

Understanding Risk in Basis Contracts

Basis contracts involve downside risk as well as upside price potential.

Basis contracts are marketing instruments that establish the basis (the difference between the local cash price and futures price) used to determine the cash price paid for grain or soybeans at a later time. In crop marketing, $\text{basis} = \text{the cash price} - \text{the futures price}$, or written another way, $\text{cash} = \text{futures} + \text{basis}$. Crop marketing contracts have three basic forms. A cash contract sets the cash price (and therefore, the basis and futures price as well) paid for crops. A futures contract, such as a hedge or hedge-to-arrive contract, locks in the futures prices, but leaves the basis and final cash price still undetermined. A basis contract allows an individual to lock in the basis level before establishing the final futures or cash price.

The only component of price risk that basis contracts establish or lock in for the producer is the basis. Futures prices, and the resulting cash prices, can still change—moving up or moving down. The producer or other seller bears the risk of any changes in futures price levels over the life of the contract. They also bear any relevant spread risk that may develop over the life of the contract if it uses a later futures delivery month than the nearby contract.

In other words, basis contracts let a producer lock in a basis that they believe is more favorable than one that will exist later. At the same time, basis contracts allow the decision on establishing a cash price level to be delayed until a later time. In post-harvest basis contracts, the grain typically is delivered to the elevator and the title is transferred to the buyer at that time. These contracts allow the seller to retain the opportunity to benefit from a possible rise in the level of futures prices later, while avoiding storage.

Users of basis contracts should keep in mind that price movements can be very difficult to predict and that downside risk as well as upside price potential exists with these contracts. Hence, as a risk management tool, basis contracts manage only one relatively small component of price. Users of basis contracts also should be aware that part of the normal rise in cash prices from harvest to the spring planting season is due to a strengthening basis. While basis contracts eliminate storage costs, if used in the fall, they also eliminate this usual source of gain in cash prices.

Differences between basis and price-later contracts

Basis contracts have one, or sometimes two, important differences from price-later (or delayed price) contracts. First, basis contracts establish the basis when the contract is signed; price-later contracts do not do this—thus, price-later contracts do not let producers separate the individual components of cash price movements, futures, and basis. Both basis contracts and price-later contracts allow producers the opportunity to delay the pricing decision until later, while avoiding storage. But in a price-later contract, both basis and futures are allowed to change and the elevator's cash price to the producer, less a service charge, is determined at a later time set by the producer. For a basis contract, only the futures price is allowed to change.

The other difference often found in basis contracts is that elevators or processors may pay a portion of the value of the grain at the time it is delivered to the buyer. Since basis contracts are credit-sale contracts, the partial payment reduces the producer's risk exposure in case of an elevator bankruptcy. The extent of risk exposure with financial failure of the elevator may vary from state to state, with differences in laws and indemnity funds.

Potential uses for basis contracts

If producers are experienced and knowledgeable in analyzing the basis, these contracts can help them manage basis movements. Basis contracts may be a logical choice when:

- The local basis is considerably stronger than the average of recent years
- The seller feels there is a high probability that the level of futures prices will rise later on
- The seller is willing and able to bear the risk of declining prices

If used during harvest, basis contracts would usually (but not always) lock in one of the weakest basis levels of the year and often would be a disadvantage to producers. A more logical time for using basis contracts is after harvest, when the basis has strengthened. Occasionally a crop buyer will offer pre-harvest basis contracts for fall delivery. At times when the new-crop harvest-delivery basis is unusually strong and futures prices appear to have upside potential, there may be favorable opportunities to price with basis contracts.

With these market conditions, however, producers should be aware that a few cents gain in basis could be quickly offset by a drop in the level of futures prices. Producers who use basis contracts should be aware that a similar position would exist if they sold crop under a cash contract and retained ownership through futures contracts.

The futures market equivalent would be to sell the crop, and buy futures contracts for later delivery, for example, July futures contracts. Using the futures purchase alternative:

- The producer would get 100 percent of the value of the crop at time of delivery to the buyer, thus eliminating risk exposure in case of later bankruptcy of the elevator.
- The producer, rather than the elevator, would be responsible for margin deposits and margin calls on the futures position. Because of basis differences, these positions will not exactly follow local cash price movements.

Details to look for in a basis contract

Typical contract details apply to basis contracts. (See ISU Extension and Outreach publication “[About Grain Contracting: Commonly Used Grain Contracts](https://store.extension.iastate.edu/Product/5240),” PM 1697A, <https://store.extension.iastate.edu/Product/5240>.) At a minimum, the written contract should specify:

- The quantity of crop sold
- The time and place it was or will be delivered
- Its grade
- The formula to be used in establishing the net price, and the futures contract month to be used for pricing
- The length of time the seller has to choose his or her price
- Signatures of both the buyer and the seller
- The date the contract was signed

If the crop has not yet been delivered, procedures for adjusting the price for quality variations also should be included. Contract provisions may vary from one elevator or processor to another and may include other items not listed here. Some states require a statement related to risk exposure because of the credit-sale nature of these contracts.

Basis contracts sometimes include details on a partial advance payment to the producer at the time the crop is delivered to the buyer. The size of the cash payment, or whether one is made at all, may depend on the buyer and market volatility. Advance payments of 60-70 percent or more of the value of the crop sometimes have been made on these contracts. Also, some buyers may have a service charge on basis contracts. For others, costs of providing this service may be built into the basis that will be used to determine the net price.

Cautions in basis contracts

Basis contracts allow the producer to protect only a small part of the price risk, namely the basis. The net position is nearly identical to that from purchases of an equal amount of futures contracts. In basis contracts, the elevator holds the futures position for the producer but the producer is obligated for financial losses in the futures position.

Spread risk is involved if the producer expects a basis contract entered into at harvest and placed in July futures to precisely follow movements in cash prices. In years of tight supplies, nearby futures can rise above July futures, thus increasing the cash price but not necessarily the basis contract price. This situation is known as an inverted market and is not a desirable market environment for use of basis contracts.

Occasionally basis contracts are rolled forward to provide a longer period for producers to wait for higher prices. (See Example 1.) When these contracts are rolled to later delivery months than originally specified, exposure to additional spread risk can be involved. If the rolls are from one crop year to the next, risk exposure can be large. Risk exposure occurs when nearby futures and cash prices do not follow the movement of distant futures prices.

Conclusion

Basis contracts add flexibility to producers marketing grain and soybeans. While they are not useful every year, basis contracts can be a helpful marketing tool at times when the basis is much stronger than normal and when market conditions suggest a further rise in futures prices is quite likely.

Example 1. Rolling a basis contract

On September 26, a producer sold early-harvested soybeans on a basis contract.

- Cash price was \$9.70/bushel; basis was \$0.21 under November futures
- Futures prices were November, \$9.91/bushel; January, \$10.00/bushel; July, \$10.01/bushel
- Elevator buys July futures, \$10.01/bushel
- Producer enters basis contract at \$0.25/bushel under July futures; has until June 20 to select price
- Producer takes partial cash payment, 80 percent of current contract price of \$9.76/bushel (\$7.81/bushel)

The December 26 cash price was \$8.71/bushel.

- January futures price was \$9.02/bushel; July, \$8.90/bushel
- Contract price (if priced December 26), \$8.65/bushel

Note: The basis contract would yield \$0.06 less than the cash market, \$1.11 less than the September 26 contract value, and \$1.05 less than the September 26 cash price. The \$0.06 less than the current cash price would be due to January-July spread deteriorating (from +\$0.01 in September to -\$0.12 in December), partially offset by a stronger contract basis than current cash basis.

- Spread deteriorated by \$0.13; current spread was -\$0.12
- Contract basis was -\$0.25 vs. -\$0.31 for cash basis (a gain of \$0.06 vs. cash market)
- Net vs. cash price (-\$0.12 spread + \$0.06 better basis = -\$0.06)

On June 20, the producer wanted to delay pricing, waiting for the summer weather market.

- Cash price was \$8.70/bushel.
- Producer rolled contract to September futures, has until August 20 to choose price
- Elevator sold July futures at \$8.90/bushel, has loss of \$1.11 on trade (\$10.01-\$8.90=\$1.11)
- Elevator bought September futures, \$8.70/bushel. (July-September spread, -\$0.20)

On August 18, the producer priced the soybeans and the elevator sold September futures at \$8.20, for a loss of \$0.50.

Elevator's net futures position

- \$1.11 Loss on July trade
 - \$0.50 Loss on September futures

 - \$1.61 Combined loss on futures

Elevator's cost of beans

\$7.95 Final cash price paid to producer
 + \$1.61 Loss on futures positions

 \$9.56* Combined cost to elevator

* Per bushel, \$0.20 below previous September contract value because of July-September spread at -\$0.20, which was not expected when contract was signed

On August 18, the producer priced out the contract.

- Cash soybeans at \$9.00/bushel.
- September futures at \$8.20/bushel.

Producer's net contract price

\$8.20 September futures prices
 \$0.25 Less the basis agreed to in the basis contract

 \$7.95** Net cash price to producer

** Per bushel, \$0.25 below the partial payment received the previous September; elevator owes producer \$0.11 (less any charges for rolling the position).

If using basis contracts, be aware of the exposure to price risk and risk on the unpaid value of the crop in case of a possible elevator financial failure. In fact, in a highly volatile market, risk exposure can include part of an advance payment on these contracts if an advance was made. Before signing a basis contract, be sure to understand the pricing formula and the futures contract month that will be used to determine the net price.

In an unusual situation where rolling of basis contracts is allowed, be aware of the price and spread risks involved before rolling.

Finally, keep in mind that basis contracts manage only one of the three components of price risk – the basis. Price-level risk typically is much greater than basis risk. And spread risks can also be far greater than basis risk, depending on market conditions and the length of time a seller is given for selecting the price.

To a degree, basis contracts are a risk management tool. They remove basis risk. But, they involve risks inherent in storing unpriced crop. Cash and futures price risk are still relevant under basis contracts. In some cases, risks under basis contracts can exceed those from unpriced storage, especially when rolling of the contracts is allowed.

Disclaimer

This publication provides educational information to help you understand risk-management features of crop contracts. It is neither a legal document nor an endorsement of any type of contract. 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 into the contract, each individual should evaluate his or her risk exposure with extreme market movements.

Developed by Robert Wisner, extension economist, Department of Economics, Iowa State University; in cooperation with the Iowa Farm Bureau Federation Risk Management Task Force: farmers, elevator staff, lenders, accountants, merchandisers, regulators, farm advisers, and ISU Extension and Outreach economists. Revised by Chad Hart, associate professor in economics and extension economist.

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