DEPARTMENT OF AGRICULTURAL ECONOMICS

Selling Hedge with Futures

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When a commodity price is acceptable prior to the time the commodity will be sold in the cash market, a producer can use a selling hedge to reduce the risk of declining prices.

What Is a Hedge?

A selling hedge involves taking a position in the futures market that is equal and opposite to the position one expects to have in the cash market, so one is covered (subject to basis risk) against price declines during the intervening period. If futures and cash prices decrease while the hedge is in place, the lower cash price the producer realizes for his production is offset by a profit in the futures market. Conversely, if prices increase, losses in the futures market are offset by the improved cash price.

There are five steps to implementing a selling hedge that will likely meet your pricing objectives.

1. Analyze the expected profit of the enterprise in question. Deciding whether or not to implement a selling hedge will depend somewhat on the cost of production for the enterprise and having an acceptable profit expectation. However, protecting an acceptable profit may not always be possible. A prudent manager might also use a selling hedge to limit losses when market conditions dictate.

2. Be sure to hedge the correct quantity. Check contract quantity specifications and be sure the proper amount of a commodity is hedged. For example: A cattle feeder has 100 head of steers on feed that have a projected out-weight of 1,200 pounds each. The total pounds of fed cattle produced divided by the Chicago Mercantile Exchange (CME) Live Cattle contract weight specification yields the number of contracts necessary to fully hedge the pen (100 head x 1,200 pounds/head ÷ 40,000 pounds/contract = three contracts). Similarly, a producer wanting to hedge 100 percent of an expected 10,000 bushels of corn would use two futures contracts (one Chicago Board of Trade, or CBOT, corn futures contract is for 5,000 bushels).

3. Use the proper futures contract. Most widely-produced agricultural commodities have a corresponding futures contract. Fed and feeder cattle, hogs, corn, wheat, and soybeans are a few examples. A notable exception is grain sorghum. Because of grain sorghum's close price relationship to corn, producers can use corn futures to manage grain sorghum price risk.

Once the proper futures contract is selected, pay close attention to the contract month. Project the date of the anticipated cash market transaction and select the futures contract month that best corresponds to that date. For example, an expected September corn sale would be hedged against December CBOT corn futures, since there are no contracts available for October or November.

4. Understand basis and develop an accurate basis forecast. Basis (which is covered in

depth in another publication in this series) is the relationship between local cash prices and futures prices. If projected basis and actual basis at the time of purchase are the same, then the selling price that was hedged will be achieved. Failure to account for basis and basis risk could mean not meeting your selling hedge pricing goals.

5. Be disciplined and hold the hedge until the cash sale of the commodity or until the hedge is offset by another price risk management tool. Producers should hedge only prices that are acceptable to them. Once you have initiated a hedge position, do not remove the hedge before the cash sale date without carefully considering the risk exposure.

Case Example: Selling Hedge for Corn

Bill is a corn farmer in the Texas Panhandle. He has a 10-year average corn production of 24,000 bushels on his farm, and at no time in the past 5 years has that production dropped below 15,000 bushels. In March, Bill notices the December CBOT corn futures are trading at $2.65/bushel. Further, Bill knows the historical harvest time basis for corn in his county is -$0.05/bushel relative to futures (i.e., cash price is $0.05/bushel less than futures price). Based on futures information, he projects a harvest time price of $2.60/bushel ($2.65 - $0.05), which is acceptable to him. Because Bill fears a possible price decline between March and harvest, he elects to implement a selling hedge on 15,000 bushels (three contracts at 5,000 bushels each) because he has a reasonable expectation of producing this quantity based on his production history (Table 1).

How Did the Corn Selling Hedge Work?

Bill projected a harvest-time selling price of $2.60/bushel on March 5. On October 10, he sold his corn for $2.40/bushel and liquidated his futures position. The decrease in corn prices he had feared did occur, and the cash price he received for his corn was less than his projection. However, Bill realized a $0.20/bushel profit from the decrease in the CBOT December corn futures price. Applying the $0.20/bushel futures profit to the cash price, the realized (or net) selling price for the 15,000 bushels he hedged was $2.60/bushel, just as he had projected.

Without Bill's accurate basis forecast, the projected selling price and realized selling price would have been different. A favorable basis move (i.e., a narrowed basis) would have yielded a higher realized sales price, while an unfavorable basis move would have decreased the net selling price. In a hedged position, the producer trades price risk for basis risk. Once more, the basis forecast is a key to hedging with futures.

Did Bill receive $2.60/bushel for his entire crop? The answer depends on the quantity produced. If he produced his historical average of 24,000 bushels, he was protected at $2.60/bushel for the 15,000 bushels he hedged and received a price at harvest of $2.40/bushel for the unhedged 9,000 bushels. This yields a weighted

Table 1.

	Cash Market	**Futures Market**	**Basis**
March 5	Objective: to realize a corn sales price of $2.60/bu	Sells three CBOT December corn contracts at $2.65/bu	Projected at -$0.05/bu
October 10	Sells 15,000 bu of corn at $2.40/bu	Buys three CBOT December corn contracts at $2.45/bu	Actual basis, -$0.05/bu ($2.40-$2.45)

Gain or loss in Futures: *Gain* of $0.20 ($2.65 - $2.45)

Results:
Actual cash sales price	$2.40
Futures profit	+$0.20
Realized sales price	$2.60*

*Without commission and interest.

average price of $2.525/bushel. Had he produced more than his historical average yield, the weighted average price would have been less than $2.525/bushel. If he produced less than his historical average yield, the weighted average price would have been higher than $2.525/bushel. Actual production determines the final average price per bushel.

What If Bill's Price Outlook Was Incorrect?

Let's examine the effects of a price increase on the performance of Bill's corn selling hedge (Table 2).

Bill's pricing objective of $2.60/bu was achieved for the 15,000 bushels hedged. This example illustrates the discipline necessary when hedging. Although Bill might be frustrated with the results of this selling hedge in a rising market, he should remember that the decision to hedge was made after careful analysis and his best price forecast. While Bill might not be happy about a net price of $2.60/bushel, his plan was sound, he still obtained his desired profit for this part of his corn crop, and he will likely maintain, if not improve, his overall financial position.

Table 2.

	Cash Market	Futures Market	Basis
March 5	Objective: to realize a corn sales price of $2.60/bu	Sells three CBOT December corn contracts at $2.65/bu	Projected at -$0.05/bu
October 10	Sells 15,000 bu of corn at $2.85/bu	Buys three CBOT December corn contracts at $2.90/bu	Actual basis, -$0.05/bu ($2.85-$2.90)
Gain or loss in Futures: *Loss* of $0.25 ($2.65 - $2.90)			

Results:
Actual cash sales price	$2.85
Futures loss	- $0.25
Realized sales price	$2.60*

*Without commission and interest.

Table 3.

Advantages and Disadvantages of a Selling Hedge with Futures	
Advantages	**Disadvantages**
1. Reduces risk of price declines	1. Gains from price increases are limited
2. Could make it easier to obtain credit	2. Risk that actual basis will differ from projection
3. Establishing a price aids in management decisions and can help stabilize crop income within a crop year	3. Year-to-year income fluctuations may not be reduced with hedging
4. Easier to cancel than a forward contract arrangement	4. Contract quantity is standardized and may not match cash quantity
	5. Futures position requires a margin deposit and margin calls are possible

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