Risk Management

An Exchange's View

by Michael Braude

The Federal Agriculture Improvement and Reform Act, better known as the Freedom to Farm Act, has changed the marketing environment for producers. Combine this with the fact that we are seeing increased global competition and the net result appears to be a market orientation with greater volatility.

While it has always been in the best interest of the producer to have a marketing plan, the potential for increased price volatility now makes creating a marketing plan a vital part of production agriculture.

I define a marketing plan as one that takes into account a producer's financial situation, risk tolerance level, the timing of his cash flow needs and his production costs. The main reason for creating a plan is to establish a price for selling wheat in an organized, disciplined fashion. Of course there are many ways that a producer can actually price his crop. He can use cash sales, forward cash contracts, store his wheat and sell it later, or use a range of alternatives with futures and options.

Since the Kansas City Board of Trade (KCBT) has been in the risk management business for more than 120 years, I believe we have something to offer in the dialogue about risk management heading into the next century.

The Advantages of Exchange-Traded Products

As the need for risk management tools has grown, so has the number of tools available to the industry. From cash hybrids to crop insurance to other customized products, each has a role to play in helping agribusiness cope with volatility. Even with all the new tools, though, futures and options still provide some of the most efficient and effective means of risk management in the marketplace today. And they should certainly be considered an important component of any risk management strategy.

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There are three groups that look over the shoulders of traders at all times. The federal government regulates all futures exchanges through the Commodity Futures Trading Commission. The National Futures Association regulates registration of commodity traders as individuals. The exchange itself watches and monitors every trade that takes place there.

The KCBT's rules and regulations are explicit in their demands and requirements on those who trade the exchange's contracts, and are clearly spelled out to the parties involved. In addition, the KCBT's clearing corporation ensures that traders can finance their actions by requiring margin. The clearing corporation effectively becomes the buyer to every seller and the seller to every buyer. The first line of defense against rule violations comes from the exchange itself, which has a team of investigators who oversee all trading on the floor. In many products traded off-exchange, this same degree of regulation and protection simply can not be equaled.

Risk management is the principle reason for the existence of futures exchanges. But the ability to manage risk is possible mainly because of a fundamental process that takes place on the trading floor every day -- the process of price discovery.

Through price discovery, a producer, elevator, exporter, importer, processor or any other agribusiness operator anywhere in the world, can know at any given time the price at which a futures or options contract has traded. This very public availability of price information -- this transparency -- is not available for many off-exchange products.

The prices discovered on exchange trading floors are available worldwide, creating an open-information situation where no single player can dominate the market. Producers can price their product before it is even produced, and end-users can establish a price for their anticipated supply needs long before they have the supply in hand. Many industries only wish for such opportunities.

In agribusiness we should take advantage of these highly-regulated, open-market, exchange-traded products whenever it is appropriate to do so. The question then becomes one of when is it appropriate?

Each producer has different risk management needs which can change from one year to the next. In determining the appropriate use of futures and options for hedging purposes, hedging should ***NOT*** become a risk in and of itself.

The Nature of Hedging

By its very nature, hedging should *reduce* risk through ensuring price protection against adverse market moves. Each situation is unique, because of factors such as input costs, storage capacity, and local growing and transportation conditions. As a result, each operation may have different goals and different factors that influence its hedging strategy.

But for any operation, if its true purpose is indeed to hedge and only to hedge, then its futures and options trades should be made for the primary intent of *reducing* price risk. A true hedger should not look at his futures or options trade solely in terms of the profit or loss it shows on paper. He must also keep in mind the profit or loss in his cash position. For a true hedger the trade has served its purpose if it meets the goal of establishing a price for the product in an environment that can sometimes see dramatic price swings from one minute to the next.

It is only human nature to want to sell at the market peak, or buy at the low point of the year. But human nature is *not* the same thing as hedging nature. In hedging, futures and options are used to smooth out market ups and downs, not to try to make a killing by capturing them. By hedging with exchange-traded products, a producer can manage price risk.

This is not to say that "speculating" should be avoided. Speculators provide liquidity to the markets and give hedgers someone to trade with.

The line between hedging and speculating can be a fine one. So, it is highly important for someone using futures and options to assess their goals for particular trades and trading strategies. You need to have these goals in mind when you make a trade. Is the goal to try to pick the top or bottom of the market and thereby enhance potential profits? Trying to outguess the market is a form of speculation. Or, is the goal to try to *protect* the profitability of the business by locking in a favorable price? This is a form of hedging because you are trying to lessen the risk that price changes could reduce or eliminate the potential for profit.

Needless to say, there are a number of ways in which risk management through hedging can be accomplished.

Why Futures and Options Work in Price Risk Management

The main reason futures work as a hedge against price risk is their relationship to the cash market. The fact that a futures contract eventually could result in delivery of grain is seldom actually realized. But it helps to keep the futures price based in the reality of what is happening in the cash market. Without this correlation, futures would be of much less use in hedging actual cash market transactions. With this correlation, a futures contract should move toward convergence with the actual cash price approaching expiration.

The more that futures and cash prices correlate, the more effective a futures hedge is as a risk management tool. This same principle applies to options. Options give the holder the right, but not the obligation, to buy or sell the underlying futures contract at a specific price. Therefore, the correlation between futures and cash prices is key to the effectiveness of an options hedge as well.

Of course, the cash price that correlates with the futures contract for many operators is not the same as the price in their local market. At the KCBT, for example, wheat futures are based on Kansas City delivery, with a 12-cent discount for Hutchinson, KS, delivery. In a perfect world for a producer in Colby, KS, for example, the local cash price would always be at the same differential to the KCBT wheat price -- let's say 20 cents under. That producer could then achieve a perfect price hedge.

In reality, however, local conditions such as transportation availability, storage, and proximity to major markets are going to impact the Colby price. The resulting cash price is often something that still correlates well with, but does not move identically with, the futures price.

There are two points to be made from this. The first is that it is vitally important for an operator to know his basis risk and its historical relationship with the futures market. Only with this knowledge can he develop the most effective hedging strategy possible for his situation.

The second point is perhaps even more important, and it is that futures and options markets work as a price hedging tool because of their correlation with the underlying cash market. The KCBT continues to try to improve upon this correlation through actions such as adding a new delivery point. As long as futures markets are able to maintain and improve upon this grounding in the cash market they will continue to serve a useful purpose well into the next millennium.

How Futures and Options Work in Risk Management

Futures and options have different attributes that make them useful for risk management in different ways. Futures,

for example, are binding in respect to delivery. A futures contract must either be offset before its delivery period or must be delivered against. Because of this binding agreement in respect to delivery, the futures contract is grounded in the cash market and should converge with actual cash prices as its delivery period approaches. It is this grounding in the cash market that is critical to the usefulness of a futures contract as a hedging tool.

However, the vast majority of participants in grain futures markets do not use them as a method for actually procuring or selling physical supplies of grain. Instead, for most hedgers futures are used as a substitute transaction for the cash market that helps to smooth out price risk and fluctuation.

For example, an elevator operator may purchase wheat from a producer at a set price today, but may not be able to turn around and sell that wheat to an end user, such as a flour mill, until weeks later. Without futures, the elevator operator is exposed to the risk that during the time the wheat sits in storage, its price will decrease and he will be forced to sell the wheat for less than he paid to buy it from the producer.

But with futures, the operator can use a futures contract as a substitute transaction. After buying wheat from the producer, the elevator operator can sell a futures contract. Then, when the wheat is actually sold to the flour mill, the futures contract can be bought back. If the price of wheat in the cash market has declined, that loss should be offset by a gain in value in the futures position, and if the cash price has risen, that gain would offset losses on the futures side. The end result is price protection.

Options, on the other hand, can be looked at by agribusiness as price insurance. Because options give the right, but not the obligation, to buy or sell wheat futures at a specific strike price, they do not have the same delivery requirement as a futures contract. The options premium can be paid to insure against an adverse price move without limiting the potential for profit. Just as with insurance, an option can simply expire unused if the adverse price move which it insured against does not occur.

Futures and options also can be used in tandem to manage price and profit risk. For example, a grain elevator with a large "short," or sell, position in the futures market may be concerned about the possibility of the market making a large move upward. The elevator could buy deep out-of-the-money call options, helping to insure against extreme losses on its futures position at a known cost.

These examples illustrate some basic ways in which futures and options can be used to hedge price risk. But each individual hedger, whether he be a producer, elevator, end user, exporter or some other market participant, must assess his own individual situation when planning any risk management strategy, including the use of futures and options.

Basis

One of the key areas that varies from operation to operation is basis. For example, the basis correlation with the futures market for a hard red winter wheat producer in southern Kansas may be much higher than for a producer located in an area that typically has less impact on national production. Knowledge of the local basis and its correlation with futures can be very important in establishing a risk management plan. Other factors that can impact risk management strategies include size of operation, variable production risks, and storage availability.

Personal preferences play a major role as well, both in storage decisions for producers as well as in any other risk management decision in agribusiness. Just as with making personal or business financial decisions, an individual or an agriculture-related business must decide

for itself how much risk it is willing to bear without protection or insurance. For some, the level may be significantly higher than it is for others. The important thing is that risks are assessed and are understood, and that a conscious decision is made regarding to what degree those risks will be borne.

Accounting for Both Price and Yield Risks

When discussing the risks that face agriculture, many in agribusiness have traditionally divided them into two primary areas: price risk and yield risk. They offer one strategy, such as futures and options, to deal with price risk, and another strategy, such as crop insurance, to deal with yield risk. There is nothing particularly wrong with this; price and yield are indeed among the most significant risk exposures for many in agriculture today, and in both cases, the recommended tools can be used in sound ways to manage that risk.

Yield and price are but *parts* of the same *whole*: the whole of risk management. These parts do not exist separately from one another, but are related and should be looked at *together* in the total risk management equation.

In the practical terms of actually devising and evaluating an ongoing risk management strategy, this means a great deal. Use of traditional products such as futures and options and crop insurance can and should be viewed in a new light. They are risk management tools that can be used *together* to protect profit potential. They can be part of a strategy that is constantly being revised and reevaluated based on both market-wide and firm-specific condition changes, both for the short- and long-term benefit of the business.

Working Together

Price and yield have a definite correlation, based on the precept that as one goes up the other goes down, and vice versa. But this correlation can vary significantly from one geographical area and one type of farm to another, just as basis levels and their correlation with futures markets can vary from one location to another.

For example, a large hard red winter wheat producer in western Kansas might find that price and yield typically have a high correlation for his operation. When his yields are low, futures prices on the KCBT, and in turn the cash prices he receives for his crop, tend to move higher. And when his yields are high, quite often futures prices on the KCBT move lower. But this may simply not be true to the same extent for another hard red winter wheat producer. That producer may be in an area that is not traditionally associated with large amounts of winter wheat production. The area may not help to define the national average in terms of yield, and may have a lower correlation with futures prices as well.

In both cases, yield and price still are significant risk exposures for each producer. But the extent to which they relate to one another is quite different. An assessment of an operation's risk exposures can help to determine what combination of price tools, such as futures and options, and yield tools, such as crop insurance, is appropriate.

Exchange-traded futures and options and crop insurance products also can be used in tandem to help establish a price for a crop before it is produced. Some operators in the past may have been hesitant to sell futures to lock in a price for the crop ahead of time, before the crop is actually grown. But, perhaps those producers would be comfortable selling futures to lock in a price ahead of time on the portion of their crop that is *insured.*

This is an example of exchange-

traded products and off-exchange products working hand in hand. Crop insurance is but one of the tools that can be used in conjunction with futures and options to help achieve risk management goals.

Other areas that may come to the forefront in coming years include things such as revenue assurance, increased use of forward contracting, labor risk management, and hybrid cash contracts that themselves combine use of exchange-traded futures and options with other tools.

In some cases those operators trying to manage risk themselves will use futures and options directly as a part of integrated strategies. In other cases, the parties working with them, such as elevators and other contract writers, will use futures and options to manage the risk that has been transferred in their direction.

Another risk management tool producers can consider is a minimum price contract, or MPC. Simply put, an MPC guarantees that the buyer will pay the producer a minimum cash price in exchange for the delivery of a fixed number of bushels, with the upside price potential tied to the movement of the underlying futures price. So, if the underlying futures should rally before the grain is delivered, the producer would have the right to reprice his wheat at a higher price.

Using a minimum price contract can accomplish several things. It allows a producer to lock in a price per bushel, thus ensuring himself of a profit, assuming normal production. It also provides him with a way of capturing upside potential should prices rally. MPCs can also provide producers with the courage to market at least a portion of their crop.

However, one of the problems with a minimum price contract is that the strategy provides price insurance but it does not offer any production coverage.

Another tool that can be effectively combined with a minimum price contract is Crop Revenue Insurance or other types of insurance such as revenue assurance or income protection insurance. These new insurance products provide producers with protection from catastrophic losses. By themselves they do not offer a true profit potential. Combining MPCs for price insurance and some type of crop insurance to manage production risk can offer producers a way to create a marketing plan that helps them to manage both price and yield risk.

Stress-Testing

This increased interest in agricultural risk management, brought on in large part by the change in government attitude, has helped to spur the creation of completely new areas and tools that can be used for risk management. These new tools offer tremendous opportunity for American agriculture as we move into the next century. However, a little caution might be advised.

Risk management methods such as straightforward futures trades have been used by some in the business to manage risk for more than a century. But the infancy of many other new tools, as well as new uses for older tools, mean there is a great deal that is still unknown about how those tools will perform.

Therein lies the need for caution. Just because some of these tools are new, or are being used in new ways, should not necessarily disqualify them for use to protect profit potential and manage risk. But it should prompt those in agribusiness to explore every possible outcome that they can imagine before making a financial commitment with these tools.

The basis for making any test on a risk management tool is a thorough understanding of exactly what the tool is and how it works. Without that understanding, it is all too easy for producers to find themselves locked into a product that does not do at all what they thought it would do. Many of the problems that

arose last year with hedge-to-arrive contracts stemmed from the fact that people who were selling the contracts as well as those who were buying them simply did not understand how they worked.

A speaker at a risk management meeting in Kansas City last year called the process of testing a risk management strategy "stress-testing." In other words, operators considering the use of various risk management tools and strategies should first run the tools through some "what if" scenarios to see how they will perform under different market and production conditions. These "what if" scenarios should include the worst possible situation the operator can imagine encountering. The risk management strategy should then be run through this "worst case" scenario to see how it might perform. While the chances that the worst case scenario actually will occur probably are very slim, the operator nonetheless will be aware of all possible outcomes.

When considering the use of various risk management tools, however, agribusiness operators should not only test them with worst case scenarios, but should also look at the other range of possible outcomes. By comparing how a business might have fared using certain tools to how it might have fared without them, an operator can get some assessment of the value of various tools to his own operation. No two operations are exactly alike, and risk management strategies that may be ideal for one might be of little benefit for another.

It is exactly this difference in risk management exposures among various agricultural businesses - whether by size of operation, type of operation, geographic location or other factors - that has helped to create the variety of risk management tools available today. And there are a variety of resources that can be used to aid operators in performing this stress-testing. Local government offices are a good place to start, and other potential resources could include banks, brokers, elevators, insurers and university extension programs.

Conclusion

You may or may not believe that recent changes in government legislation will truly bring about a revolution in the way agribusiness is practiced in the future.

But there is no doubt that the changes in legislation have helped to bring about increased awareness and interest in risk management throughout the agricultural community.

This increased interest in risk management ultimately should translate into increased use of a host of risk management tools, such as forward contracts, minimum price contracts, various types of insurance products, and futures and options. Increased attention to risk management also should translate into more innovation in the ways in which these tools can be used to help control risk.

Will the risk ever be taken completely out of agriculture? The answer to that is no. The risks in a business are often what give those willing to be the risk-takers an opportunity for a greater reward. Instead, the goal in agribusiness risk management must be not to *eliminate* risk completely, but to *reduce* it to an acceptable level.

The changes coming about in agriculture in the United States and worldwide promise to be a challenge to the industry itself, as well as to commodity exchanges that serve it, such as the KCBT. We intend to pay heed to those changes and do all that we can to assist agribusiness in managing its risk in the best manner possible in the future. ▲