s discretion on any trading day up to and including the expiration date. This differs from a European style option, which may only be exercised on its expiration date.

Ask — Also called “offer.” Indicates a willingness to sell a futures or options on futures contract at a given price.

Associated Person (AP) — An individual, commonly called a commodity broker, associated with, and soliciting customers and orders for, a futures commission merchant (FCM) or introducing broker (IB). The AP must pass a Series 3 examination, be licensed by the Commodity Futures Trading Commission, and be a member of the National Futures Association.

At-the-money — An option with a strike price equal to the underlying futures price.

Back months — The futures or options on futures months being traded that are furthest from expiration. Also called deferred or distant months.

Bar chart — A graph of prices, volume and open interest for a specified time period used by the chartist to forecast market trends. For example, a daily bar chart plots each trading session’s high, low and settlement prices.

Basis — The difference between the spot or cash price and the futures price of the same or a related commodity. Basis is usually computed to the near future, and may represent different time periods, product forms, qualities and locations. The local cash market price minus the price of the nearby futures contract.

Basis point — One-hundredth (.01) of a full index point.

Bear — One who believes prices will move lower.

Bear market — A market in which prices are declining.

Bearish key reversal — In technical analysis, a chart formation that signals a reversal of the current upward trend and the possible beginning of a downtrend.

Bid — An attempt to buy a specific quantity of a commodity at a stated price. (Opposite of an offer.) The price that the market participants are willing to pay.

Bid/ask spread — The price difference between the bid and offer price.

Broker — A person paid a fee or commission for executing the buy or sell orders of a customer. In futures trading, the term may refer to one of several entities:

1. **Floor broker** - a person who actually executes the trade in the trading pit or electronically;
2. **Account executive (AE), Associated Person (AP), or Registered Commodity representative (RCR)** - the person who deals with customers in Futures Commission Merchant (FCM) offices; and
3. **FCM** - A firm or person engaged in executing orders to buy or sell futures contracts for customers.

A full-service broker offers market information and advice to assist the customer in trading. A discount broker simply executes orders for customers.

Brokerage — The fee paid to a floor broker for executing orders. May be a flat amount or a percentage; also referred to as a commission.

Brokerage house — A firm that handles orders to buy and sell futures and options contracts for customers.

Bullish key reversal — In technical analysis, a chart formation that signals a reversal of the current downward trend and the possible beginning of an uptrend.

Buy on close — To buy at the end of a trading session at a price within the closing range.

Buy on opening — To buy at the beginning of a trading session at a price within the opening range.

Call — An option to buy a commodity, security or futures contract at a specified price any time between now and the expiration date of the option contract.

Call option — A contract between a buyer and seller in which the buyer pays a premium and acquires the right, but not the obligation, to purchase a specified futures contract at the strike price on or prior to expiration. The seller receives a premium and is obligated to deliver, or sell, the futures contract at the specified strike price should a buyer elect to exercise the option.

Cash commodity — The actual or physical commodity, as distinguished from a futures contract.

Cash settlement — Final disposition of open positions on the last trading day of a contract month. Occurs in markets in which there is no actual delivery.

CFTC — Acronym for the Commodity Futures Trading Commission as created by the Commodity Futures Trading Commission Act of 1974. This government agency currently regulates the nation's commodity futures industry.

Charting — The use of graphs and charts in the technical analysis of futures and options markets to plot trends of price movements, average movements of price, and volume and open interest.

Chartist — One who engages in technical analysis.

Clearing — The procedure through which CME Clearing becomes the buyer to each seller of a futures contract, and the seller to each buyer, and assumes responsibility for protecting buyers and sellers from financial loss by ensuring performance on each contract. This is effected through the clearing process, in which transactions are matched, confirming that both the buyer's and the seller's trade information are in agreement.

Clearing Firm (Clearing Member) — A firm approved to clear trades through CME Clearing. Class A clearing firms are approved to clear transactions for all commodities.

Clearing house — An agency, separate corporation or division of a futures exchange that is responsible for settling trading accounts, collecting and maintaining margin monies, regulating delivery and reporting trade data (i.e., CME Clearing is the clearing house for CME).

Clerk — A member's bona fide employee who has been registered by the exchange to work on the trading floor.

Close — The period at the end of the trading session officially designated by the exchange during which all transactions are considered "made at the close." Sometimes used to refer to the closing range.

Closing price — The last price of a contract at the end of a trading session.

Closing range — The high and low prices, or bids and offers recorded during the period designated by the exchange as the official close of trading in a given pit (the final 60 seconds of trading in currencies and 30 seconds in all other contracts).

CME Globex — CME's electronic trading platform.

CME Globex Terminal Operator — An individual who is authorized to enter orders through a CME Globex connection.

CME Globex Trader — Front-end trading application that connects a user either directly or via the Internet, to the CME's electronic trading platform.

CME-SGX Mutual Offset System (MOS) — In 1984, CME, in partnership with the Singapore Exchange (SGX), pioneered an innovative approach to futures trading known as the Mutual Offset System (MOS). Through the MOS, contracts opened on one exchange can be liquidated or held at the other. The CME-SGX link effectively extends the trading hours of both exchanges beyond their operating hours, allowing traders to better manage their overnight risk. This agreement, the first international futures trading link of its kind, is available for both Eurodollar and Euroyen futures.

Commission — For futures contracts, the one-time fee charged by a broker to cover the trades a client makes to open and close each position. It is payable when the client exits the position. Also called a round-turn. Commissions on options are usually half on initiation and paid half on liquidation.

Commodity — The underlying instrument upon which a futures contract is based.

Contract — An agreement to buy or sell an exchange specified amount of a particular commodity or financial instrument at a specified price. Also, a term of reference describing a unit of trading for a commodity future, as in "5 CME Lean Hog contracts."

The contract specifications detail the amount and grade of the product and the date on which the contract will mature and become deliverable if it is not liquidated, or offset, earlier.

Contract month/year — The month and year in which a given contract becomes deliverable if it is not liquidated or offset before the date specified for termination of trading of that contract month. Also called the delivery month.

Current delivery month — The delivery month that typically identifies the futures contracts that expire within that month.

Day order — An order that is placed for execution during only one trading session. If the order cannot be executed that day, it is automatically canceled. Order is good from ETH through RTH.

Day trading — Establishing and offsetting the same market position within the same day.

Default — Failure to perform on a contract as required by exchange rules, such as the failure to meet settlement variation, a performance bond call, or to make or take delivery.

Deferred — See Back months.

Delivery — The tender and receipt of the actual commodity, or of a delivery instrument covering the commodity, in settlement of a futures contract.

Delivery day — The calendar date on which a delivery transaction is to be completed.

Delivery month — See Contract month.

Delivery point — Those locations designated by the exchange at which actual commodities may be delivered in fulfillment of a futures contract.

Demand — The quantity of a commodity that buyers are willing to purchase in the market at a given price.

Derivative — An investment tool that is derived from an underlying instrument. An example would be an FX currency futures contract, which trades at CME.

Distant — See Back months.

Downtrend — A price trend characterized by a series of lower highs and lower lows.

Electronic information — The data made available to each CME member or clearing member through access to any Regulated Electronic Device, e.g., related database, software, programs, protocols, displays and manuals, including the selection, arrangement, and sequencing of the contents.

Electronic trading — Computerized system for placing orders, bid and offer posting, and trade execution. The CME Globex platform is an example of an electronic trading system.

Electronic trade poster (ETP) — The application for viewing electronic trades, as well as marking them for post-trade processing such as give-up, average pricing, or mutual offset. ETP displays prior day pit trades not marked for post-trade processing as well as current and prior day pit trades marked for give-up.

Elliot Wave theory — A version of technical analysis that studies price wave sequences.

Equity — Instrument traded on the cash market representing a share in the capital of a company. The net worth of a commodity account as determined by combining the ledger balance with an unrealized gain or loss in open positions as marked to the market.

Exercise — To invoke the right granted under the terms of an options contract to buy or sell the underlying futures contract. The option holder (long) is the one who exercises the option. Call holders exercise to buy the underlying future, while put holders exercise to sell the underlying future. The short option position is assigned exercise by the exchange by a process of random selection. CME Clearing removes the option and creates the futures positions on the firms' books on the day of exercise.

Exercise price — The price at which the holder (buyer) may purchase or sell the underlying futures contract upon the expiration of an option. Also called strike price.

Expiration date — The date on which the option will expire. Also, the last day of trading for a futures contract.

Floor broker — An individual who is registered with the CFTC to execute orders on the floor of an exchange for the account of another. He /she receives a fee for doing so by clearing members or their customers.

Floor trader — An individual who is registered with the CFTC to execute trades on the floor of an exchange for his own account (or for an account he controls). Also referred to as a local.

Foreign exchange (or FX) — An over-the-counter market where buyers and sellers conduct foreign exchange transactions. Also called foreign exchange market.

Forward contract — A private, cash-market agreement between a buyer and seller for the future delivery of a commodity at an agreed price. In contrast to futures contracts, forward contracts are not standardized and not transferable.

Fundamental analysis — The study of supply and demand information to aid in anticipating futures price trends.

Fundamentalist — One who engages in fundamental analysis.

Futures — The standardized contracts covering the purchase and sale of financial instruments or physical commodities for future delivery on a regulated commodity futures exchange.

Futures Commission Merchant (FCM) — An individual, association, partnership, corporation or trust registered with the CFTC that solicits or accepts orders for the execution of a commodity transaction on and pursuant to the rules of a futures contract market (and which can accept payment from or extend credit to customers).

Futures contract — An obligation to deliver or to receive a specified quantity and grade of a commodity during a designated month at the designated price. Each futures contract is standardized and specifies commodity, quality, quantity, delivery date and settlement.

GALAX-C — CME hand-held trading terminals.

Head and shoulders — A sideways price formation at the top or bottom of the market that indicates a major market reversal.

Hedge — The purchase or sale of a futures contract as a temporary substitute for a cash market transaction to be made at a later date. Usually involves simultaneous, opposite positions in the cash market and futures market.

Hedger — An individual or firm who uses the futures market to offset price risk when intending to sell or buy the actual commodity.

Holder — One who purchases an option (also called the buyer).

Independent Software Vendor (ISV) — A vendor who makes and sells software products that run on one or more computer hardware or operating system platforms. At CME, ISVs provide front-end applications certified by CME for trading on the CME Globex platform.

Index — An indicator that is representative of a whole market or market segment, usually computed by a sum product of a list of instruments' current prices and a list of weights assigned to these instruments. The index variations give trends of the market/market segment measured.

In the money — A call option with a strike price lower (or a put option with a strike price higher) than the current market value of the underlying futures commodity.

Initial performance bond — The minimum deposit a clearing firm must require from customers for each contract, when an account is new or when the account's equity falls below CME Clearing minimum maintenance requirements. The contract specifications indicate the amount of this deposit for futures contracts. Previously referred to as initial margin.

Inter-commodity spread — A spread that consists of offsetting positions in two or more commodities -- involving the simultaneous purchase of the same month of different but related futures contracts.

Inter-delivery spread — A spread trade involving the simultaneous purchase of one delivery month of a given commodity futures contract and the sale of another delivery month of the same contract on the same exchange. See spread trade.

Inter-market spread — A spread trade involving the simultaneous sale of a given delivery month of a futures contract on one exchange and the purchase of the same delivery month of the same or a related commodity on another exchange. Also called an inter-exchange spread.

Intra-commodity spread — A spread that consists of opposite positions in the same commodity in different contract months. An intra commodity spread may involve contracts of the same year or of different years. Also see calendar spread.

Intra-market spread — A spread trade involving the simultaneous purchase of one delivery month of a given commodity futures contract and the sale of another delivery month of the same contract on the same exchange. Also called an inter-delivery spread.

Intrinsic value — The relationship of an option's in-the-money strike price to the current futures price. For a put: strike price minus futures price. For a call: futures price minus strike price.

Last trading day — The day on which trading ceases in a contract month.

Limit order — An order in which the customer specifies a minimum sale price or maximum purchase price, as contrasted with a market order, which implies that the order should be filled as soon as possible at the market price.

Liquidation — A condition that describes the depth of market orders. A liquid market is able to accept large orders to buy or sell a commodity, with little change to the current price; ease of entry into, and exit from, the market.

Livestock cycle — A long, repeating pattern of increasing and decreasing livestock supply and prices.

London Inter-bank Offered Rate (LIBOR) — The price at which short term deposits are traded among major banks in London.

Basically, the interest rate that banks charge each other for loans (usually in Eurodollars). The LIBOR is officially fixed once a day by a small group of large London banks, but the rate changes throughout the day.

Long — One who has bought a futures or options on futures contract to establish a market position and who has not yet closed out this position through an offsetting procedure. The opposite of Short. Also, a market position that obligates the holder to take delivery if the position is not offset previous to delivery date.

Long hedge — The purchase of a futures contract in anticipation of an actual purchase in the cash commodity market. Used by processors or exporters as protection against an advance in the cash price. See hedge.

Maintenance performance bond — The minimum equity that must be maintained for each contract in a customer's account subsequent to deposit of the initial performance bond. If the equity drops below this level, a deposit must be made to bring the account back to the initial performance bond level. This is also generally the rate charged to clearing members by CME. Previously referred to as maintenance margin.

Margin — See Performance bond.

Mark-to-Market — The daily account adjustment of traders' positions relative to current prices to reflect the value of open positions; resulting in settlement variation debits/credits.

Determined by comparing the price of an open position against the closing price of the contract, and then debiting or crediting the traders' accounts accordingly

Market Order (MO) — An order submitted at any time within a trading session, executable immediately at the current market price.

Maturity — Period within which a futures contract can be settled by delivery of the actual commodity; the period between the first notice day and the last trading day of a commodity futures contract.

Maximum price fluctuation — The maximum amount the contract price can change up or down during one trading session, as stipulated by exchange rules. Consult CME Clearing contract specifications for specific price limit information.

Member — An individual admitted to membership on the exchange or any of its Divisions.

Minimum price fluctuation — The minimum unit by which the price of a commodity may fluctuate, as established by the exchange; a "tick." Also see tick.

National Futures Association (NFA) — The self regulatory organization of the futures industry. Chartered by Congress in 1981, the NFA regulates the activities of its member brokerage firms and their employees. Overseen by the Commodity Futures Trading Commission (CFTC).

Nearby — The nearest active trading month of a futures or options on futures contract. Also referred to as the lead month.

Offer — An offer to sell a specific quantity of a commodity at a stated price. (Opposite of a bid.)

Offset — 1. To remove a position from an account by establishing a position opposite an existing position, making or taking delivery, or exercising an option (i.e., selling if one has bought, or buying if one has sold). 2. To report reductions of a firm's inventory of open long purchase dates to CME Clearing.

Open Interest — The total number of futures contracts long or short in a delivery month or market that has been entered into and not yet liquidated by an offsetting transaction or fulfilled by delivery. Also known as Open Contracts or Open Commitments.

Each open transaction has a buyer and a seller, but for calculation of open interest, only one side of the contract is counted.

Open position — A long or short position that has not been liquidated.

Opening — The period at the beginning of the trading session officially designated by the exchange during which all transactions are considered made "at the opening."

Opening price — The range of prices at which the first bids and offers were made or first transactions were completed.

Option — The right, but not the obligation, to sell or buy the underlying (in this case, a futures contract) at a specified price on or before a certain expiration date.

There are two types of options: call options and put options. Each offers an opportunity to take advantage of futures price moves without actually having a futures position.

Option assignment — The random selection of an option writer to take a futures position when an option is exercised. The option writer receives a short futures position (if the trader was short a call) or a long futures position (if the trader was short a put) at the option's strike price.

Out of the money — A term used to describe an option that has no intrinsic value. A call option with a strike price higher (or a put with a strike price lower) than the current market value of the underlying futures commodity. Since it depends on current prices, an option can vary from in the money to out of the money with market price movements during the life of the options contract.

Out-trade — An unmatched trade. Generally results when there is some confusion or error on a trade — for example, when both traders think they were buying.

Overbought — A technical opinion of a market which has risen too high in relation to underlying fundamental factors.

Oversold — A technical opinion of a market which has fallen too low in relation to underlying fundamental factors.

Performance bond — The amount of money or collateral deposited by a client with his broker, or by a clearing firm with CME Clearing on open futures or options contracts before a customer can trade. The performance bond is not a part payment on a purchase.

1. Initial performance bond is the total amount of margin per contract required by the broker when an account is opened, or when the equity in the account falls below CME Clearing minimum maintenance requirements.
2. Maintenance performance bond is a sum which must be maintained on deposit at all times. If a customer's equity in any futures position falls below the maintenance level because of adverse price movement, the broker must issue a margin call to the minimum CME Clearing initial margin requirement to restore the customer's equity. Consult the contract specifications for margin requirements of specific contracts.

Performance bond call — 1. A request from a brokerage firm to a customer to bring performance bond deposits up to minimum levels. 2. A request by CME Clearing to a clearing firm to bring clearing performance bonds back to levels required by the exchange rules. Most exchanges refer to this as a "margin call."

Pit — The place where futures and options are traded on the floor of a commodity exchange.

Position — An obligation to perform in the futures or options market. A long position is an obligation to buy. A short position is an obligation to sell. See also call option and put option.

Premium — 1. The price paid by the purchaser of an option to the grantor (seller). 2. The amount by which a cash commodity price trades over a futures price or another cash commodity price.

Put — An option to sell a commodity, security or futures contract at a specified price at any time between now and the expiration of the option contract.

Put option — A contract that provides the purchaser the right (but not the obligation) to sell a futures contract at an agreed price (the strike price) at any time during the life of the option. A put option is purchased in the expectation of a decline in price.

Rally — An upward movement of prices following a decline. The opposite of a reaction.

Range — The difference between the highest and lowest price recorded during a given trading session, week, month, life of contract, or any given period.

Reaction — A decline in prices following an advance. The opposite of a rally

Resistance line — In technical analysis, a price area where new selling will emerge to dampen a continued rise. A price level at which there is enough sell pressure to keep prices from rising above that particular price level.

Round-turn — A completed transaction involving both a purchase and a liquidating sale, or a sale followed by a covering purchase.

A round turn counts both the buy and the sell as one event. In a typical exchange volume measurement, a one-contract trade would be counted as one round turn (i.e., single event, same trade, different customers). From the customer's perspective, a round turn represents two filled orders from his or her brokerage firm — one to take a position and one to offset that position (i.e., same customer, different trades).

Scalping — The practice of trading in and out of the market on very small price fluctuations.

Scalping normally involves establishing and liquidating positions quickly, usually within the same day, hour or even just a few minutes.

Settlement or settle price — The settlement price determined at the end of the regular trading hours; used to calculate gains and losses in futures market accounts, performance bond calls and invoice prices for deliveries. The official daily closing prices of a futures contract.

Short — The selling side of an open futures or options contract. The opposite of long.

Short hedge — The sale of a futures contract in anticipation of a later cash market sale. Used to eliminate or minimize the possible decline in value of ownership of an approximately equal amount of the cash financial instrument or physical commodity. See hedge.

Side-by-side trading — The simultaneous trading of the same futures contract on both a trading floor via open outcry and an electronic trading platform.

Speculator — An individual who does not hedge, but who trades in commodity futures or options with the objective of achieving profits through the successful anticipation of price movements. The speculator has no interest in taking delivery.

Spread — The price difference between two contracts. Holding a long and a short position in two related futures or options on futures contracts, with the objective of profiting from a changing price relationship.

Spread trades — A special type of pit or CME Globex platform trade that allows traders to trade the differential between either:

1. The price of a futures or options commodity in different contract months

OR

2. The price of two futures or options commodities in the same product group

A spreader is not concerned with the direction in which the market moves, but only with the difference between the prices of each contract.

Stop order — An order specifying a price at which it is activated and becomes a limit order. A buy stop is entered above the current market and becomes a limit order when the commodity trades at or above the specified stop trigger price. A sell stop is entered below the current market. It becomes a limit order when the commodity trades at the stop price or below. The stop can immediately execute up to the limit price.

Strike price — The price at which the option may be exercised (price at which the option buyer may purchase or sell the underlying futures contract). Strike prices on options are at exchange designated intervals. See also exercise price.

Supply — The quantity of a commodity that producers are willing to provide to the market at a given price.

Symmetrical triangles — A price formation that can either signal a reversal or a continuation of price movement.

Technical analysis — The study of historical price patterns to help forecast futures prices.

Tick — The minimum fluctuation in price allowed for a futures or options contract during a trading session as specified by the contract terms in CME Rulebook.

Time value — The amount by which an option's premium exceeds its intrinsic value. Usually relative to the time remaining before the option expires.

Trend — The general direction of the market.

Uptrend — A price trend characterized by a series of higher highs and higher lows.

Volume — The number of contracts in futures or options on futures made during a specified period of time. At CME, it refers to "aggregated quantity" (i.e., total traded volume of the day). The published exchange volume figure consists of all trades executed on the trading floor, CME Globex and by Exchange-For-Physical (EFP).

Writer — A seller of an option.

The Art of Hand Signals

Hand Signals

Hand signals — the sign language of futures trading — represent a unique system of communication that effectively conveys the basic information needed to conduct business on the trading floor. The signals let floor brokers and order clerks know the quantity, price and expiration month of an order, the specific type of order, and to check on the status of an order. The signals are the favored form of floor communication, especially in the financial futures pits, for three main reasons:

» 1.) **Speed and efficiency**

Hand signals enable fast communication over what can be long distances (as much as 30 or 40 yards) between the pits and order desks and within the pits themselves.

» 2.) **Practicality**

Hand signals are more practical than voice communication because of the number of persons on the floor and the general noise level.

» 3.) **Confidentiality**

Hand signals make it easier for customers to remain anonymous, because large orders do not sit on a desk, subject to accidental disclosure.

Hand Signal Development

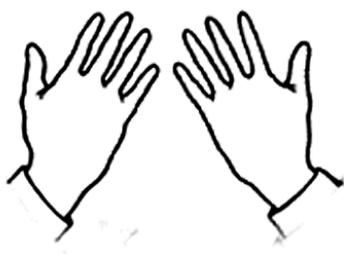
Hand signals have been used extensively at CME since the early 1970s, after the exchange created the International Monetary Market (IMM) and became the first U.S. futures exchange to offer financial (rather than agricultural/mineral) futures. Although speed had long been a key element in futures trading, it became even more important when financial futures entered the trading scene. Why? Because traders discovered they could take advantage of arbitrage opportunities between CME and other markets if they could trade quickly enough. (Arbitrage refers to the simultaneous purchase and sale of the same or an equivalent commodity or security to profit from price discrepancies. When price discrepancies emerge in the marketplace, the arbitrageur buys/sells until it is no longer profitable, or until prices are back in equilibrium.) Hand signals met the need to speed up communication in the fast-moving financial futures pits.

Following are the signals most commonly used at CME. Some are unique to particular pits on the CME floors. But take note, some signals may mean one thing in a certain pit, while a similar signal may mean something entirely different in another pit.

Buy/Sell

When indicating you want to buy (signaling a bid), the palm of the hand always faces toward you. You can remember this by thinking that when you're buying, you're bringing something in toward you. When making an offer to sell (offering), the palm always faces away from you. Think of selling as pushing something away from you.

BUY



SELL



Your palms face you when you are signaling a "buy," and face away from you when you are signaling a "sell."

Price

To signal price, extend the hand in front of and away from the body. For the numbers one to five, hold your fingers straight up. For six through nine, hold them sideways. A clenched fist indicates a zero or "even."

Note: Price signals indicate only the last digit of a bid or offer. For example, a "0" signal may refer to a "40" bid.

ONE



TWO



The Art of Hand Signals

THREE



FOUR



FIVE



SIX



SEVEN



EIGHT



NINE



EVEN



Quantity

To indicate quantity — the number of contracts bid or offered — touch your face.

To signal quantities one through nine, touch your chin.

To show quantities in multiples of 10, touch your forehead.

To show quantities in multiples of 100, make a fist and touch your forehead.

ONE



TEN



SEVEN



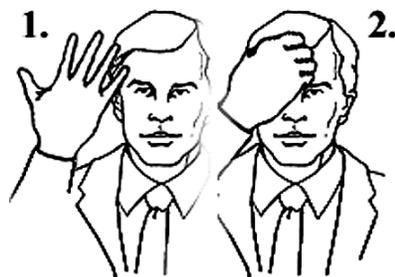
NINETY



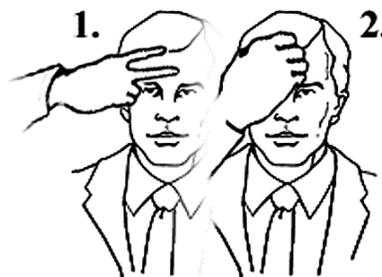
ONE HUNDRED



FIVE HUNDRED



SEVEN HUNDRED



Expiration Months

All futures contracts have an expiration month; thus, there are standard hand signals that indicate each month.

JANUARY

Put hand in front of throat



FEBRUARY

Thumb down, index and middle finger out



MARCH

Wiggle fingers, thumb tucked in



APRIL

Wiggle fingers while lowering hand and arm



MAY

Hold jacket flap



JUNE

Make bunny ears pointed downward



JULY

Point to eye



AUGUST

Rub forehead with four fingers, circular motion



SEPTEMBER

Hold palm open, pointing up



OCTOBER

Victory sign



NOVEMBER

Make an X in front of face



DECEMBER

Cross index and middle finger, as in good luck sign



Expiration Cycles

Trading CME Eurodollars involves a set of hand signals that convey expiration cycles. Eurodollars are listed in quarterly cycles, extending out 10 years. They are traded in 12-month “packs,” consisting of four 3-month quarters, with expiration months of March, June, September and December. Each 12-month pack is assigned a certain color. For example, the first series of contracts — those that are up to one year out — are called the “whites,” although they’re usually just referred to as the “front months.” After “the whites” come the “reds,” (the series of contracts one to two years out), followed by the “greens” (which are two to three years out), and so on. (The colors for the years four through 10 are, respectively, blue, gold, purple, orange, pink, silver and copper.) There is a hand signal that indicates each of these packs, except for the whites or front months. Below are some packs signals.



REDS

One motion; hand moves down from vertical to touch shoulder



GREENS

Index finger and thumb joined as in “ok”



BLUES

Fingers wiggle back and forth



GOLDS

Thumb on ring finger

Market Signals

Other hand signals convey the following:



FILLED

Thumb up; indicates that an order is completely filled



WORKING

Index finger rotates forward; means that the broker has not filled the order but is still attempting to do so; also used for partially filled orders on which the broker is still working to fill completely.



STOP

Fist into palm; means that the order is a stop order (activated when the price reaches a certain level).

At that point, a stop order becomes a market order and the broker must attempt to get the best price when filling it. Can be used to enter or exit both long and short positions. For example, if you are long and fear a drastic price drop, you can issue a stop order to be activated when the contract drops to a given price. Your stop then becomes a market order that the broker will attempt to fill before the price drops even more—even if it requires selling at or below the stop price. Likewise, a short can issue a “buy” stop order if he fears the price will rise.



OUT/CANCEL

Hand moves across throat; shows that the order has been canceled.

Options

In options trading on the CME floor, traders need to indicate whether an order is a put or a call, in addition to using the standard signals to convey other information about the order.

PUT



CALL



Summary

This has been a brief introduction to CME's hand signals. Anyone who works on the exchange floors needs to know and use these signals perfectly. Hand signals are essential for successful pit trading at CME, and using the **wrong signal** could result in a **substantial loss**.

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CME Web site



www.cme.com

The CME web site is a major source of information on CME, prices (both current and historical) and tools for traders. In fact, much of the web site is now available in Spanish, German, French, Italian, Japanese and Chinese.

There is so much available, navigating the web site could be a course all by itself! Students should become familiar with three links.



www.cme.com/edu

This link brings you to the page for the CME Market Education Department. Here you will find:

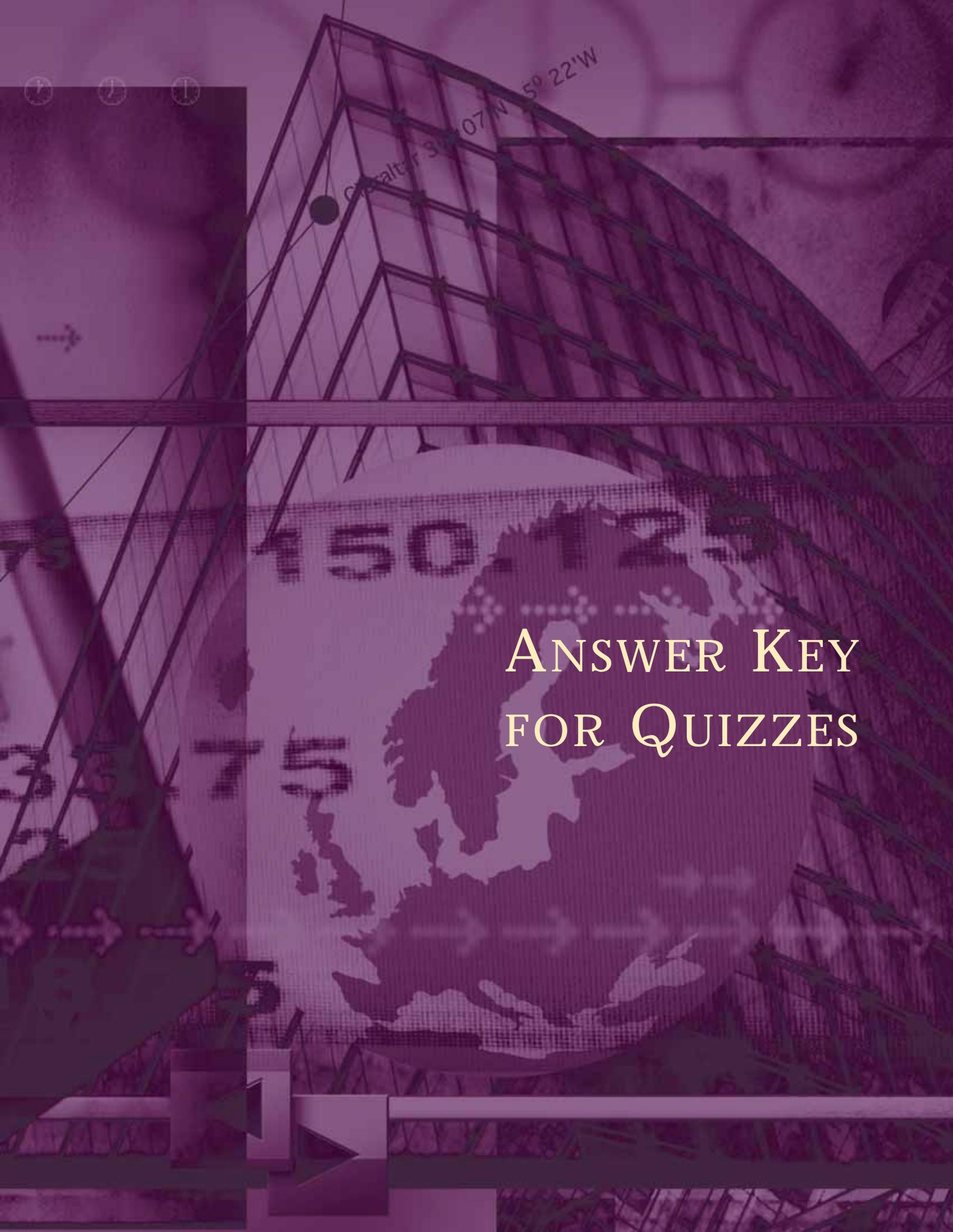
- » Description and schedule for classroom courses offered in Chicago
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- » Calendar of specialized seminars offered by CME
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- » And more

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This link brings you to the Contract Specifications. For each CME contract traded, you'll find information on its size, months traded, daily limits, minimum tick increments, trading hours and other details unique to each product make up a contract's specification details. Contract specifications — commonly known as “contract specs” — are provided online and as PDF files viewable with the Adobe Acrobat Reader.

www.cme.com/cmemagazine.

In July 2005, CME launched the inaugural edition of *CME Magazine*. *CME Magazine* is a new publication designed to keep you up-to-date on developments at CME that can enhance your successful participation in the dynamic derivatives industry. *CME Magazine* features customer case histories, trend stories, editorials and news briefs. Scheduled to be published several times a year, this link will bring you to an online version of *CME Magazine*.



ANSWER KEY
FOR QUIZZES

Answer Key for Quizzes

CHAPTER 1 QUICK QUIZ #1 PAGE 2

1. The price would tend to rise because the supply would be reduced and buyers would be willing to spend more money for what was left.
2. The price would tend to rise because the supply would be reduced and buyers would be willing to spend more money for what was left.
3. Demand would decrease, and the price would fall.

QUICK QUIZ #2 PAGE 4

1. Commodity
2. Currency
3. Interest rates
4. Equities

QUICK QUIZ #3 PAGE 14

1. Supply and demand
2. Commodity, quantity, quality, time and place of delivery
3. It allows them to trade commodities without making or taking delivery.
4. A futures contract is standardized, while a forward contract is negotiated privately between the seller and buyer. The futures price is determined at the exchange, while the forward contract price is negotiated privately.

CHAPTER 3 QUICK QUIZ PAGE 32

1. SPZ
2. JYM
3. FCK
4. PBN

CHAPTER 4 QUICK QUIZ

PAGE 47

True or False

1. False
2. True
3. False
4. False
5. True
6. False
7. False
8. True
9. True

Multiple Choice

1. b
2. c
3. b

#2510	ACME	61 2
83156		
BUY	SELL	
5 Dec Live Cattle 6700 or 5 LCZ 6700		

#2510	ACME	61 2
83156		
BUY	SELL	
2 Mar British Pound MKT or 2 BPH MKT		

#2510	ACME	61 2
83156		
BUY	SELL	
10 Mar Eurodollar <u>MKT</u> or 10 EDH <u>MKT</u>		

#2510	ACME	61 2
83156		
BUY	SELL	
20 Apr Live Hogs 5000 <u>Stop</u> or 20 LHJ 5000 <u>Stop</u>		

CHAPTER 5 QUICK QUIZ #1 PAGE 55

1. He can buy (go long) in the futures market now.
2. She can sell (go short) CME S&P 500 futures now. This would be considered a short hedge.

QUICK QUIZ #2 PAGE 57

1. They enter the futures markets to transfer or minimize risk.
2. They accept the risk in the hope of making a profit. They accept the risk in the hope of making a profit (and thereby bring liquidity to the marketplace and contribute to the price discovery function of futures markets).
3. Hedgers use futures contracts to protect themselves from adverse price movements in the underlying cash market. Speculators rarely have any interest in making or taking delivery of the cash commodity, but rather use futures contracts in the pursuit of profit. They provide a market in which hedgers can hedge.

CHAPTER 6 QUICK QUIZ PAGE 60

1. Buy in New York, sell in London.
2. \$20,000 ($\$20 \times 1000 \text{ ounces} = \$20,000$)

CHAPTER 7 QUICK QUIZ #1 PAGE 64

1. She believed cattle would rise more.
2. She sold back the cattle contract and bought back the hogs contract.
3. \$800 ($2\text{¢/pound} \times 40,000 \text{ pounds} = \800)

QUICK QUIZ #2 PAGE 69

1. Intermarket
2. Interdelivery
3. Intercommodity
4. Intermarket

CHAPTER 8

QUICK QUIZ

PAGE 76

1. Lumber demand down, prices would fall.
2. Corn supply up, prices would fall.
3. Hog supply down, prices would rise.
4. Yen demand up, prices would rise. (Note that yen futures are quoted in U.S. dollars per yen. Assuming the yen becomes more valuable and dollars stay the same, it would cost more dollars to buy yen.)

CHAPTER 9

QUICK QUIZ

PAGE 89

Multiple Choice

1. a
2. b
3. d
4. b
5. c

True or False

6. False

CHAPTER 10

QUICK QUIZ

PAGE 95

1. c
2. b
3. a

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