
Increased risks in grain marketing create a greater need for risk management tools.

Growing US and global demand for corn and soybeans as expanded commodity production increase the risks in grain marketing. The US federal farm programs provide producers planting flexibility, subsidized crop insurance premiums, and payments decoupled from current production practices. These farms have revenue protection through crop insurance coverage. They can receive payments when deficient crop low yields and/or futures prices are below a farm's crop revenue guarantees.

The expansion of US grain processing since the year 2000 has centered around renewable fuels and the livestock industries. Farmers responded by increasing production of both corn and soybeans, but the supply/demand component has increased price volatility. This increased demand for grain year-round cannot quickly be curtailed when supplies are short, except by an increase in price. At this same time, demand shocks can leave burdensome supplies and low prices. This new marketing environment sets the stage for highly volatile grain prices for the foreseeable future. Also, as farm size increases, expanded capital requirements for grain production can limit some farmers' ability to bear the increased price risks. This, too, creates a greater need for risk management tools.

The grain industry developed several tools to help farmers manage, increasing many of these emerging price risks. Merchandisers at elevators and grain processors provide farmers corn and soybean futures prices through basis and hedge-to-arrive (HTA) contracts. Also, the use of futures options is offered through minimum and maximum price contracts. A farmer pays a small per bushel fee as well as the futures options premium.

The rapid growth of electronic information systems has accompanied the new risk-management tools and the increased price volatility. This publication is part of a series to help producers improve their risk management and more effectively use available tools. It explains the risk-management features of various

grain contracts and essential business practices needed for successfully using grain contracts.

Grain contracting requires sound business principles

Contract details vary amongst elevators, processors, and grain terminals in addition to the type of contract and delivery specification being considered. Common types of contracts include forward cash, basis, delayed price, minimum price, maximum price (for feed purchases), and hedge-to-arrive (HTA) contracts. Other publications in this series discuss important factors for many of these contracts.

Important business principles apply, regardless of the type of contract:

1. Before you sign a contract, know and understand all its features and how they will affect your business. Know how it reduces market risk, where it exposes you to risk, and your obligations.
2. If in doubt, do not sign the contract. Get assistance if you do not understand any aspect of the contract. Ask the grain merchandiser or other buyers and, if necessary, seek legal advice.
3. Know the other party is offering the contract. If possible, have information on the party's financial condition and ability to perform obligations. Be sure the other party can explain to your satisfaction how the contract works under all possible market conditions.
4. Know how your net grain price will be determined under all conditions. If a formula is involved, be sure you understand how it works. Use it to determine what your price would be with extreme market conditions.
5. Understand the implications if your production falls short of the quantity you have contracted to deliver. A production shortfall can have impacts on your net income and financial risk exposure, as well as for meeting contract obligations. The firm that offers the contract establishes a position

in the futures or options market. Thus they have financial obligations that are dependent on your timely fulfillment of the delivery of grain set in the contract.

6. Maintain good communication with the other party to the contract before signing and throughout the life of the contract.
7. Work through a sensitivity analysis using extreme high and low price movements. Consider the consequences if your grain production was to decline well below the contractual volume.

Examine and thoroughly understand each of these areas before you enter a sale or purchase contract. Remember that the contracts are legal instruments that obligate both you and the other party to certain financial commitments.

Key elements in grain contracts

While some details of grain sale or purchase contracts may vary, seven key details should be present in all contracts:

1. The quality (grade) of grain delivered or to be delivered
2. The date by which delivery is to be completed
3. The location for delivery
4. The price or formula to be used in determining the net price
5. Price adjustments if you are unable to meet the specified grade
6. The quantity being contracted
7. Signatures of both parties and date of signing

For example, with hedge-to-arrive (HTA) contracts, alternative delivery dates may be allowed, with extra costs involved. Changes in delivery dates, in turn, may affect price and risk-exposure. The specific process for changing delivery dates should be spelled out. The delivery details are essential to both farmers and grain merchandisers since delivery is required for the completion of contractual obligations. Some contracts also have conditions that apply if special circumstances prevent an elevator from receiving the grain by the scheduled date. Contracts also may have provisions to be used when the farmer's crop is below the contracted volume or quality specification due to adverse weather or other unforeseen conditions. Revenue protection crop insurance can overcome much of the concern

about futures price volatility through the use of the higher of the spring projected price or harvest price for determining revenue shortfalls.

Risk management features and purposes of various contracts

Grain prices and price risk can be separated into three components: **price level** (as reflected by futures prices), the **basis** (the difference between the local cash price and the futures price), and **spreads** (which reflect price differences between the futures contract months). Some grain pricing contracts manage only one or two of these sources of risk. Others are designed to eliminate or help achieve all three types of market risk. (See Tables 1 and 2.)

Price-related risks are not the only areas of risk exposure facing grain farmers. Other risk areas might include **production risk** and **the potential failure of the contracting party to fulfill its obligation**.

When a farmer prices a crop before harvest, he or she increases exposure to production risk but, depending on the kind of contract used, may reduce exposure to lower prices. If production risk is large enough to cause serious financial concerns, farmers using pre-harvest grain contracts may want to consider revenue protection crop insurance to help manage such risks.

Some kinds of grain contracts require only one decision: the decision to use the contract, such as a forward cash contract. Other contracts may require one or more decisions at later times, such as a basis contract. When a series of decisions must be made to complete contractual obligations, another type of risk called **control risk** is involved (See Table 2). This is the risk that the market position will reduce income to an unacceptable level before the farmer is aware of the implications and can take preventative or corrective action.

View contracts either to reduce risk exposure or, in some cases, as an alternative to storage that will accomplish similar purposes. Do not view contracts as a source of profits by themselves. In grain contracting, the entire position should be considered, including the futures price, cash price, remaining areas of risk exposure, and the level of net income being protected.

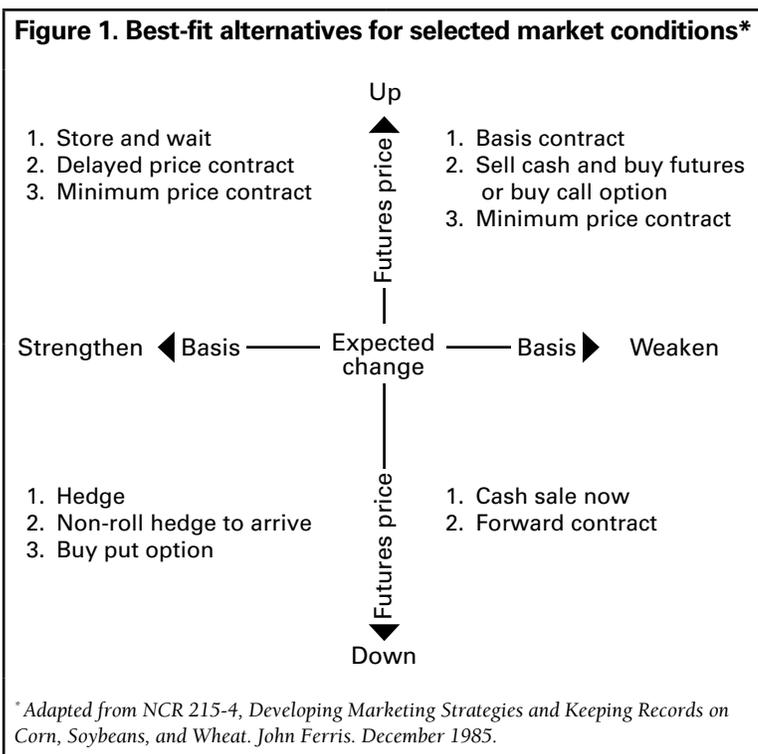
About this series

Other publications in this series provide more detail on risk-management features, pricing processes, and considerations in using specific types of grain contracts. Contracts covered in the series include forward cash, basis, delayed pricing, minimum price, maximum price (for feed purchases), and hedge-to-arrive (HTA) contracts. See the [Ag Decision Maker Crop Marketing page](#) for a complete listing, www.extension.iastate.edu/agdm/cdmarkets.html.

Tailoring choice of contract to your marketing, risk management needs

The type of contract that best fits your marketing objectives and risk management needs probably will vary with market conditions. Figure 1 illustrates the market conditions that best suit various types of contracts. Several of these types of contracts leave partial exposure to market risk.

Market conditions are segregated by the expected direction of futures price level and basis change.



For example, suppose the basis is unusually strong for your area at the time you are making a pricing decision. This means local cash prices are unusually strong relative to the nearby futures price.

Table 1. Risk exposure with various grain pricing alternatives and contracts¹

Pricing alternatives	Areas of risk exposure								Industry risk rating
	Price level	Basis	Intra-year spreads	Options volatility	Production risk if pre-harvest	Tax risk	Counter party risk	Control risk	
Cash market	X	X	X					X	Low
Forward cash					X		X		Low
Basis	X		X ²		X	X	X	X	Moderate
Price later	X	X			Not applicable	?	X	X	Moderate
HTA: non-roll		X			X	X	X	X	Low
HTA: intra-year roll		X	X		X	X	X	X	Moderate
Minimum price				X	X	X	X	X	Low

¹ An X in the table cell indicates the pricing alternative has significant exposure to the risk.

² Spread risk occurs if spreads change due to action in nearby futures, but a basis contract is based on a later futures contract month, such as July. Narrowing spreads would mean the cash and nearby futures prices could rise more than the price obtained from the basis contract. Also, on rare occasions, basis contracts are rolled to provide the farmer with a longer period for choosing a price. This can involve spread risk, especially if rolled to the next crop marketing year.

Table 2. Types of risk

Price-level risk—the risk that futures prices will change in an adverse direction from the present level. This risk typically is significant and challenging to predict.

Basis risk—the risk that the difference between the local cash price and the futures price will move in a direction reducing the net price to the seller. This risk is usually much smaller than futures price level risk and the intra-year spread risk. It has a strong seasonal pattern in major corn and soybean production areas. However, transportation, weather problems as well as other unforeseen developments, can alter its seasonality.

Spread risk—the risk that price differentials between nearby and deferred futures will move in a direction reducing your net price. Spread risk within a single crop marketing year is typically relatively small. Still, it can be sizable in years when supplies are incredibly tight. This risk in the 1990s involved when using hedge-to-arrive contracts that involved rolling the delivery date forward to multiple crop years. Inter-year spread risk is much more substantial and unpredictable and no longer offered by the grain industry.

Market-volatility risk with minimum price contracts—the risk that the net price on such contracts will not change one-for-one with cash and futures prices as the price level rises. The same kind of risk exists with maximum price contracts used for feed purchases. The size of this risk varies with market volatility and the length of time until contract delivery. It tends to be most significant with volatile markets and when the delivery date is several months away.

Tax risk is typically dependent upon whether a farmer managing futures price risk of grain is hedging or speculating. You are hedging if you have crops in the field or in the bin to offset your futures position. If you sell the crop out of the field and then buy it back via futures contracts, you are speculating. If you only raise 50,000 bushels of corn but have 100,000 bushels sold on the board, you are speculating on the extra 50,000 bushels. Farmers that want to hedge and speculate should keep separate commodity accounts to keep transactions straight for income tax purposes.

If you are hedging (selling a futures contract), the profits or losses are usually reported on your Schedule F. They are subject to income and self-employment tax. If you are speculating the profits or losses, end up on Schedule D. If they are profits, you only pay income tax but no self-employment tax (sole-proprietors). If you have losses, it is a capital loss. It can only be offset by capital gains, or if there are no capital gains, then you are allowed to use \$3,000 per year until the loss is used up. The exception would be if you are a C Corporation, and then the losses can only be offset by capital gains.

Another difference is that if you are hedging, you only report profits or losses on positions that have closed during your tax year. If you are speculating, they are considered marked-to-market, and profits or losses are also based on the value of open positions at the end of the tax year.

Counterparty risk—the risk that the buyer will be unable to perform part or all his or her contractual obligations or will be unable to pay for your grain. This risk is especially crucial for credit-sale contracts, in which the title of grain has been transferred to the buyer, such as a basis contract. Still, the entire payment has not yet been received. In Iowa and many other states, credit-sale contracts do not have the same financial safeguards available for more standard contracts. This risk also may be a consideration with any type of contract in which title to the cash grain has been relinquished.

Control risk—the risk that contract provisions will get out of control. Some contracts require several stages of decision-making beyond the initial contract signature. With these contracts, there is a risk that market action will move the producer's net price received to an unacceptable level before they realize what is happening and can take corrective action.

Suppose that you believe there is a good chance the level of the futures price will rise. Also, suppose that you are concerned that the basis may weaken. Still, you would like to participate in the potential for a higher futures price. Alternatives to manage these risks include using a basis contract, selling the grain, and buying a futures contract, or selling the grain and buying a call option.

Now suppose that you expect the level of the futures price to increase and the basis to strengthen. In that case, you might want to consider storing the grain or selling on a delayed price contract or minimum price contract. If you expect both the futures price and the basis to weaken, you may want to consider selling the grain immediately in the cash market or forward contracting. When you expect the level of futures prices to decline but the basis to strengthen, risk management alternatives may include sales using a non-roll HTA contract and fixing the basis or hedging (selling futures). Your local basis patterns and market conditions should be tracked over five years to anticipate basis changes successfully.

Consider minimum price contracts when you are unsure of the direction for futures price movement, but believe there is a reasonable chance prices will rise. Minimum price contracts are based on futures options markets and various strike prices. These contracts give you the ability to benefit if the futures market prices rise sharply. Still, your only cost is a small service fee and the option premium.

Conclusions

Grain contracts are essential tools for managing price and income risk in the volatile price environment of the early 21st Century. Successful use requires a complete understanding of how various contracts work, the kinds of risk they are designed to control, and the areas of risk that remain after the contract is signed. Some contracts require only one decision: whether to use the contract. More complex types require one or more decisions after the contract is signed. Good business rules in grain contracting are (1) understand the contract **before** you sign it, (2) know and communicate with the firm or individual with whom you are doing business, and (3) understand the decision processes required for successfully using the contract(s) you select.

Disclaimer

This publication provides educational information to help you understand the risk-management features of grain contracts. It is neither a legal document nor an endorsement of any type of contract by Iowa State University Extension and Outreach. Contract details vary. Some contracts may have provisions not included here. Understand a contract **before** you sign it. Seek professional assistance if there are details you do not understand. Before entering the contract, everyone should evaluate his or her risk exposure to extreme market movements.

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