Cooperative
Extension Service
University of Illinois
at Urbana-Champaign

WEEKLY OUTLOOK

Department of Agricultural Economics
College of Agriculture
University of Illinois at Urbana-Champaign

September 13, 1989

THE CASE FOR CALL OPTIONS

The continuation of a relatively tight corn supply in the 1989-90 marketing year suggests that prices could be higher than expected at some point in the year. However, it is relatively expensive to own and store corn, and a bumper crop in 1990 could result in lower, rather than higher, prices. As pointed out last week, one alternative to storage is to sell the crop early and replace some portion of that crop with call options. The call option would allow the owner to participate partially in a price rally, but losses would be limited to the cost of the option if prices declined.

Consider the following example. The cost of storing corn includes the cost of extra drying and shrinkage, warehouse cost, and interest on the value of the corn. For corn valued at $2.25 per bushel, the extra expense of commercially drying to 14 percent moisture rather than to 15 percent might be about 4 cents per bushel. Commercial warehouse cost from harvest to February 1 might total 14 cents per bushel. Interest on the value of the corn from October 1 to February 1 would be about 9 cents per bushel. The total cost of storage in this example would be 27 cents per bushel.

The direct cost of owning a call option includes the magnitude of the premium, interest on the premium, and commision fees. The indirect cost includes the magnitude of basis improvement from the time the corn is sold until a certain date--February 1 in this example--and the difference between the price of corn futures and the strike price of the call option. On September 8, March corn futures closed at $2.465 a bushel. The premium on a March call option with a $2.50 strike price was 11 cents per bushel.

The direct cost of buying that call option on a 5,000-bushel futures contract would be about 12 cents per bushel. The difference between the price of the futures contract and the strike price was 3.5 cents per bushel. Whether or not that difference is actually a cost depends on the direction prices go. If prices decline, the call option would likely expire as worthless so that the difference would not be a cost. If March futures rally, the first 3.5 cents might not be captured in the increased value of the option premium. If ownership were in the form of corn or corn futures, all the rally would be a net gain. In that sense, the 3.5 cents would be an indirect cost of owning call options.

The most difficult cost to estimate is the potential magnitude of basis improvement from the time the corn is sold until February 1. In this example, corn is sold at $2.25, and March futures are at $2.465 so that the current basis is 21.5 cents. If that basis narrows, the producer does not participate in the improvement because the corn has already been sold. If the basis narrows to 10 cents, the opportunity cost is 11.5 cents per bushel. The total cost of owning the call option in this example would be 26.5 cents per bushel, about the same as commercial storage. Although the cost of the two alternatives are about equal, the risk position is very different. With storage, the risk is that cash prices decline, and losses are incurred. With a call option, the risk is that the basis might improve significantly more than expected. In general, the price risk is greater than the basis risk so that call options would be preferred. In some cases and in some locations, the basis risk may be greater. For example, a cold winter and frozen river conditions in northern areas could result in a much stronger than expected basis in southern areas with access to water transportation.

In the case of on-farm storage, the out-of-pocket costs could be substantially less than the storage cost estimated in this example, assuming no significant quality deterioration. Lower costs might swing the advantage to storage. The cost of buying futures would be less than the cost of commercial storage, depending on the behavior of the basis. Owning futures, however, does not protect an owner from declining prices.

Darrel Good

Issued by Darrel Good
Extension specialist
Prices and Outlook

Cooperative Extension Service
United States Department of Agriculture
University of Illinois
At Urbana-Champaign
Urbana, Illinois 61801

FIRST CLASS