Options -- A Safety Net in Volatile Markets

by Diana Klemme

Every year farmers face difficult decisions: what to plant, what varieties to use, and a host of other choices. But compared to marketing, production decisions are fairly easy. Pricing opportunities for a crop year occur over 24 months or more, from before harvest through the crop year, and beyond. Is it any wonder producers look for a "crystal ball" that will tell them when to price their production?

Prices reflect world supply and demand as it exists today, and as situations change so do prices. Unfortunately, there are no "crystal balls" that can reveal the future, so the producer is faced with the task of marketing with blinders on. Equally discouraging is to be able to look backwards at yesterday's opportunities, but not be able to capture them.

There are a number of marketing alternatives open to producers, each having advantages and disadvantages.

Many producers are reluctant to use futures, regarding them as "speculative". But what could be more speculative than to borrow money, plant a crop, and hope the price goes up? Properly used, futures are a conservative pricing tool that allow producers to lock in a price level, yet be able to decide later when and where to market the physical commodity.

One phrase in the last sentence is the key to the failure of many farm marketing plans: "to lock in a price". It's a natural tendency to want to sell crops at the top of the market, but it's also a nearly impossible task. The fear of selling too soon often keeps the producer from doing anything, even when good opportunities exist.

Any "loss" in a short futures position will be offset by the rising value of the unsold physical commodity, but the potential of margin calls discourages producers from using futures. The problem of margin calls can be eliminated by selling the crop in the cash market. That locks in a final price but raises concerns of a different sort: producers are sometimes reluctant to forward contract for fear of not raising a crop.

The ideal solution would be to set a floor price for the production, eliminate the potential of margin calls, yet leave the farmer able to benefit should prices rise. This lets the producer wait for tomorrow without leaving the past behind. In effect, to purchase price insurance.

Options to the Rescue

Options on agricultural futures can accomplish that goal. There are two kinds of options, puts and calls, and both have a place in a producer's marketing program.

..... A put option gives the buyer the right but not the obligation to ***sell*** a specific futures contract at a specific price level known as a "strike price".

..... A call option gives the buyer the

right to ***purchase*** a specific futures contract at a specific price level.

There are no margin calls for the option buyer. The risk is limited to the cost of the option, the premium, which will vary depending on a number of factors:

1. time until expiration of the option
2. level of coverage (strike price) relative to the underlying futures price
3. volatility of the marketplace

Options are traded through open outcry, just as futures are. With options, however, the premium is what's being traded. Premiums will always reflect the immediate value of the option if it were to be exercised now and will have some cost over and above that for "time" risk. As futures change, so will the premiums for the various strike prices.

The producer can select an option contract month that will have the price "insurance" expire either before or after the delivery time of the actual commodity. Wheat may come out of the field in June, for example, but a producer could sell it and buy a December wheat call option, giving him until almost the end of the year to benefit from higher prices.

How to Purchase "Price Insurance"

There are two ways that options can be used to set a floor price for the crop.

- Retain ownership of the physical commodity and set a minimum selling price through the purchase of put options.

- Sell the physical commodity and replace it with the purchase of call options (known as a synthetic put).

The ownership of a put carries the right to sell futures at a specified level (2.70 December corn, for example). If prices fall below that level, the option can be exercised and a short futures position created at the 2.70 strike price. If prices rise, the producer can sell his crop at the higher price and let the put "insurance" expire worthless.

The other way of buying price insurance is for the producer to sell the actual commodity to his local elevator and "replace" the ownership with the purchase of call options. If prices fall, the floor price is protected through the cash contract. If prices rise, the cash price doesn't change, but the value of the call option goes up.

The outcome of the two strategies will

Option Premium Calculation

December corn futures = $2.70

Strike Price	Exercise Value	+	"Time" Cost	=	Total Premium
2.60	$.10		$ .16		$ .26
2.70	.00		.21		.21
2.80	.00		.18		.18

be essentially identical, except for variations in the cash/futures relationship (basis).

Cash Market Minimum-Pricing

Producers don't always have to deal directly with a brokerage firm in order to use options. Country elevators and terminals can legally handle the purchase of options for a producer, as long as the option is tied to a simultaneous cash purchase from that producer. This strategy is known as a Cash Minimum Price Contract (or Variable Price Contract).

The producer reviews various strike prices and premiums and selects an option. The elevator buys it through their brokerage firm, and charges the producer the cost of the premium. The option is carried on the elevator's books as a liability owed to the producer, to the extent of any unrealized value of the contract and option. When the producer decides the market has moved as much as can be expected, instructions are given to the elevator to price out the Minimum Price Contract. Any gains are credited to the producer, raising the selling price above the minimum. If prices never rise, the floor price simply becomes the final price.

Producers can also purchase options through their country elevators and terminals.

Using options through a cash market strategy also eliminates the temptation to cross the line and begin speculating in futures, because the elevator can only handle option transactions, and only as outlined above.

Comparing Marketing Alternatives

The best way to show how options actually function is to compare an example of several producer marketing alternatives. Assume December 1989 corn futures are at $2.70, that the local grain elevator is bidding $2.25 for harvest delivery, a basis of -45 cents and that December 2.70 call options cost $.21. The producer could do any of the following:

1. Sell futures at $2.70, and be subject only to basis risk.
2. Sell cash at $2.25, and have no risk from this point.
3. Do nothing, and bear all risk on both price and basis.
4. Sell cash at $2.25, and buy a call option (December 2.70) for a premium of $ .21 per bushel. Net minimum selling price in this case would be $2.04 ($2.25 - $.21).

The marketing outcome will depend on what prices do from this point forward. To make things easier, assume that basis stays at a constant $.45 under futures.

The summary shows the price "insurance" feature of using options. The producer never takes less than a minimum price of $2.04, but is able to benefit if prices rise. The best of both worlds!

More Advantages of Options

Using option-based contracts, the producer can market further ahead with confidence. He can lock in a minimum price, and if markets rise, will still be able to benefit. If the producer sells grain before harvest on a cash minimum price contract and then has a crop failure, he will be protected against market loss even if prices have risen. In that case, the value of the call option will also

have risen, allowing the producer to use any gains from the option to reduce the loss from the buyback of the cash contract.

The "insurance" feature of minimum-price contracting also allows the producer to show his lender a minimum projected cash flow from the farm's production. This should increase the lender's confidence in the producer's abilty to pay off production loans.

Option-based contracts can at times be used to lock in floor prices above both cost of production and government support prices. Options can be used in conjunction with government programs - not necessarily as an alternative to them. The producer can comply with acreage restrictions, be eligible for deficiency payments, yet still set a cash floor price through options. In certain cases the ownership of calls can be a tool to help protect deficiency payments.

Sometimes, producers find themselves selling strictly because of cash-flow needs. If they believe prices can move higher but cash is needed now, the grain can be moved and replaced with options. This can help the producer avoid selling at traditionally low-price times such as just ahead of spring planting.

In Lieu of Storage

Elevators don't always have room to handle all the grain that comes their way at harvest. When that occurs, producers typically had to sell so the elevator could move the grain out. Minimum pricing offers the producer a way to "store" grain on paper, in a limited risk strategy. Storage costs are also eliminated.

Even if space is available, the producer has to consider the costs of holding the physical inventory. He can compare the projected costs of storage and interest to option premiums. If the premium for a strike price near the current value of futures (an "at the money" option) is about the same as holding costs, he may chose to liquidate the inventory and replace it bushel for bushel

Price Insurance Features of Options

If Futures Price =	Sell Futures $2.70	Sell Cash $2.25	Do Nothing Now	Sell Cash at $2.04 + Buy 2.70 Call
	———————————	Final Selling Price	———————————	
$4.00	$2.25	$2.25	$3.55	$3.34*
3.75	2.25	2.25	3.30	3.09
3.25	2.25	2.25	2.80	2.59
2.70	2.25	2.25	2.25	2.04
2.50	2.25	2.25	2.05	2.04
2.00	2.25	2.25	1.55	2.04

*in all cases, the return is equal to the original $2.25 cash price less the $.21 option premium, plus the final value of the option. The call option gives the producer the right to buy futures at $2.70, and therefore gain the amount futures move above that level.

with call options. If prices rise, he will benefit. If prices fall, the floor price again serves as his insurance and becomes the final price.

Minimum Pricing From the Country Elevator's View

The producer is not the only one who can benefit from minimum price contracts. One concern of country elevators is acquiring to-arrive contracts and then having prices soar or a crop failure occur. This leaves elevators facing potential contract defaults on low-price purchases, plus the cash flow drain of margin calls on low-priced hedges in futures (the elevator will be long cash/short futures to keep the elevator's price risk at zero).

Although any gains on minimum price contracts are for the producer's account, the elevator can feel more certain of the producer's ability to either perform or cancel and be able to pay the market difference. The elevator's lender may be more comfortable setting up a hedge margin line for new-crop forward purchases if some or all are done through "minimum pricing" rather than fixed-price contracting.

Summary

Option-based contracts are a powerful marketing tool for the producer, and when used properly offer a combination of flexibility and safety not found in other alternatives. Buying options for price "insurance" is a conservative strategy, one that producers are taking to in increasing numbers as a way of seeing what tomorrow may bring, while keeping the past in hand as a backstop.

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