



## **Managing for Today's Cattle Market and Beyond**

### *Futures Market - Basic*

*By  
Gene E. Murra  
South Dakota State University*

Cattle producers face a great deal of risk, not only in production but also in pricing. One technique which can be used to manage the price risk is the futures market. The focus of this article is on the basic concepts and definitions related to that market. Other articles will be provided for other pricing techniques.

#### ***The Chicago Mercantile Exchange***

The Chicago Mercantile Exchange (CME) was established in 1919. It is the primary livestock exchange. Cattle futures, both live (fed) and feeder cattle, are a part of the CME.

While anyone can buy or sell futures, all transactions for cattle are handled by a broker who then uses appropriate channels to carry out orders. Again, for livestock, the CME is a major player in those channels.

#### ***Futures Contract***

A futures contract is a standardized agreement to buy or sell a commodity at a date in the future. It is an obligation. The contract specifies the commodity (live cattle, feeder cattle), the product quantity (40,000 or 50,000 pounds of live animals), product quality (specific U.S. grades and yields), delivery points (only for live cattle--there are no delivery points for feeder cattle), and the delivery date (within the month that a contract terminates).

The important concept to remember here is that the contract is standardized. Product descriptions are pre-set. If what you produce is different than the product described in the contract, the price quoted for the futures contract must be adjusted. That adjustment process involves basis. Both the process and basis are discussed later.

#### ***Who Uses Futures***

There are three major categories of people who use futures: hedgers, speculators and observers. The hedger uses the futures market to manage price risk for products they have or expect to have. Risk is transferred to the speculator. The speculator accepts the risk with the anticipation of earning a profit. Speculators have no intentions of buying or selling actual commodities. The observer does not actively participate in the futures market (doesn't buy or sell futures) but uses the information provided in the futures market. Possible uses include establishing price outlook and evaluating other pricing alternatives.

#### ***What is Hedging?***

Hedging is buying or selling futures contracts as a protection against unfavorable price changes. A short, or selling hedge, is used when you plan to sell a commodity, such as a rancher with feeder cattle, at

some future date. You are concerned that prices will fall. A long, or buying hedge, is used when you plan to buy a commodity, such as a feedlot needing feeder cattle, at a later date. You are concerned that prices will increase.

In either case (short or long), the key is the use of “opposite” transactions. All that means is that as you are producing a product (feeder cattle), you are buying that product as you pay for inputs. An opposite transaction on the futures market would be to sell futures. Then, when the feeder cattle are sold, do the opposite on the futures market (buy back the contract originally sold).

The transaction of buying back a futures contract originally sold is called “offsetting”. All transactions are made through a broker. That individual should be able to help those who are “in it for the first time”.

### **Basis**

As noted earlier, commodities are very specifically defined in futures contracts. In many cases, producers do not produce exactly that product. Or, there may be locational differences between where the real or actual product is located and a delivery point (or in feeder cattle, between your product and the U.S. average price). The relationship between the futures market price and your cash price is called basis. In formula terms, it is:

### **Basis = Cash Price - Futures Price**

The difficulty with basis is not computing it “after the fact”. The problem is encountered when basis must be estimated “ahead of time”. For example, assume that in May the futures price for feeder cattle for the month of November is \$62.00. That \$62.00 price refers only to the product described in the contract. What does it mean to you? A basis adjustment must be made. Since we don’t know now exactly what the difference between our cash price in November and the November futures price in November will be, we must estimate that difference now. In effect, our expected price for November is:

### **Expected Price = Futures Price ± Basis Adjustment**

If we had assumed the basis to be -\$1.00 (or we expect our cash price to be \$1.00 below the futures price in November), our expected price would be:  
 $\$62.00 - \$1.00 = \$61.00$

The actual net price received in November will equal the expected price only when basis is estimated correctly. There is more discussion on basis in another article. It should be noted here that basis is one of the most critical concepts in the use of the futures market. If basis cannot be estimated with a greater degree of accuracy than the cash price, then the futures market

cannot be used to shift price risk.

## ***Broker and Orders***

As noted earlier, you must go through a broker to use the futures market as an active participant. Brokers carry out the orders of hedgers. Those orders are of several types. The two most common types are: (1) market order -- an order for the sale or purchase of a futures contract to be filled as soon as possible at the best possible price, and (2) price (limit) order -- an order for the sale or purchase of a futures contract only at a certain price or better. Market orders usually are filled very quickly. Price orders will not be filled unless the price selected is reached -- sometimes never.

## ***Margin Money***

Margin money (sometimes referred to as performance bond) is in effect “good faith money”. A certain amount (initial margin) is required before trading is begun. If the market “moves against you” (example--prices move up after you sold a futures contract), more margin money may be required. It is important to work with your broker, lender, spouse and partner regarding the margin account.

## ***How Does a Short Hedge Work?***

An example using a short (selling) hedge may help clear up some questions. A short hedge is presented because it is the type most often used by someone producing a product to be sold at a later date. A long hedge example will not be presented here because of space limitations. The procedures used in a long hedge are similar to those used in a short hedge.

Assume you are a producer of Spring born feeder calves which you plan to sell at 600 pounds the following Fall. Assume you have enough calves for one feeder cattle contract (50,000 pounds or about 83 head of 600 pound calves). You note the feeder cattle futures market for November (when you plan to sell the calves) is trading today (assume it is May) at \$62.00. Since you produce top quality calves and sell in a good market, you assume that your 600 pound calves will bring a price about \$2.00 above the national average price (the price used to cash settle the feeder cattle futures contract) for 700-800 pound top-of-the-line medium frame number one steers (the product described in the feeder cattle futures contract). The \$2.00 premium is your estimated basis and means

you have an expected price of:

	\$62.00	+	\$2.00	=	\$64.00
	Futures Price		Basis		Expected Price

If the above price is acceptable, call your broker (assume an account already has been established and margin money has been deposited) and “sell” a November feeder cattle futures contract for \$62.00 (note here that your order may take several forms, including a specific price where a sale will occur only if that price is reached or a market order when a sale will take place at the “going rate”).

Assume that a November feeder cattle futures contract has been sold at \$62.00 on May 1. Now, move forward in time to November. The calves are ready to sell. The opposite position to the cash sales now would be to buy back the November futures you sold in May.

***If Prices Had Moved Higher***

The following table can be used to show the results if prices move higher and it is assumed that our basis estimation of +\$2.00 is correct.

	<i>Cash Side</i>		<i>Futures Side</i>
On May 1	Raise calves		Sell Nov Futures \$62.00
	Futures Price	\$62.00	
	Basis Adjust	+ 2.00	
	Expected Price	\$64.00	
In Nov	Sell Calves	\$70.00	Buy Nov Futures \$68.00
			Futures results = -6.00
Net	\$70.00 - 6.00	= \$64.00	actual net price
	Cash result		Futures

Since the basis estimation of \$2.00 was the actual basis, our actual net price was the same as we expected (\$64.00). Of course, the neighbor who did not hedge received \$70 for his/her calves. This should not concern you -- you got what you expected.

***If Prices had Moved Lower***

Prices don’t always move higher after a producer sells a futures contract. They often move lower. The following table can be used to show the results if prices moved lower (again, assume the basis estimate was correct).

Here, the neighbor who did not hedge would have received only \$55.00 for his/her calves. You should be happy -- not because you beat the neighbor

but because you got what you expected.

	<i>Cash Side</i>		<i>Futures Side</i>
On May 1	Raise calves		Sell Nov futures \$62.00
	Futures Price	\$62.00	
	Basis Adjust	+ 2.00	
	Expected Price	\$64.00	
In Nov	Sell Calves	\$55.00	Buy Nov Futures \$53.00
			Futures results + 9.00
Net	\$55.00	+ 9.00	= \$64.00 actual net price
	Cash gain		Futures

***Final Comments***

The futures market is not for everyone. It is a pricing alternative that sets both a maximum and minimum expected price. If either eliminating the “price upside” or payment of margin money is not acceptable, this is not the tool for you. The concepts discussed earlier are critical. First is the rule of opposite -- you must be on opposite sides of the cash and futures market. Second, it is critical that basis can be estimated with some degree of accuracy. Finally, hedgers must have a mind-set that says “I got what I expected, therefore I am satisfied” -- even if without hedging you could have done better or the neighbor gets a better price.

The futures market can be a valuable tool to the observer. Observers can use their knowledge of the futures market and basis to evaluate other pricing alternatives, such as a cash forward contract. In effect, a cash forward contract is possible because of the futures market. Prices offered in cash forward contracts usually are based upon the futures market.