INTRODUCTION TO COTTON FUTURES

Blake K. Bennett
Extension Economist/Management
Texas Cooperative Extension, The Texas A&M University System

Introduction

For well over a century, industry representatives have joined traders and investors in the New York Board of Trade futures markets to engage in price discovery, price risk transfer and price distribution of cotton. In fact, the first cotton futures market contracts were traded in New York in 1870. From that time, the cotton futures market has grown in use, but still provides the same services it did when trading began.

For the novice, futures market trading may seem chaotic. However there is a reason for every movement, gesture, and even the color of jacket the traders wear on the trading floor. All these elements come together to provide the world a centralized location where demand and supply forces are taken into consideration and market prices are determined for commodities.

Having the ability to take advantage of futures market contracts as a means of shifting price risk is a valuable tool for producers. While trading futures market contracts may be a relatively easy task to undertake, understanding the fundamental concept behind how these contracts are used from a price risk management standpoint is essential before trading begins. This booklet will assist cotton producers interested in gaining or furthering their knowledge in terms of using futures contracts to hedge cotton price risk.

Who Are The Market Participants?

Any one person, group of persons, or firm can trade futures contracts. Generally futures market participants fall into two categories. These categories are hedgers and speculators. While each serves a purpose, the goal of the two very different types of traders are not the same.

Hedgers

Futures market participants who either own or will own the physical commodity and use the futures market to protect against adverse price movements can be classified as *Hedgers*. These participants attempt to shift price risk to other participants. *Hedging* can be defined as: establishing opposite positions in the futures and cash markets as a protection against adverse price changes (Cramer et al. 1997). For example, cotton producers can use the futures

market to ensure a minimum selling price for their cotton at harvest. The act of hedging will be further discussed later.

Aside from producers, other hedgers using the futures market are those who wish to lock in an acceptable margin between their purchase cost and their selling price. For example, a cotton buyer may use the futures market to ensure a minimum buying price for cotton that will be purchased later in the year.

Speculators

Any person or firm that attempts to anticipate commodity price changes and make profits through the sale and/or purchase of commodity futures contracts is referred to as a *Speculator* (Wasendorf and McCafferty, 1993). Any person at any point in time can be considered a speculator. The one criteria that sets speculators apart from hedgers is that speculators do not have ownership of a commodity (such as cotton) either growing or in storage. For example, a person who does not grow, purchase for resale, or purchase for manufacturing cotton but trades cotton futures market contracts would be considered to be a speculator in the cotton market.

Role of Hedgers and Speculators

Commodity markets would not operate effectively if the only participants involved were hedgers. Speculators are essential to the efficiency of a futures market because they assume the risk of price movements in pursuit of profit. Because producers want only the highest price for a commodity and users of the commodity only want the lowest price, it would be difficult, if not impossible for hedgers to agree on a price. Therefore, speculators help to bridge the gap between the price producers want to sell their commodity and the price users want to buy the commodity. When speculators are present in the market, the number of buyers and sellers increases. Hedgers are no longer limited by the hedging needs of other hedgers. Because speculators assume risk and provide liquidity and capital, they provide the keys to effective futures markets. Table 1 provides a reason for trading futures contracts for both hedgers and speculators.

Table 1. Reasons for trading futures contracts for hedgers and speculators.

Market Participant	Reasons for Buying Futures Contracts	Reasons for Selling Futures Contracts
Hedgers	To protect against rising prices by locking in a price.	To protect against falling prices by locking in a price.
Speculators	To profit from rising prices.	To profit from declining prices.

Understanding How Price Is Reported

Cotton futures contracts, traded at the New York Board of Trade, are first distinguished by the month associated with the contract. The futures contract months for cotton are: March,

May, July, October, and December. These months represent separate cotton contracts. The month associated with each contract indicates which month the contract will expire.

Each cotton contract will have a separate price reported in cents and hundredths of a cent per pound. While there is one location where these prices are discovered (New York Board of Trade), there are several outlets to receive the price. These outlets can range from the World Wide Web to newspapers. The format of the price reports may differ, but all outlets generally provide similar information. For instance, all sources provide the contract month and year, opening price, high and low price recorded for the day, settlement price, and change from the previous day. The order in which these prices are reported may differ, as well as the way in which the price is reported. For example, some reported prices use a decimal point to distinguish between whole cents and fractions of cents while some do not use a decimal point (example: 46.40 and 4640 represent 46.40 cents per pound). Recognizing these two ways in which price is reported is important to prevent confusion.

Reporting Cotton Futures Market Prices on the World Wide Web

Cotton futures market prices can be found at various locations on the World Wide Web. These locations provide similar information to what is found in newsprint, although space requirements are not limited as it is in newspapers. Therefore, much more information regarding the daily activities of the futures market contracts is made available. An example of how the cotton price is reported on the World Wide Web is presented in Table 2.

Table 2. Cotton futures price as reported by the New York Board of Trade.

CONTRACT	DAILY PRICE RANGE				SETTLE		***Current Volume Report*** TOTALS AS OF 11/16/2004	
MONTH	OPEN	HIGH	LOW	CLOSE	PRICE	CHANGE	VOLUME	OI
Dec 2004	4640 4650	4730	4610	4706 4720	4714	+55	14831	12972
Mar 2005	4190 4210	4280	4190	4255 4270	4260	+48	14650	51260
May 2005	4205 4210	4265	4205	4240^{B} 4250^{A}	4245	+35	2550	8049
Jul 2005	4265 4295	4340	4265	4305 4310	4306	+34	1777	9321
Oct 2005	4500^{B} 4580^{A}	0	0	4520^{B} 4540^{A}	4530	-30	0	64
Dec 2005	4650 4660	4690	4625	4625 0	4625	-26	1051	5445

Source: New York Board of Trade (2004a)

Contract Month

The contract month column of the price report in Table 2 lists the month and year for each futures market contract. For instance, Dec 2004 represents the cotton futures market contract that will expire in December 2004. Mar 2005 represents the cotton futures market contract expiring in March 2005.

Open

Open in a price report stands for the first price recorded of the day's trading. In some instances, two prices are reported. This represents a time when futures prices opened within a range of prices. For instance, the December 2004 cotton futures contract opened within the range of 46.40 and 46.50 cents per pound. It should also be noted that some price reports list a superscript "B" and "A" with reported opening prices. The "B" represents the *bid price*, and the "A" the *ask price*. The bid price stands for an attempt to buy a futures contract that

was not sold. The ask price, on the other hand represents an attempt to sell a futures contract that was not bought. Therefore, an open which only has a bid and ask reported indicates that no trade was made for this contract at the open of the market.

High

The highest price traded for each contract during the day's trading is reported in the "High" column. For example, the highest price traded during the day for the December 2004 contract in Table 2 was 47.30 cents per pound. If no contracts were traded (bought and sold) during the day's activities, there is no reported high price for the day. The October 2005 contract reported in Table 2 is an example where no trades occurred during the day.

Low

The "Low" column of price reports indicate the lowest traded price for each contract during the day's trading. Examining the December 2004 contract in Table 2 again indicates that the lowest price traded during the day was 46.10 cents per pound. As with the highest price, in instances where no contracts were traded during the day, there is no reported low price for the day.

Close

The final closing price recorded for the day is reported in the "Close" column. As with the open, there are instances where two prices are reported in this column. This represents a time when futures prices closed within a range of prices. For instance, the December 2004 cotton futures contract closed within a price range of 47.06 and 47.20 cents per pound. Some price reports make use of the bid and ask associated with the closing price (denoted by a superscript "B" and "A" with reported closing prices). The representation of the bid and ask are identical to those found with the Open.

Settlement Price

The futures contract settlement price represents the price at which the futures clearing house settles all accounts each day. In some cases, the settlement price equals the closing price for the day. In other instances, as in Table 2, the settlement price is an average of the prices (range of prices) that occurred on the close of trading. This settlement price must be determined to establish margin calls and invoice prices for deliveries made against futures contracts. For example, the December 2004 cotton futures market settlement price in Table 2 is 47.14 cents per pound. If a contract hasn't traded on a day, the settlement price represents a "best guess" of where it would have traded had it traded at the settlement time.

Change

The change in the settlement price from the previous day's settlement is reported in the "Change" column. A plus sign (+) or no sign at all in front of a reported price indicates a price increase. A decrease in price will be reported with a negative (-) sign. No change in the settlement price will be represented by either a zero (0), dashed line (--) or by NC. For example, the December 2004 contract in Table 2 increased by 0.55 cents per pound from the previous day's trading.

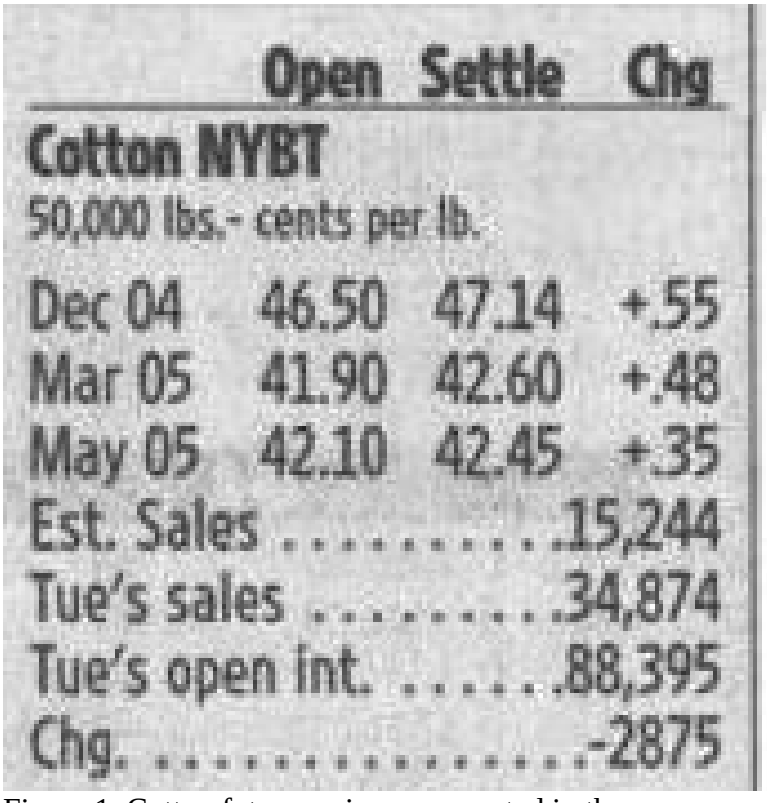
Volume and Open Interest

The total number of contracts traded for a specific day will also be reported. The total number of contracts traded is reported as Volume. While it is beginning to change, most futures exchanges still report volume from the previous day's trading with the current day's prices. In Table 2, the volume (total number of contracts traded) of the December 2004 cotton futures contract equaled 14,831 contracts at the end of trading on the previous day. It should be noted that if no trades were made during the previous day, as with the October 2005 contract, then volume will equal zero.

Open Interest (reported as "OI" in Table 2), measures the amount of outstanding (open) positions in a futures contract at any time. As expiration of the contract draws near, open interest tends to fall rapidly, as positions are either closed out by traders or submitted for delivery. Open interest figures are generally reported by futures exchanges with a one day delay. Therefore, the December 2004 in Table 2 open interest equaled 12,972 positions at the end of trading on the previous day.

Reporting Cotton Futures Market Prices In Newspapers

As mentioned earlier, prices can also be obtained from local newspapers. While prices reported in newspapers are generally accurate and useful, it should be noted that these prices are normally from the previous day's trading. Furthermore, the amount of information reported in newsprint is usually less than other sources reports. Figure 1 provides an example of cotton prices reported in a news paper.



	Open	Settle	Chg
Cotton NYBT			
50,000 lbs.- cents per lb.			
Dec 04	46.50	47.14	+.55
Mar 05	41.90	42.60	+.48
May 05	42.10	42.45	+.35
Est. Sales			15,244
Tue's sales			34,874
Tue's open int.			88,395
Chg.			-2875

Figure 1. Cotton futures prices as reported in the newspaper.
Source: Dallas Morning News

As with other cotton futures market price reporting sources, newspapers generally report the contract month in the first column. For example, Dec 04 represents the December 2004 cotton futures market contract. Depending on the specific newspaper, the amount of information, the order as well as how the price is reported may differ. Here the opening price for the day is reported first (in the "Open" column). The next column (Settle) represents the settlement price for the day. Finally the change in price from the previous day (either positive or negative) is reported in the last column (Chg). The estimated sales (volume) for the previous day are reported below the prices followed by the actual sales (volume) two days ago. The actual open interest two days ago is reported next followed by the change in open interest.

As mentioned earlier, some price reporting outlets specify the price of cotton using a decimal point as in Figure 1. With this in mind, the information reported in Figure 1 can be interpreted as follows. The newspaper was printed on November 18, 2004. Therefore, the prices reported are for activity that occurred on November 17, 2004. The December 2004 cotton contract opened trading at 46.50 cents per pound and settled at 47.14 cents per pound. The settlement price was 0.55 cents per pound higher than the December 2004 cotton futures settlement price on November 17, 2004. The estimated number of sales (volume) for November 17, 2004 equaled 15,244 contracts. The actual number of sales (volume) for Tuesday November 16, 2004 equaled 34,874 while the actual open interest equaled 88,395. The last row of Figure 1 suggests that open interest on November 16, 2004 was 2,875 less than open interest on November 15, 2004.

Cotton Futures Market Contract and Date Symbols

As on any stock exchange, cotton futures market contracts are distinguished by specific symbols. These symbols help distinguish and summarize different contracts. For instance, the symbol used for the cotton futures market contract is CT. To further distinguish different cotton futures market contracts, symbols are also used for the different contract months. Table 3 provides the various symbols for a cotton futures market contract by month.

Table 3. Cotton futures market contract and month symbols.

Contract/Month	Symbol
Cotton Futures Market Contract	CT
March	H
May	K
July	N
October	V
December	Z

From Table 3, it can be seen that the contract symbol for cotton is "CT". Each specific contract month are: "H" for March, "K" for May, "N" for July, "V" for October, and "Z" for

December. As an example the following represents a way in which a cotton contract may be written.

CTZ04 represents the December (Z),
Cotton (CT), 2004 (04) futures market contract

It is essential that the symbols used for each specific contract, contract month, year as well as other specifications of the contract be understood by anyone trading futures contracts. The specifications of the New York Board of Trade cotton futures contract are provided in the Appendix.

Charting Cotton Futures Contract Prices Over Time

Charts are used by participants in the futures market. These price charts give participants an idea of where the current price is in relation to historical prices. Analysis can also be performed using these charts in an attempt to determine future price direction given historical movements. This form of study is called *Technical Analysis*. While the use of technical analysis is relevant to those attempting to hedge cotton using the futures market, it is beyond the scope of this publication.

When attempting to graphically represent prices over time, one must first determine what contract chart to create. Graphical representation of commodity prices range in scope from charts of one specific futures contract (example: the December 2004 cotton futures contract) to charts of several futures contracts over several years (example: all December futures contracts traded between 1995 and 2004).

After the contract to chart has been determined, the next step is to determine the time frame which you would like to analyze. This time frame can be: an intra-day chart (plots contract prices every 15 minutes); a daily chart (plots daily contract prices), a weekly chart (plots weekly contract prices), a monthly chart (plots monthly contract prices), etc.

While there are several different ways to present a chart of futures contract prices, *Bar Charts* are widely used. These charts give necessary information to view the range of prices during a specified time period (such as a day) as well as general price movements over time. A bar chart of the daily December 2004 cotton futures contract is presented in Figure 2.

Figure 2. Daily December 2004 cotton futures contract price bar chart.
Source: barchart.com

The chart presented in Figure 2 may seem complex, however each portion of the chart has valuable meaning. The price is presented vertically and the time frame (date) along the bottom of the chart. Each line within the chart, represent an individual day's trading. Figure 3 explains how to interpret each day's trading line.

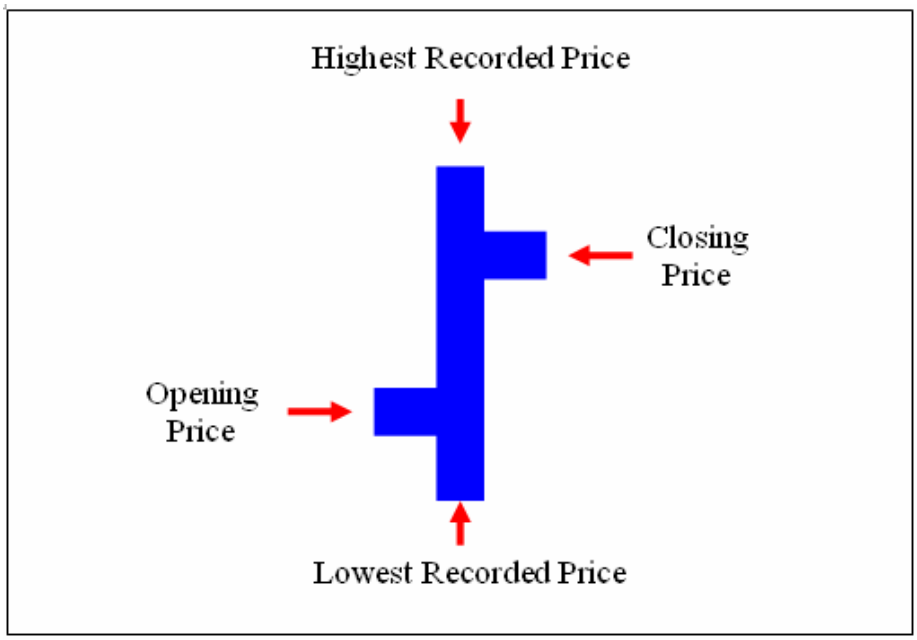


Figure 3. Interpretation of an individual day's trading line.

An understanding of how each time increment (example: a day's trading) is represented is essential to reading a futures contract price chart. Examining the representation in Figure 3, there are four distinct parts that are worth noting. First the vertical line represents the range of the futures prices during the day's trading activities. The top of the line represents the highest price traded during the day, and the bottom of the line the lowest price. The small line to the left of the vertical line represents the opening trading price. The small line to the right represents the closing (or settlement) trading price.

You Can Buy or Sell Futures Market Contracts at any Point in Time

One confusing aspect of futures market is the fact that you can buy or sell a futures market contract at any point in time. It is often understood that one can buy a futures contract. This may be done to profit from or protect against rising prices. The confusing element is selling a futures contract. The confusion comes from the following statement:

"How can I sell a contract that I do not own?"

To understand why a futures market contract can be sold before it is owned, we must remember just what a futures market contract represents. A futures contract is an agreement to **later** buy and sell a commodity (Hieronymus, 1977). The key to this definition is the word "later". Therefore, by selling a futures market contract, you are entering into an agreement to sell a commodity at a later date. The person or firm which buys the contract from you is agreeing to buy the commodity at a later date.

If I Sell a Futures Contract, Do I Have to Deliver the Commodity?

Another confusing point of the futures market is that of delivery of the commodity when the contract expires. A majority of those that sell futures market contracts never make delivery of the commodity, even though it is an option. Those that sell a futures contract will ultimately purchase the contract back at a later date, to avoid making delivery. This action is often referred to as *Offsetting* the position. By doing so, the person or firm does not have to deliver the actual commodity. On the other side of the trade, a person who buys a futures market contract can offset the position by selling the contract at a later date. Table 4 shows the two different ways in which a futures market position can be offset.

Table 4. How to offset a futures market position.

Initial Position	Action Taken to Offset the Initial Position
Buy 1 Cotton Futures Market Contract	Sell 1 Cotton Futures Market Contract
Sell 1 Cotton Futures Market Contract	Buy 1 Cotton Futures Market Contract

Going Short and Going Long

Generally, futures market participants are either referred to as "*Long*" or "*Short*". These two terms refer to whether futures market contracts have been sold or purchased. The term *Long* refers to a market position that has been established through the purchase of a futures market contract. The term "*Short*" refers to a market position that has been established through the sale of a futures market contract.

Using the Cotton Futures Contracts to Hedge Price Risk

Cotton producers are at risk of their commodity decreasing in value over time. This risk is defined as price risk. The existence of price risk in the cash market makes futures markets necessary. Producers can use futures market contracts to shift market price risk exposure to other hedgers with opposite risk profiles (those who will buy cotton at a later date) or to futures market participants who are willing to assume risk in return for a profit opportunity (New York Board of Trade, 2004b). Figure 4 presents a graphical illustration of the basics behind a futures hedge.

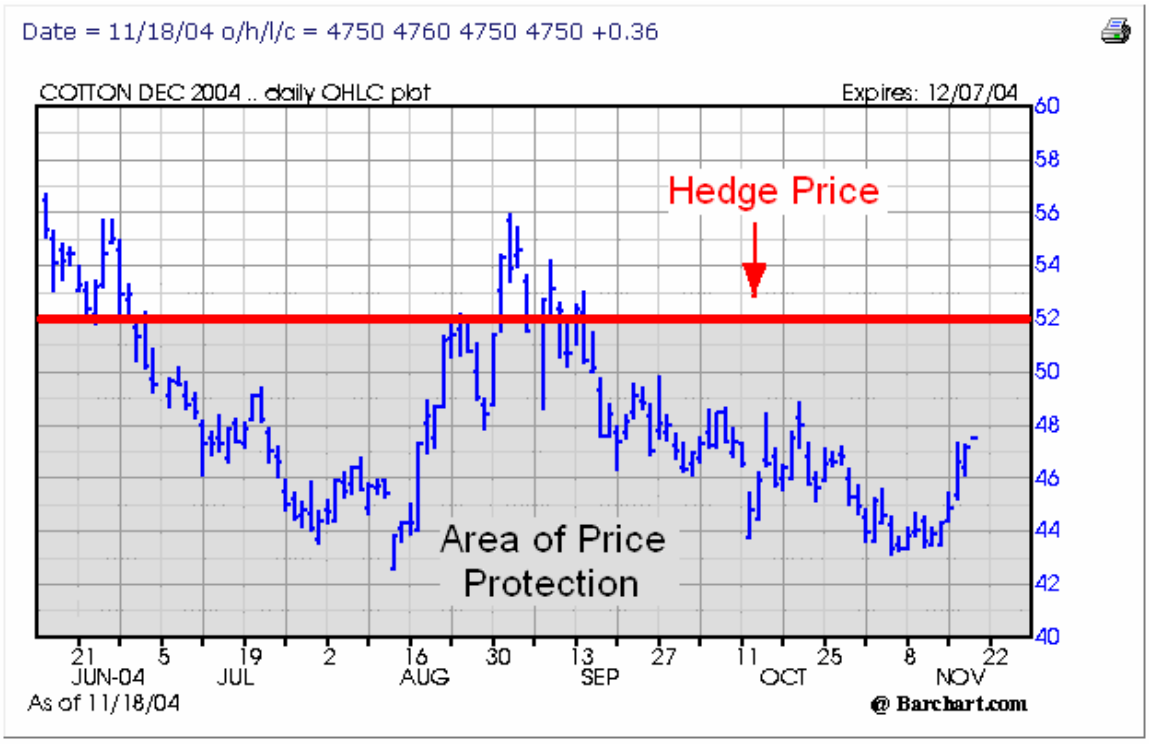


Figure 4. Protected price area when using a futures market hedge.
Source: barchart.com

Because the price of cotton futures contracts fluctuates daily, producers are at risk of falling prices. Producers can "lock-in" a price at any given point by using a futures market hedge. Once a futures market hedge has been initiated, producers are no longer at risk of falling prices. Figure 3 illustrates the basics of a futures market hedge. If a hedge is placed at $52.00 cents per pound of cotton (red line), producers are no longer at risk of the price they receive falling below this level. The only risk the producers face in this scenario is basis risk, (see Step 4). The grey shaded area of Figure 4 represents the area of price protection.

Step 1: Estimate Production

A cotton producer should first estimate the total amount of cotton (in bales) that will be produced during the year. This will determine the total number of futures contracts that can be used to hedge price risk. Since one futures contract represents approximately 100 bales (with each bale weighing about 500 lbs.), the estimated total number of bales that will be produced can be divided by 100. The result will be the estimated total number of futures contracts that can be used to hedge price risk. For example, if a producer estimates that 1,000 bales will be produced, a maximum of 10 contracts (1,000 bales /100 bales per contract = 10 contracts) could be used to hedge price risk.

Step 2: Know Your Cost of Production

Opportunities to take advantage of profitable cotton prices can occur several times during a year. These opportunities may come before the crop is planted, during the growing season, or even after the cotton is stored. However, in order to identify these opportunities, cotton producers must first determine what it costs to produce (break-even price). Without knowing

the cost of production, opportunities may be lost or prices may be "locked-in" below the break-even price.

Step 3: Determine Which Futures Market Contract to Use

There are five separate months which cotton futures are traded. These months are: March, May, July, October, and December. Producers will first estimate when the cotton will be sold, in order to determine which futures contract to use to hedge price risk. Producers will use the contract which is nearest in time to when the cotton will be sold. If for example, a producer estimates that cotton will be sold in December, the December contract will be used to hedge price risk. Cotton that sold during months with no corresponding futures contract, requires the producer to decide which contract to use. Generally, the next contract in time order is used in this case. For example, if a producer will harvest and sell cotton in November, the December futures contract is generally used.

Step 4: Estimate Local Basis

The local basis must then be estimated before a producer can accurately determine if a futures market price opportunity will be beneficial or not. Basis refers to the difference between the futures price and local cash price for cotton at the time the cotton will be sold. This basis may either be positive (local basis is *over* the futures price) or negative (local basis is *under* the futures price), depending on location and local demand for the cotton. To estimate local basis at the time of sale, historical records of local prices should be compared to historical futures prices. Subtracting the historical futures price from the historical local cash price of the same year will provide an estimate of local basis. Several years of historical prices should be used and averaged to get a true estimate of local basis. An example of calculating historical basis is presented in Table 5.

Table 5. Estimate of Historical Local Basis

Year	Historical Local December 1st Cash Price (Cents/lb.)		Historical December 1st Futures Price (Cents/lb.)		Local December 1st Basis (Cents/lb.)
2003	66.50	-	68.25	=	- 1.75
2002	46.25	-	47.30	=	- 1.05
2001	32.35	-	35.41	=	- 3.06
2000	62.95	-	64.35	=	- 1.40
1999	47.50	-	48.95	=	- 1.45
Average (Local December 1st Basis Estimate in cents/lb.)		-			**- 1.74**

Step 5: Hedge Price Risk

Producers of cotton will ultimately sell their cotton at some point after harvest. As stated earlier, before cotton is planted, while it is growing, or while being stored after harvest, there exists the potential for the price of cotton to decrease (market price risk). One way to protect against a price decrease is through the use of a futures contract. To protect against falling prices, cotton producers who will plant, are currently growing or are currently storing cotton

(often referred to as the cash market*)* will ***sell*** the number of futures contracts that will protect the cotton from falling market prices. This is referred to as a *Short Hedge*. These contracts will be bought back at harvest.

Example Scenarios

Two example scenarios are provided below to assist in explaining how a futures market hedge can protect a producer from market price risk. The first example shows the net realized price if a futures market hedge is placed when prices decrease. The second example shows the net realized price if a futures market hedge is placed when prices increase.

Example Scenario 1: Price Decrease

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 68 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested in December (therefore, the producer use the December cotton futures contract). The producer would like to hedge price risk for 50 percent of the estimated production. The December futures contract is currently trading at 75.50 cents per pound. The estimated local December price is 1.74 cents per pound less than December futures price (local basis is 1.74 cents per pound under).

Relevant Information

Date =	May
Cotton Harvest & Sales Date =	December
Break-Even Price =	68 Cents Per Pound
Estimated Production =	1,000 bales
Number of Contracts Needed =	5 Contracts ([1,000 bales x 50%]/100 bales per contract)
Futures Contract to Consider =	December Cotton Futures Contract
Current December Futures Price =	75.50 Cents Per Pound
Estimated Local December Basis =	- 1.74 Cents Per Pound

Futures Market Positions		Cash Market Positions	
May:	Sell 5 December Cotton Futures Contracts at 75.50 cents per pound.	Objective:	Realize 73.76 cents per pound on 50% of total estimated production.
December:	Buy 5 December Cotton Futures Contracts at 59.25 cents per pound.	December:	Sell Cash Cotton for 57.51 cents per pound.

Actual Local December Basis: - 1.74 cents per pound (57.51 - 59.25 = - 1.74)

Results:

Local Cash Cotton Price		57.51 ¢/lb
Futures Profit (75.50 – 59.25)	+	16.25 ¢/lb
Realized Price**		73.76 ¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

In Example Scenario 1: Price Decrease, the producer was able to ensure a minimum selling price of 73.76 cents per pound for 50 percent of the estimated total production by estimating local basis correctly and selling futures contracts. It should be noted that the realized price equals 75.50 (December futures price in May) plus the estimated local basis in December (-1.74).

Example Scenario 2: Price Increase

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 68 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested in December (therefore, the producer will use the December cotton futures contract). The producer would like to hedge price risk for 50 percent of the estimated production. The December futures contract is currently trading at 75.50 cents per pound. The estimated local December price is 1.74 cents per pound less than December futures price (local basis is 1.74 cents per pound under).

Relevant Information

Date =	May
Cotton Harvest & Sales Date =	December
Break-Even Price =	68 Cents Per Pound
Estimated Production =	1,000 bales
Number of Contracts Needed =	5 Contracts ([1,000 bales x 50%]/100 bales per contract)
Futures Contract to Consider =	December Cotton Futures Contract
Current December Futures Price =	75.50 Cents Per Pound
Estimated Local December Basis =	- 1.74 Cents Per Pound

Futures Market Positions		Cash Market Positions	
May:	Sell 5 December Cotton Futures Contracts at 75.50 cents per pound.	Objective:	Realize 73.76 cents per pound on 50% of total estimated production.
December:	Buy 5 December Cotton Futures Contracts at 81.25 cents per pound.	December:	Sell Cash Cotton for 80.51 cents per pound.

Actual Local December Basis: - 1.74 cents per pound (80.51 – 81.25 = - 1.74)

Results:

Local Cash Cotton Price	80.51 ¢/lb
Futures Loss (81.25 – 75.50)	- 5.75 ¢/lb
Realized Price**	73.76 ¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

In Example Scenario 2: Price Increase did not receive the highest local price, but the objective of realizing 73.76 cents per pound was met (which is greater than the estimated cost of production). The producer was able to ensure a minimum selling price of 73.76 cents per pound for 50 percent of the estimated total production by estimating local

basis correctly and selling futures contracts. As before, the realized price equals 75.50 (December futures price in May) plus the estimated local basis in December (- 1.74).

Example worksheets are provided in the Appendix of this booklet for practice.

Why Does Using Futures Contracts to Hedge Price Risk Work?

Using futures contracts to hedge cotton price risk "locks in" a selling price because the producer has an "equal and opposite position" in both the cash and futures markets. This means that a producer who owns (or is growing) 100 bales of cotton, sells and equal amount of cotton through cotton futures contracts. If the price decreases, the cash cotton (the cotton the producer owns) is becoming less valuable while the futures contract is becoming more valuable. On the reverse side, if price increases, the cash cotton is becoming more valuable while the futures contract is becoming less valuable. Figure 5 shows the relationship between the cash cotton position and the short futures hedge position.

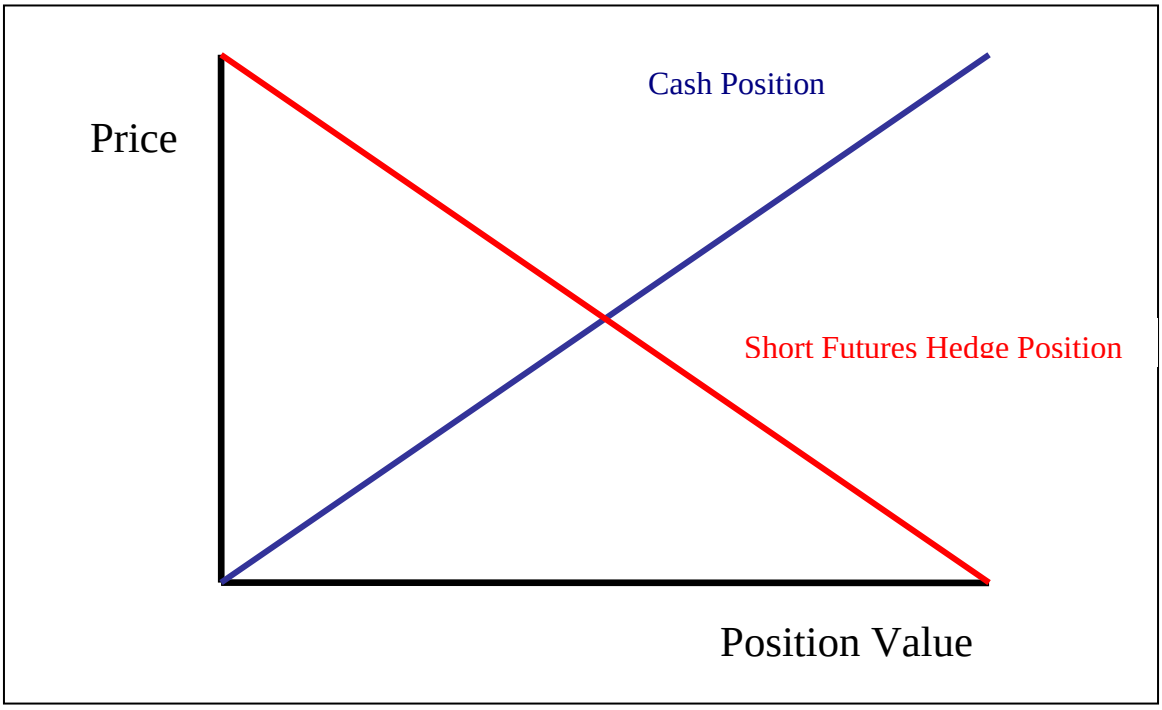


Figure 5. Relationship between the cash and short futures hedge position.

In Figure 5 it can be seen that as the price increases, the cash position (blue line) increases in value. At the same time, the short futures hedge position (red line) decreases in value. If the price decreases, the cash position decreases while the short futures hedge position increases in value. Aside from changes in basis, both the cash and short futures hedge positions change in value equally as the price changes.

Margins and Margin Calls: What Are They? What Is Their Purpose?

To enter the futures market (buy or sell futures contracts), you must first post a margin deposit. This money is a minimal percentage of the contract's value and is a performance bond that helps to prevent contract default. Margin money also helps to ensure the integrity of the contract. Different contracts have different margin requirements, based on the size and value of the futures contract. Margin deposits are made to a registered commodity futures broker who in turn must deposit margin in a customer account. Lower margins are generally required of hedgers because they own the corresponding cash commodity. Brokers are required, by law, to hold customer margin money in an account separate from their operating funds. It is important to note that futures market exchanges set the margin requirements, however local brokerage firms may choose to a higher amount.

After the initial deposit is made and a contract is either bought or sold, the margin account fluctuates on a day-to-day basis based on the performance of the contract. The process of adjusting the margin account is called *Market-to-Market*. In other words, if the value of the position increases, money is deposited into the margin account. If the value of the position decreases, money is withdrawn from the margin account.

There is a set limit regarding the amount of money that must remain in a margin account. If enough withdraws are made from a margin account that it falls below this limit, you will receive a *Margin Call*. A margin call is a call from a broker to a customer (called a maintenance margin call) demanding an additional deposit into the margin account. From a hedgers prospective, a margin call indicates that while the futures contract has become less valuable, the cash commodity has become more valuable. This is the foundation of hedging: a gain (or loss) in the futures market will offset a loss (or gain) in the cash market.

As stated earlier, hedgers and speculators generally pay different margin deposits. The margin deposit required of hedgers is generally lower because they own the corresponding cash commodity. As of November, 2004, hedgers who trade cotton futures contracts traded on the New York Board of Trade must deposit $1,200 per contract into a margin account. A speculator, on the other hand, who trades the same contract must deposit $1,690 per contract into a margin account. The maintenance margin for both the hedger and speculator is $1,200 per contract (New York Board of Trade, 2004a). To better illustrate how margin accounts work, an illustration is provided in the margin example below.

Margin Example Scenario

A producer sells 1 cotton futures contract and a speculator buys 1 cotton futures contract. The trade is made at the current market price of 50.77 cents per pound. The initial margin requirement for the hedger is $1,200 and $1,680 for the speculator. The maintenance margin is set at $1,200 for both the hedger and speculator. They will need to deposit enough margin to bring their account up to the initial level, if their required margin level falls below the maintenance margin level.

New York Board of Trade Cotton Futures
Initial Margin = $1,200 for hedgers and $1,680 for speculators
Maintenance Margin = $1,200 for hedgers and speculators

	Closing Price	Hedger Account Balance	Speculator Account Balance
		Sells 1 Cotton Futures Contract	**Buys 1 Cotton Futures Contract**
Day 1	50.77 ¢/lb.		
		$1,200 initial margin	**$1,680** initial margin
Day 2	49.08 ¢/lb.	**+ $ 845** market gain *($0.0169 gain x 50,000 lbs.)*	**- $ 845** market gain *($0.0169 loss x 50,000 lbs.)* = **$ 835** account total **+ $ 365** margin call to bring acct. up to $1,200 (maintenance margin level)
		= **$2,045** acct. total	= **$1,200** acct. total after margin call.
Day 3	48.44 ¢/lb.	**+ $ 320** market gain *($0.0064 gain x 50,000 lbs.)*	**- $ 320** market loss *($0.0064 loss x 50,000 lbs.)* = **$ 880** account total **+ $ 320** margin call to bring acct. up to $1,200 (maintenance margin level)
		= **$2,365** account total	= **$1,200** acct. total after margin call
Day 4	51.44 ¢/lb.	**- $1,500** market loss *($0.03 loss x 50,000 lbs.)* **= $ 865** account total **+ $ 335** margin call to bring acct. up to $1,200 (maintenance margin level). = **$1,200** acct. total after margin call.	**+ $1,500** market gain *($0.03 gain x 50,000 lbs.)* = **$2,700** acct. total

From the Margin Example Scenario presented above, it can be seen that a hedger sold one cotton futures contract to a speculator for 50.77 cents per pound. The following day, the price decreased to 49.08 cents per pound. The price decrease resulted in a withdrawal of $845 from the speculator's margin account and was deposited into the hedger's account. The speculator's margin account balance then equaled $365. Since the account balance was lower than the required maintenance margin ($1,200), the speculator received a margin call. An additional $365 was deposited into the speculator's margin account to bring the account balance up to the $1,200 maintenance margin level. The following day (Day 3), the price

again fell to 48.44 cents per pound. Again, a withdraw was made ($320) from the speculator's margin account and was deposited into the hedger's account. The speculator received another margin call equaling $320 that was deposited into the margin account. The forth day, the price rose to 51.44 cents per pound. This resulted a $1,500 withdraw from the hedger's margin account and deposited into the speculator's account. The hedger then received a margin call in the amount of $325. This margin call brought the hedger's margin account back up to the required maintenance margin level.

The Role of Local Basis in Futures Market Hedging

As mentioned earlier, basis is the difference between the local cash price of a commodity and the price of a specific futures contract of the same commodity at any given point in time. Therefore basis is determined by the following:

Basis = Local Cash Price – Futures Price

The local basis changes as the factors affecting cash and/or futures markets change. Strengthening and weakening are two terms used to describe a changing basis. The local basis is said to be strengthening if basis becomes more positive or less negative. If basis becomes less positive or more negative, the basis is said to be weakening. An example of scenarios when basis is strengthening and weakening is presented in Table 6.

Table 6. Examples of strengthening and weakening local basis.

Date	Local Cash Cotton Price (Cents/lb.)	-	December Cotton Futures Price (Cents/lb.)	=	Local Basis (Cents/lb.)	Basis Strengthening or Weakening	Why the Basis Strengthened or Weakened
May 1	75.00	-	73.00	=	+ 2.00	Strengthening	Local cash price decreased by 10 cents while futures decreased by 9 cents.
June 1	65.00	-	62.00	=	+ 3.00		
June 1	65.00	-	62.00	=	+ 3.00	Weakening	Local cash price increased by 5 cents while futures increased by 6 cents.
July 1	70.00	-	68.00	=	+ 2.00		
July 1	70.00	-	68.00	=	+ 2.00	Weakening	Local cash price increased by 5 cents while futures increased by 11 cents.
Aug 1	75.00	-	79.00	=	- 4.00		
Aug 1	75.00	-	79.00	=	- 4.00	Strengthening	Local cash price increased by 3 cents while futures increased by 1 cent.
Sept 1	78.00	-	80.00	=	- 2.00		
Sept 1	78.00	-	80.00	=	- 2.00	No Change	Local cash price and futures decreased by 3 cents.
Oct 1	75.00	-	77.00	=	- 2.00		

Basis can be viewed as "localizing" a futures market price. Since the cotton futures market price represents the world price for cotton, it can be used as a benchmark in determining the value of cotton at the local level. This benchmark becomes vital in determining the acceptability of a futures market hedge. As shown in Example Scenario 1: Price Decrease and Example Scenario 2: Price Increase, knowledge and a correct estimate of local basis allows those wishing to hedge cotton price risk to accurately calculate the hedge outcome. While its estimation may seem to be an easy task, several factors can potentially influence the local basis. Since these factors vary depending on location, basis will also vary from one location to the next. These factors include:

- Transportation costs
- Local supply and demand conditions, such as cotton quality, availability, need, local weather
- Interest/storage costs
- Handling costs and profit margins

Those in the cotton industry should track two pieces of basis information weekly at all potential local outlets. First is the relationship of the current cash price to the nearby futures contract (the nearby futures contract refers to the contract that is closest to expiration). This provides estimates of basis for delivery of grain during any time of the year and can be used in evaluating storage decisions. The second piece of basis information that should be recorded by producers is the basis level at the time of harvest. This basis information will assist in determining whether a futures hedge is a favorable alternative or not.

Basis Risk

If a producer hedges cotton price risk through the use of a futures market contract, there still remains the chance that basis will vary from what is estimated. This uncertainty about the basis at the time a hedge may be lifted is referred to as *Basis Risk*. By placing a hedge using the futures market, cotton producers are substituting basis risk for price risk. Table 7 illustrates the importance of correctly estimating the basis at the time the hedge will be lifted.

Table 7. Differences in outcomes when basis is correctly and incorrectly estimated.

Relevant Information

Date =	May
Cotton Harvest & Sales Date =	December
Break-Even Price =	68 Cents Per Pound
Estimated Production =	1,000 bales
Hedge Percentage =	50 percent of production
Number of Contracts Needed =	5 Contracts ([1,000 bales x 50%]/100 bales per contract)
Futures Contract to Consider =	December Cotton Futures Contract
Current December Futures Price =	75.50 Cents Per Pound
Estimated Local December Basis =	- 1.74 Cents Per Pound

Basis is Correctly Estimated				**Basis is Incorrectly Estimated**			
Futures Market Positions		Cash Market Positions		Futures Market Positions		Cash Market Positions	
May	Sell 5 Dec. Cotton Futures at 75.50 ¢/lb.	Obj	Realize 73.76 ¢/lb for 50% of total estimated production	May	Sell 5 Dec. Cotton Futures at 75.50 ¢/lb.	Obj	Realize 73.76 ¢/lb for 50% of total estimated production
Dec	Buy 5 December Cotton Futures at 59.25 ¢/lb.		Sell Cash Cotton for 57.51 ¢/lb.	Dec	Buy 5 December Cotton Futures at 59.25 ¢/lb.		Sell Cash Cotton for 54.51 ¢/lb.
Actual Local Dec. Basis: - 1.74 ¢/lb.				Actual Local Dec. Basis: - 4.74 ¢/lb.			
Results:				Results:			
Local Cash Price		57.51 ¢/lb.		Local Cash Price		54.51 ¢/lb.	
Futures Profit		+ 16.25 ¢/lb.		Futures Profit		+ 16.25 ¢/lb.	
Realized Price**		73.76 ¢/lb.*		Realized Price**		70.76 ¢/lb.*	

* Less commission and interest costs.
** Realized price for 50 percent of production.

The example presented in Table 7 demonstrates the risk that producers still face in terms of basis risk when a futures hedge is made. In the case where basis was correctly estimated, the objective of realizing 73.76 cents per pound of cotton was achieved. In the second case where basis was not correctly estimated, the objective was not realized. In fact, the realized price was three cents lower per pound than the objective.

While an exact estimate of basis is often difficult to accomplish, anyone wishing to use the futures market to hedge price risk should attempt to estimate the local cash price relative to

the futures price and understand basis risk. The producer is trading price risk for basis risk when a futures contract is sold.

Worksheets are provided in the Appendix to assist in tracking local basis.

How To Get Started Trading Futures Contracts?

To begin trading futures contracts, only a few steps must be completed. The information presented below gives a step-by-step explanation of what is required to trade futures contracts.

Step 1 Choose a futures broker. A futures broker may or may not also be a stock broker. Participants in the futures market may also choose to use an online trading service.

Step 2 Enter into an agreement with the broker and set up an account. An initial margin must be deposited into the account.

Step 3 Make a trade. Call the broker and indicate whether you would like to either buy or sell one or more futures contracts. The broker will then contact the commodity exchange. The order will be taken to the trading floor where the transaction will be completed. The order confirmation will then be sent back to you.

Special Note: The broker will charge you a commission for making the transaction. These commission charges vary by brokerage firm and even by the level of service you receive.

There are Different Types of Orders. You Need to Know Them All

When buying or selling futures contracts (placing an order), you will typically call or visit your brokers office. Before you place your first order, however, you must determine whether you wish to place any price, time, or other restrictions on the order. Understanding that there are several different ways which you buy or sell futures contracts is vital. Below is a discussion of a few of the different ways you can place an order. While discussed independently, several of the orders can be combined.

Market Order

You will use a market order if you do not want to place any restrictions on the purchase or sell of a futures contract. This is the most common type of order and tells your broker to buy or sell the contract(s) at whatever price is currently trading. For example you may tell your broker:

"Sell 5 New York Board of Trade December cotton futures contracts at the market."

This tells the broker which side (long or short) of the market you wish to be on, the number of contracts, exchange, delivery month, and contract(s). Also, it tells your broker you want the order to be filled immediately. You want to sell at the going price, no matter what the current price is.

Placing this type of order does have its risks. First, you could get a "bad fill". A "bad fill" occurs at the fringe of the trading range (either the highest or lowest price traded during the day. "Bad fills" generally occur during days with low volume. Secondly, the position could begin losing money immediately. Since there are no restrictions on market orders, they take top priority in the trading pits, and they are filled before any other orders. In fast-moving markets, the order could be filled within minutes. Once in the market, you have no guarantee it will move in a favorable direction.

Points to Remember – Market Orders

- *Market orders get you in the market fast*
- *You may get a "bad fill" with a market order*
- *The market may more immediately against your position.*

Market on Open and Market on Close

Time restrictions can also be placed your order to buy or sell futures contracts. These restrictions may be "Market on Open" or "Market on Close". Market on Open orders mean that the order will be traded at the beginning of a trading session. Most exchanges designate the first 15 minutes as the "opening". An opening trading range is established and your order will be filled within this range if there is enough volume. If for any reason, your order cannot be filled during the opening period, it is automatically cancelled. You will be notified that the order was "unable". If you still desire to enter the market, you must reenter your order with the broker.

Market on Close orders work the same as Market on Open except they are designated to be traded during the last five minutes of a trading session. If for any reason your Market on Close order did not get filled, you would be notified. Since these orders are placed on the close of trading for the day, you will not have a second chance to reenter an order on that day. You must wait for the next trading session.

Market on Open and Market on Close orders become market orders during the opening and closing periods, respectively. This means they have top priority from the floor brokers and are normally filled without any problems.

Points to Remember – Market on Open & Market on Close Orders

- *Market on Open orders are filled when the market opens.*
- *If the Market on Open order is not filled, you have to reenter your order.*
- *Market on close orders are filled at the end of the trading session.*
- *If the Market on Close order is not filled, you have to reenter your order.*

Day, Good Until Cancelled, & Good Through Orders

There are also other time restrictions you can place on a futures market contract order. Specifically, you can place a Day, Good Until Cancelled, or Good Through Order. If you wish to place an order that will be executed only that day or during a single trading session, you will place a Day Order. At the end of the trading session, the order is either filled or it is cancelled. If there are two trading sessions of the commodity being traded, a Day Order will not carry over to the evening session on most exchanges.

A Good Until Cancelled Order is another type of order with time restrictions. With this type of order, it stays in the market until it is either filled or you cancel it. Most exchanges will not accept Good Until Cancelled Orders, but you can have your broker put your order in each day until you get it filled. A variation of a Good Until Cancelled Order is the Good Through Order. A Good Through Order may be a good through a week, month or any other specified time during a trading session.

Points to Remember – Day, Good Until Cancelled, & Good Through Orders

- *Day Orders are either filled during a specific day's session or cancelled.*
- *If a Day Order is cancelled, you will have to reenter your order.*
- *Good Until Cancelled Orders are valid until they are filled or cancelled.*
- *Good Until Cancelled Orders are not allowed on most exchanges.*
- *Good Until Orders can be for a week, month, or any other specified time.*

Price Limit Orders

Price limits Orders put price restrictions on the price a floor broker can bid or accept on your behalf. The simplest restriction is the *Limit Order*. A limit order is used to specify a certain price level that an order should be filled. For example, a sell limit order can only be filled at the limit price you specify or higher. A buy limit order can only be filled at the limit price or lower. An example of a short price limit order would be:

"Sell 5 December New York Board of Trade cotton futures contracts at the limit price of 70.00 cents per pound."

This would instruct your broker to sell 5 December cotton futures contracts at 70 cents per pound or higher.

While Price Limit Orders are valuable when attempting to get what you consider a good price, they do have their drawbacks. First, any order with any type of restriction takes a lower priority than a market order. Second, the restrictions, (limits) you place on the order may prevent it from being filled. For instance, given the example order placed above, the price may only reach 69.95 cents per pound. In this situation, the order will not be filled.

Points to Remember – Price Limit Orders

- *Price Limit Orders place restrictions on the fill price of the order.*
- *Price Limit Orders take lower priority to Market Orders.*
- *Price Limit Orders may not get filled.*

Stop Orders

The Stop Order is a variation of the Limit Order and are generally used by traders to manage losses. If you have ***sold*** cotton futures, you can place a Stop Order ***at a higher price*** than where you sold. If the price increases to or above the price specified by the Stop Order, the Stop Order immediately becomes a Market Order. For example, let's assume you sold 5 December cotton futures contracts at 70.00 cents per pound with a Stop Order at 75.00 cents per pound. If the price reaches 75.00 cents per pound, the Stop Order immediately becomes a market order to buy 5 cotton futures market contracts back.

Another way in which Stop Orders can be used is in taking profits. For example, assume you sold 5 December cotton futures market contracts at 70.00 cents per pound with a Stop Order at 55.00 cents per pound. If the December futures price decreases to 55.00 cents per pound, the Stop Order immediately becomes a Market Order to buy 5 December cotton futures contracts.

Stop Orders are used by those in the market who: do not want to watch trading activity every day; want to prevent large losses due to large futures market price swings; or want to take profits if they are made in the futures market.

Points to Remember – Stop Orders

- *Stop Orders are a variation of Limit Orders.*
- *Stop Orders are often used to manage losses.*
- *Stop Orders can also be used to take profits if they are made.*

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APPENDIX

Cotton No. 2 Futures Contract Specifications

New York Board of Trade
Contract specifications are current as of 5/26/04
and may be subject to change. Verify information with your broker.

Trading Hours
10:30 a.m. to 2:15 p.m.; closing period commences at 2:14 p.m.

Ticket Symbol
CT

Trading Months
Current month plus one or more of the next 23 succeeding months. Active trading months: March, May, July, October, December.

Price Quotation
Prices are quoted in cents and hundredths of a cent per pound.

Minimum Price Fluctuation
1/100 of a cent (one "point") per pound below 95 cents per pound. 5/100 of a cent (or five "points") per pound at prices of 95 cents per pound or higher. *N.B.: Spreads may always trade and be quoted in one point increments, regardless of price levels.

Point Value
$5.00

Daily Limit on Price Movement
3 cents above or below previous day's settlement price. However, if an contract month settles at or above $1.10 per pound, all contract months will trade with 4 cent price limits. Should no month settle at or above $1.10 per pound, price limits stay (or revert) to 3 cents per pound. Spot month – no limit on or after first notice day.

Last Trading Day
Seventeen business days from the end of spot month.

Position Limits

Delivery Month	300 contracts
Any other month	2,500 contracts
All months combined	3.500 contracts

Contact the Exchange for more information on other specifications.

Margin and Maintenance Margin

	Hedger	Speculator
Initial Margin	$1,200 per contract	$1,680
Maintenance Margin	$1,200 per contract	$1,200 per contract

Exercise Worksheets

Answers to the exercises can be found on page 32.

Worksheet Exercise #1

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 64 cents per pound. It is currently May and it is estimated that 800 bales of cotton will be harvested in December. The producer would like to hedge price risk for 50 percent of the estimated production. The current harvest futures contract is trading at 68.75 cents per pound. The estimated local harvest basis is 2.00 cents per pound less than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	
Cotton Harvest & Sales Date	
Break-Even Price	
Estimated Production	
Number of Contracts Needed	
Futures Contract to Consider	
Current Futures Price	
Estimated Local Harvest Time Basis	
Futures Price at Harvest	58.25 ¢/lb

Futures Market Positions	**Cash Market Positions**
May:	Objective:
December:	December:

Actual Local Harvest Basis:

Results:

Local Cash Cotton Price		¢/lb
Futures Profit (75.50 – 59.25)	+/-	¢/lb
Realized Price**		¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Worksheet Exercise #2

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 68 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested in December. The producer would like to hedge price risk for 40 percent of the estimated production. The current harvest futures contract is trading at 78.00 cents per pound. The estimated local harvest basis is 1.00 cent per pound more than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	
Cotton Harvest & Sales Date	
Break-Even Price	
Estimated Production	
Number of Contracts Needed	
Futures Contract to Consider	
Current Futures Price	
Estimated Local Harvest Time Basis	
Futures Price at Harvest	75.00 ¢/lb

Futures Market Positions	**Cash Market Positions**
May:	Objective:
December:	December:

Actual Local Harvest Basis:

Results:

Local Cash Cotton Price		¢/lb
Futures Profit (75.50 – 59.25)	+/-	¢/lb
Realized Price**		¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Worksheet Exercise #3

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 65 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested on November 28. The producer would like to hedge price risk for 50 percent of the estimated production. The current harvest futures contract is trading at 71.00 cents per pound. The estimated local harvest basis is 1.00 cent per pound more than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	
Cotton Harvest & Sales Date	
Break-Even Price	
Estimated Production	
Number of Contracts Needed	
Futures Contract to Consider	
Current Futures Price	
Estimated Local Harvest Time Basis	
Futures Price at Harvest	75.50 ¢/lb

Futures Market Positions	**Cash Market Positions**
May:	Objective:
December:	December:

Actual Local Harvest Basis:

Results:

Local Cash Cotton Price		¢/lb
Futures Profit (75.50 – 59.25)	+/-	¢/lb
Realized Price**		¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Worksheet Exercise #1 Answers

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 64 cents per pound. It is currently May and it is estimated that 800 bales of cotton will be harvested in December. The producer would like to hedge price risk for 50 percent of the estimated production. The current harvest futures contract is trading at 68.75 cents per pound. The estimated local harvest basis is 2.00 cents per pound less than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	May
Cotton Harvest & Sales Date	December
Break-Even Price	64 cents per pound
Estimated Production	800 bales
Number of Contracts Needed	4 Contracts ([800 bales x 50%]/100 bales per contract)
Futures Contract to Consider	December
Current Futures Price	68.75 ¢/lb
Estimated Local Harvest Time Basis	- 2.00 ¢/lb
Futures Price at Harvest	58.25 ¢/lb

Futures Market Positions		Cash Market Positions	
May:	Sell 4 Dec. Cotton Futures Contracts at 68.75 ¢/lb.	Objective:	Realize 66.75 ¢/lb on 50% of total estimated production.
December:	Buy 4 Dec. Cotton Futures at 58.25 ¢/lb.	December:	Sell Cash Cotton for 56.25 ¢/lb.

Actual Local Harvest Basis: - 2.00 cents per pound

Results:

Local Cash Cotton Price		56.25	¢/lb
Futures Profit (75.50 – 59.25)	+/-	+ 10.50	¢/lb
Realized Price**		66.75	¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Worksheet Exercise #2

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 68 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested in December. The producer would like to hedge price risk for 40 percent of the estimated production. The current harvest futures contract is trading at 78.00 cents per pound. The estimated local harvest basis is 1.00 cent per pound more than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	May
Cotton Harvest & Sales Date	December
Break-Even Price	68 cents per pound
Estimated Production	1,000 bales
Number of Contracts Needed	4 Contracts ([1,000 bales x 40%]/100 bales per contract)
Futures Contract to Consider	December
Current Futures Price	78.00 ¢/lb
Estimated Local Harvest Time Basis	+ 1.00 ¢/lb
Futures Price at Harvest	75.00 ¢/lb

Futures Market Positions		Cash Market Positions	
May:	Sell 4 Dec. Cotton Futures Contracts at 78.00 ¢/lb.	Objective:	Realize 79.00 ¢/lb on 40% of total estimated production.
December:	Buy 4 Dec. Cotton Futures at 75.00 ¢/lb.	December:	Sell Cash Cotton for 76.00 ¢/lb.

Actual Local Harvest Basis: + 1.00 ¢/lb.

Results:

Local Cash Cotton Price		76.00	¢/lb
Futures Profit (75.50 – 59.25)	+/-	+ 3.00	¢/lb
Realized Price**		79.00	¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Worksheet Exercise #3

Let us assume that a producer has estimated a break-even price (price required to cover all costs of production) of 65 cents per pound. It is currently May and it is estimated that 1,000 bales of cotton will be harvested on November 28. The producer would like to hedge price risk for 50 percent of the estimated production. The current harvest futures contract is trading at 71.00 cents per pound. The estimated local harvest basis is 1.00 cent per pound more than the corresponding harvest futures price. *(Note: It is assumed that basis at harvest will equal estimated basis).*

Relevant Information

Date	May
Cotton Harvest & Sales Date	November 28
Break-Even Price	68 cents per pound
Estimated Production	1,000 bales
Number of Contracts Needed	5 Contracts ([1,000 bales x 50%]/100 bales per contract)
Futures Contract to Consider	December
Current Futures Price	71.00 ¢/lb
Estimated Local Harvest Time Basis	+ 1.00 ¢/lb
Futures Price at Harvest	75.50 ¢/lb

Futures Market Positions		Cash Market Positions	
May:	Sell 5 Dec. Cotton Futures Contracts at 71.00 ¢/lb.	Objective:	Realize 72.00 ¢/lb on 50% of total estimated production.
December:	Buy 5 Dec. Cotton Futures at 75.50 ¢/lb.	December:	Sell Cash Cotton for 76.50 ¢/lb.

Actual Local Harvest Basis: + 1.00 ¢/lb.

Results:

Local Cash Cotton Price		76.50	¢/lb
Futures Profit (75.50 – 59.25)	+/-	- 4.50	¢/lb
Realized Price**		72.00	¢/lb*

* Less commission and interest costs.

** Realized price for 50 percent of production.

Local Cotton Basis at Harvest Worksheet

Date	Local Harvest Cash Price		Harvest Futures Price		Basis
Example: November 18, 2004	47.25 ¢/lb.	-	48.50 ¢/lb.	=	- 1.25 ¢/lb.

Local Cotton Continuous Basis Worksheet

Date	Current Local Cash Price		Nearby Futures Price		Basis
Example: April 23, 2004	63.25 ¢/lb.	-	63.95 ¢/lb. (May 2004 Futures)	=	- 0.70 ¢/lb.

Glossary

A

Actuals - The physical or cash commodity, as distinguished from a futures contract.

Arbitrage - Simultaneous purchase of cash commodities or futures in one market against the sale of cash commodities or futures in a different market, to profit from a discrepancy in prices. In some definitions, arbitrage refers only to riskless transactions in which the entire investment is made with borrowed funds.

Ask - Also called Aoffer@. Indicates a willingness to sell a futures contract at a given price. (See bid).

At-The-Market - An order to buy or sell a futures contract at whatever price is obtainable when the order reaches the trading floor. Also called a Market Order.

B

Back Months - The futures months being traded that are furthest from expiration.

Back Testing - Optimizing a trading strategy on historical data and applying it to fresh data to see how well the strategy works.

Backwardation - Market situation in which futures prices are progressively lower in the distant delivery months. The opposite of contango, or carrying-charge, market.

Bar Chart - The most popular technical tool whereby each day (week, month or year) is represented by a single vertical bar on a chart. The bottom of the bar represents the low price, whereas the top of the bar represents the high price for the time period. A tick mark on the left side of the bar represents the opening price, while a mark on the right indicates the closing or settlement price. Trader examine the bar chart on a regular basis to identify particular patterns, which may help predict future price direction.

Basis - The difference between the spot or cash price of a commodity, security, currency or index and the futures price of the same or related underlying item. Basis is usually computed to the nearby future and may represent different time periods, product forms, grades and locations depending upon the cash and futures prices used.

Basis Contract - A cash marketing alternative whereby the buyer and seller agree upon the basis of the contract. Price is tied to a predetermined basis and the remaining component of the price (as tied to the futures market) can be priced anytime prior to when the contract is satisfied by delivery. This type of cash contract eliminates basis risk but still has price risk.

Basis Grade - The grade of a commodity used as the standard of the futures contract.

Basis Risk - The risk associated with not being able to predict the basis accurately. Because futures and cash prices tend to move together over time, basis risk is usually less than price risk.

Bear - One who believes prices will move lower.

Bear Market - A market in which prices are declining.

Bear Spread - Short the nearby future and long the deferred, in anticipation of a decline in the general level of prices, with the nearby future expected to decline more than the deferred contract.

Bear Trap - A false signal which indicates that a rising trend has reversed when in fact it has not.

Bid - An offer to buy at a stated price. Broker - A person who is paid a fee or commission for executing orders. In futures trading, the term may refer to: (1) a floor broker, i.e., an exchange member who executes orders on the trading floor of an exchange; (2) an account executive or associated person who deals with customers for a futures commission merchant or introducing broker; and (3) a futures commission merchant.

Broker - Someone who executes transactions on an agency basis for a commission or fee.

Bull - One who expects a rise in prices. The opposite of a "bear".

Bull Market - A market in which prices are rising.

Bull Spread - Long the nearby future and short the deferred in anticipation of an increase in the general level of prices, with the nearby future expected to increase more than the deferred contract.

Bull Trap - A false signal generated which indicates that the price of a commodity has reversed to an upward trend but proves to be false.

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.

Buying Hedge (or Long Hedge) - Hedging transaction in which futures contracts are bought to protect a short cash market position against possible increases in the prices of commodities, securities, indexes or currencies.

C

Carrying Charges - Cost to inventory a physical commodity or financial instrument over a period of time. Includes insurance, storage and interest on the invested funds as well as other incidental costs.

Cash Forward Contract -A legal agreement to deliver a fixed quantity and quality of a commodity, at a specified price to a designated location. This removes all price risk.

Cash Commodity - The physical or actual commodity as distinguished from the futures contract. Sometimes called the spot commodity or actuals.

Cash Price - The price for actual or spot commodities available via customary marketing channels.

Cash Settlement - A method of settling certain futures or option contracts whereby the seller (or short) pays the buyer (or long) the cash value of the commodity traded according to a procedure specified in the contract.

Clearing - The procedure through which the clearinghouse becomes the buyer to each seller of a futures contract and the seller to each buyer and assumes responsibility for the financial integrity of each open contract.

Clearing House - An adjunct to a futures exchange through which transactions executed on the floor of the exchange are matched, settled and guaranteed. Charged with assuring the adequate financial protection of trading through collection and payment of margin and the proper conduct of the exchange's delivery procedures.

Clearing Member - A member of a clearinghouse through whom all trades must be settled.

Close - The period at the end of the trading session. Sometimes used to refer to the closing range.

Closing Range (Range) - The high and low prices, or bids and offers, recorded during the period designated as the official close. (See also Settlement Price).

Commercial - An entity involved in the production, processing, or merchandising of a commodity.

Commission - (1) The charge made by a futures commission merchant or introducing broker for handling futures and options orders; (2) the Commodity Futures Trading Commission.

Commodity Futures Trading Commission (CFTC) - The federal regulatory agency established in 1975 to administer the Commodity Exchange Act.

Commodity Pool - An enterprise in which funds contributed by a number of persons are combined for the purpose of trading futures or options on futures.

Commodity Pool Operator (CPO) - An individual or firm, required to be registered under the Commodity Exchange Act, who solicits funds, securities or property for a commodity pool.

Commodity Trading Advisor (CTA) - An individual or firm who, for pay, trades accounts for individual clients or for commodity pools and/or who provides analysis, reports or advice concerning futures and options trading.

Contango - Market situation in which prices are progressively higher in the succeeding delivery months than in the nearest delivery month. Also termed carrying charge; opposite of backwardation.

Contract - Unit of trading for a financial or commodity future. Also, actual bilateral agreement between the parties (buyer and seller) of a futures transaction as defined by an exchange.
Contract Grades - Grades and standards specified in the rules of an exchange, which must be met to deliver against the futures contract. These apply to grain futures and in many instances grain meeting different grades and/or quality standards can be delivered at a premium or a discount.

Contract Month - The month for which futures contracts may be satisfied by making or accepting delivery. (See also Delivery Month).

Crop Year - See Marketing Year

Cover - (1) To offset an existing futures position; (2) to have in hand the physical commodity or other asset underlying a futures contract when a short futures position is taken; or (3) to acquire the commodity to be delivered on a short futures position.

D

Daily Range - The difference between the high and low price during one trading day.

Day Order - Instructions which a trader gives a broker that will expire at the end of the day if they are not executed.

Day Trader - A futures trader who initiates and closes his/her position on the same day.

Day-Trading - Establishing a futures position and offsetting it the same day.

Deferred Futures - The futures delivery months, of those currently trading, that expire farthest in the future; also called forward months.

Deferred Pricing Contract - A cash market contract whereby the buyer and seller agree to exchange a commodity at a specific date in the future and a price will be established at some point prior to delivery.

Delivery - The tender and receipt of an actual commodity or financial instrument, or cash in settlement of a futures contract.

Delivery Month - The specified month within which a futures contract matures and can be settled by delivery.

Discount - (1) The amount a price would be reduced to purchase a commodity of lesser grade; (2) price differences between futures of different delivery months; (3) cash prices below the futures price.

Discretionary Account - An arrangement by which the holder of a futures or futures options account gives written power of attorney to someone else, often the broker, to buy and sell futures and/or futures options without the holder's prior approval.

Drawdown - The reduction in account equity from a trade or a series of trades.

Dual Trader - An exchange member who trades for his or her own account as well as executes customer orders.

E

Equity - The residual dollar value of a futures account if it were liquidated at current prices.

Export Inspections - A weekly report issued by USDA stating the amount of grain and oilseed products that have been inspected for exports from US ports to foreign destinations.

F

Fill or Kill Order - A trading order which demands immediate execution otherwise it is automatically canceled.

First Notice Day - The first day a buyer of a futures contract can be called upon to take delivery.

Floor Broker - A person, registered with the National Futures Association, who buys and sells futures contracts for others on the exchange trading floor.

Floor Trader - An exchange member, sometimes called a "local," who executes trades for his or her own account in the futures pit or ring. Floor traders must be registered with the National Futures Association.

Forward Contract - A cash market contract which sets the terms and conditions of exchanging a commodity, whereby the buyer and seller agree upon the price when the contract is initiated. The contract is settled by delivery.

Forward Market - Non-exchange trading of commodities or other assets to be delivered at a future date. Contracts for forward delivery are "tailored", i.e., delivery time, location and amount are determined between each seller and buyer and generally involve marketing, merchandising and delivery.

Futures - A term used to designate all contracts covering the purchase and sale of financial instruments or physical commodities for future delivery on a commodity futures exchange.

Futures Contract - A contract, traded on a futures exchange, for the delivery of a specified commodity. The contract specifies the terms and conditions of delivery, but can be offset prior to delivery by taking an opposition position.

G

Good Till Canceled Order - Instructions which a trader gives a broker, that remain in effect until the order is either executed or canceled.

H

Hedge - The purchase or sale of a futures contract as a temporary substitute for a cash transaction to be made at a later date. Usually it involves opposite positions in the cash market and futures market at the same time. (See also Long Hedge, Short Hedge).

Hedger – Futures market participants who either own or will own the physical commodity and use the futures market to protect against adverse price movements.

Hedging - Taking a position in a futures market opposite to a position held in the cash market to minimize the risk of an adverse price change; a purchase or sale of a futures contract as a temporary substitute for a cash transaction that will occur later.

Hedge Ratio - The number of futures contracts needed to hedge a cash market position.

I

Initial Margin - Customers' funds put up as security to guarantee contract fulfillment at the time a futures or options position is established. Intrinsic value - For a call option, the excess of the current market price of the asset or futures contract underlying the option over the strike price of the option; for a put option, the excess of the strike price over the current market price of the asset or futures contract underlying the option.

Initial Performance Bond - The funds required when a futures position (or a short options on futures position) is opened. Also known as the Initial Margin.

Intermarket Spread - A spread using futures contracts in one market spread against contracts in another market. An example would be Kansas City Wheat against Chicago Wheat.

Introducing Broker - Any person, other than someone registered as an associated person of a futures commission merchant, who solicits or accepts futures and related options orders but does not accept money from customers.

Inverted Market - A futures market in which the nearer months are selling at prices higher than the more distant month; characteristic of markets in which supplies are currently in shortage or the yield on the underlying asset exceeds the cost of carrying that asset. Also termed backwardation.

L

Life Of Contract - The period of time from the first to the last trading day for a particular futures contract.

Limit Move - A price that has advanced or declined the permissible amount during one trading session, as fixed by the rules of an exchange.

Limit Order - An order given to a broker by a customer that specifies a price; the order can be executed only if the market reaches or betters that price.

Limit Price - See Maximum Price Fluctuation.

Liquidation - (1) Offsetting or closing out a futures position; (2) a market in which open interest is declining.

Liquidity - A market in which selling and buying can be accomplished with minimal price change.

Local - A futures trader in the pit of a commodity exchange who buys and sells for his/her own account.

Long - (1) One who has bought a futures or options contract to establish a market position; (2) a market position that obligates the holder to take delivery; (3) one who owns an inventory of commodities or securities.

Long Hedge - The purchase of a futures contract in anticipation of an actual purchase in the cash market. Used by processors or exporters as protection against an advance in the cash price. (See also Hedge, Short Hedge).

M

Maintenance Performance Bond - Also known as Maintenance Margin. A sum, usually smaller than - - but part of - - the initial performance bond, which must be maintained on deposit in the customer=s account at all times. If a customer=s equity in any futures position drops to, or under, the maintenance performance bond level, a Aperformance bond call@ is issued for the amount of money required to restore the customer=s equity in the account to the initial margin level.

Margin - The amount of money or collateral deposited by a client with a broker, or by a clearing member with the clearinghouse, as required by the exchange and/or clearinghouse for open futures positions. Initial margin is the total amount of margin per contract required by the broker when a futures position is opened by a customer; maintenance margin is the minimum amount of money per contract that must be maintained on deposit at all times the position is open.

Margin Call - (1) A request from a brokerage firm to a customer to bring margin deposits back to initial levels, normally because of losses resulting from an adverse price move; (2) a request by a clearing house to a clearing member to make payments to or increase deposits at the clearinghouse.

Market-If-Touched (M.I.T.) - A price order that automatically becomes a market order if the price is reached.

Mark-To-Market - The daily adjustment of margin accounts to reflect profits and losses.

Market Order - An order for immediate execution given to a broker to buy or sell at the best obtainable price.

Market Not Held Order - A market order where the investor is giving the floor trader the discretion to execute the order when he/she feels it is best. If the floor trader feels that the market will decline, he/she may hold the order to try to get a better price. This order may not get filled.

Maturity - The period of time in a futures contract=s life in which the seller can make physical delivery, and the buyer can take physical delivery of the cash grain.

Maximum Price Fluctuation - The maximum amount the contract price can change, up or down, during one trading session, as stipulated by Exchange rules.

Minimum Price Fluctuation - Smallest price change possible in a futures or options contract. Also called the tick value.

N

Nearby Futures - The futures contract(s) closest to expiration.

Notice Day - The day on which a "notice of intention of delivery" can be issued for a specific futures contract.

O

Offer - An indication of willingness to sell at a given price; opposite of bid.

Offset - (1) Liquidating a purchase of futures or options through the sale of an equal number of contracts of the same delivery month, or liquidating a sale of futures or options through the purchase of an equal number of contracts of the same delivery month; (2) matching total long with total short contracts for the purpose of determining a net long or net short position; (3) non-competitively matching one customer's order with another, a practice that is permissible only when executed in accordance with the Commodity Exchange Act, CFTC regulations and rules of the futures exchange.

Omnibus Account - An account carried by one futures commission merchant with another futures commission merchant in which the transactions of two or more accounts are combined and carried in the name of the originating FCM rather than designated separately.

Open Interest - All futures or options contracts that have been entered into and not yet liquidated by an offsetting transaction or by delivery. In general, a price move in futures will not be sustained unless the open interest starts to increase. This is especially true of Abull@ or upward trending markets.

Open Order - An order to a broker that is good until it is canceled or executed. See also Good Till Canceled Order.

Opening, The - The period at the beginning of the trading session during which all transactions are considered made or first transactions were completed.

Open Price (Or Range) - The range of prices at which the first bids and offers were made or first transactions were completed.

Original Margin - The deposit the clearinghouse requires of clearing members when futures contracts are presented for clearance; parallel to the initial margin required of customers by exchanges and collected by FCMs when futures positions are originated.

Out-Trades - A situation that results when there is some confusion or error on a trade. A difference in pricing, with both traders thinking they were buying, for example, is a reason why an Out-Trade may occur.

P

Performance Bond - Funds that must be deposited as a performance bond by a customer with his/her broker, by a broker with a clearing member, or by a clearing member, with the Clearing House. The performance bond helps to ensure the financial integrity of brokers, clearing members and the Exchange as a whole.

Performance Bond Call - A demand for additional funds because of adverse price movement.

Pit - A specially constructed arena on the trading floor where futures and options trading is conducted.

Point - The minimum price fluctuation allowed for a particular type of futures contract.

Position - An interest in the market, either long, or short, in the form of open contracts.

Position Limit - The maximum position, either net long or net short, in a futures market, an options market or in a futures and its related options market combined, that may be held or controlled by one person as prescribed by an exchange or the CFTC. Such limits can be set for individual expiration months and for all listed expiration months combined. Because hedgers often are exempt from these limits, they often are termed "speculative limits".

Position Trader -A futures trader who buys or sells contracts and holds them for an extended period of time - as distinguished from a day trader, who normally initiates and offsets futures positions within a single trading session and ends the day "flat".

Price Risk - The risk associated with not being able to predict price accurately. Price risk is greater than basis risk.

R

Rally - An upward movement of prices following a decline; the opposite of a reaction.

Range - The high and low prices or high an low bids and offers, recorded during a specified time.

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

Rollover - (1) A trading procedure involving the shift of one delivery month of a spread into another month while holding the other delivery month. The shift can take place in either the long or short month. (2) Lifting a futures position that is not part of a spread and simultaneously re-establishing it in a deferred delivery month.

Round Turn - A completed transaction involving both a purchase and a sale.

S

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

Scalper - A speculator on the trading floor of an exchange who buys and sells frequently, holding positions for only a short period of time during a trading session. In liquid markets, scalpers stand ready to buy at the minimum price change (tick) below the last transaction price and to sell at a tick above.

Selling Hedge (or Short Hedge) - Selling futures contracts against a long cash market position to protect against a decrease in the price of a commodity, security, currency or index.

Settlement Price - The price at which the clearinghouse each day settles all accounts between clearing members for each open position in each contract month of each futures and options contract. Settlement prices are used to determine both margin calls and invoice prices for deliveries.

Short - (1) The selling side of an open futures contract; (2) a trader whose net position in the futures market shows an excess of open sales over open purchases; (3) selling (granting) an options contract.

Short-Covering - Buying to offset an existing short position.

Short Hedge - The sale of a futures contract in anticipation of a later cash market sale. Used to eliminate or lessen the possible decline in value of ownership of an approximately equal amount of the cash financial instrument or physical commodity. (See also Hedge, Long Hedge).

Speculator - One who attempts to anticipate price changes, and, through buying and selling futures contracts, aims to make profits; does not use the futures market in connection with the production, processing, marketing, or handling of a product. The speculator has no interest in making or taking delivery.

Spot - Market for immediate delivery and payment of the product.

Spot Month - Nearest delivery month of a futures contract.

Spot Price (or Cash Price) - The price at which a physical, actual or spot commodity is selling at a given time and place.

Stop And Reverse - A stop order that, when hit, is a signal to close the current position and open an opposite position. A trader holding a long position would sell that position and then go short on the same commodity.

Stop Limit Order - An order which becomes a limit order once the specified price is reached. It is similar to a stop order.

Stop Order (Stop) - An order to buy or sell at the market when and if a specified price is reached. Buy stop orders are placed above the present market price. Sell stop orders are placed below the present market price.

T

Technical Analysis - Analysis of the markets based on past price data, rather than fundamental supply and demand information. It is based on a wide array of tools to give buy and sell signals or to predict market direction. Common technical tools include bar charts, contrary opinions, Elliott Wave theory, moving averages, trend analysis, price strength indexes.

Tick - Minimum price fluctuation of a futures or options contract.

Trading Volume - See Volume

Trending Market - Situation where the price moves in a single direction and it usually closes on an extreme for the day.

V

Volume - The number of contracts (either the long or the short side of the market) traded during a specified period of time. It is a measure of intensity in the market. Other things equal, any sell or buy signal is more strongly confirmed when it occurs on high volume.