

The Futures Hedge (Short Hedge)

by Mark B. Major, MSU Teton County Extension Agent, and Alan May,
South Dakota State University Extension Grain Marketing Specialist

By utilizing futures contracts, Montana grain producers have access to enhanced marketing opportunities. This Montguide breaks the process down step-by-step.



MontGuide

MT200919AG New 12/09

THE FUTURES (SHORT) HEDGE IS A PRICING

method in which a producer of spring wheat and winter wheat can establish a futures price for the specific commodity prior to the actual delivery. This method locks in the futures price for grain to be delivered at a later date. This strategy accomplishes the same thing as a cash forward contract by establishing a price prior to delivery, but it does have some advantages and disadvantages to consider. This strategy involves the sale of a futures contract through a commodity futures exchange using a commodities broker.

By selling a futures contract, the producer promises to do one of two things to fulfill the obligations of the contract. Before the contract expires, the seller must off-set the initial futures contract sale by either delivering the grain to a specific delivery point or by simply buying back the contract. When this off-setting contract purchase is made, the producer is then able to sell the grain at any local elevator of his choice.

There are two basic principles that must be understood when using a futures hedge to establish a selling price prior to actual delivery of grain. The first principle is that of "margin". The second principle is "basis".

Margin: Using winter wheat as an example, a wheat producer can establish a price for new crop wheat prior to harvest by selling a Kansas City Board of Trade September winter wheat futures contract through a commodities brokerage firm. Prior to making this sale, the wheat producer must establish an account with a brokerage firm. The producer will provide the firm with some basic financial information and will be required to deposit funds (margin) with the firm. These funds are used to cover adverse moves in the contract price. The margin amount that must be maintained at all times is set by the brokerage firm but

is subject to the minimums required by the particular exchange (in this case, the Kansas City Board of Trade) where the commodity is traded.

After the producer sells a September wheat futures contract, what happens to the margin account if the futures price changes? If a price change in the September wheat contract occurs that results in a loss in the producer's position from one day to the next, funds will be withdrawn from that producer's account to cover the loss. If the loss is sufficient to draw the account below the minimum amount of cash required in the account, the producer receives a margin call to bring the account back up to the minimum dollar amount required by the grain exchange. However, if the price change results in gains in the wheat producer's futures position, the gain will be credited to the producer's account. Although the wheat producer can withdraw gains from this account at any time, gains are typically left in the account until the contract is closed by an off-setting trade.

Futures Price
+/- Basis
- Transaction Costs
= Local Cash Price

Basis: Basis is defined as the cash price minus the futures price. Basis can be calculated by subtracting the daily closing futures price of the nearby grain futures contract from the daily cash price of that same grain commodity. This is called the near term basis. Since cash grain prices in Montana are typically lower than futures prices, Montana basis is usually a negative number. Basis can also be calculated by subtracting a specific contract month's price from the local daily cash price. This process illustrates how basis changes over time.

Basis is an estimate of storage costs, transportation costs, profit margins for sellers, and quality variations from those listed in the futures contract specifications. However, specific local supply and demand conditions can also impact basis. The costs listed in the examples on the following pages are deducted from the futures price to arrive at a locally offered cash price.

Basis has seasonal patterns that can be used to develop strategies for selling or holding grain. If the producer knows the historical seasonal pattern for basis in his area, they will be able to estimate what basis might be at harvest or other times of the year. Having a sound understanding of basis will help them evaluate any hedging strategy utilizing futures or options. It is also important in evaluating cash forward contracts, minimum price contracts, and hedge to arrive contracts, as well as evaluating cash prices offered at any given point in time during the year.

What are the benefits of a futures (short) hedge?

By locking in the futures price on the futures market, downside price risk is eliminated. If basis improves to a level that was not expected, the producer can profit from this basis improvement because the actual cash price is better than expected when the hedge was placed. There is also no contract obligation to deliver grain to a local elevator, so if crop loss occurs and they are unable to produce any bushels, the producer simply buys back the contract at a profit or a loss on the futures board. Short hedges are easy to enter and exit since producers are working with a broker who handles all the transactions through the futures exchange.

What are the disadvantages of a futures (short) hedge?

By locking in the futures price with a hedge, the producer has eliminated the risk of price change, higher or lower. Although they locked in a floor price to protect against lower prices, they have also locked in a ceiling price. The producer's risk is now basis risk - the risk that the basis will be different than estimated. The producer also has margin risk so they must have sufficient funds to make all margin calls. The contract size may not be flexible enough for some grain producers. A futures contract requires the commitment of 5,000 bushels per contract so producers must be prepared to commit that amount to one pricing strategy.

When would you typically use a futures (short) hedge?

A short hedge is typically used when price levels offered prior to harvest, for example, allow the grain producer to achieve his price objectives. Some producers may use a short hedge because there is no delivery requirement to a local grain elevator as would be the case with a cash forward contract. Some will use a hedge because of the hope for basis improvement by harvest.

How does a futures "short" hedge work?

Let's use the following example: Assume you are a winter wheat grower who wants to establish a price in early April for the wheat you will harvest in August. For this example, we will assume harvest will be completed on August 15th.

You decide to sell a September winter wheat futures contract on the Kansas City Board of Trade valued at \$6.00 per bushel on April 1. Historically, your local harvest time basis for wheat averages - 50 (50 cents under the harvest time value of September wheat futures). As a result, your expected harvest cash price is:

$$\begin{array}{r}
 \$6.00 \text{ (Sept. future)} \\
 - .50 \text{ (est. harvest basis)} \\
 \hline
 - .05 \text{ (transaction cost)} \\
 = \$5.45/\text{bu.}
 \end{array}$$

Regardless of the value of September wheat futures on August 15th, you locked in the contract price of \$6.00 per bushel when you sold the contract on April 1. The only way you will not achieve your expected \$5.45 harvest time cash price is if the actual harvest time basis is different than the - 50 you anticipated on April 1st. Three harvest price scenarios are shown below. Prices in these scenarios are for educational purposes and do not reflect current prices.

Scenario 1: On April 1st, you sell a September winter wheat futures contract for \$6.00 per bushel. On August 15th the September wheat futures contract is still valued at \$6.00 per bushel. The basis offered by your local elevator on wheat that day is the - 50 you expected. What is the final price for the wheat you hedged?

Expected
Hedge Price

April 1: Sell Sept. Fut. \$6.00 (est.) - 50 = (\$5.50)
 Aug. 15: Buy Sept. Fut. \$6.00 (act.) - 50
 Aug. 15: Sell cash wheat @ \$5.50

Actual					
Cash Price	Futures gain/loss	Trans. cost	Hedge price		
\$5.50	+/-	0.00	- .05	=	\$5.45

Futures price did not change; no futures gain or loss.

Scenario 2: On April 1st, you sell a September winter wheat futures contract for \$6.00 per bushel. On August 15th the September wheat futures contract has dropped in value to \$5.00 per bushel. Cash prices have also dropped but the basis offered by your local elevator for wheat that day is the - 50 you expected. What is the final price for the wheat you hedged?

Expected
Hedge Price

April 1: Sell Sept. Fut. \$6.00 (est.) - 50 = (\$5.50)

Aug. 15: Buy Sept. Fut. \$5.00 (act.) - 50

Aug. 15: Sell cash wheat @ \$4.50

Actual

<u>Cash Price</u>	<u>Futures gain/loss</u>	<u>Trans. cost</u>	<u>Hedge price</u>
\$4.50	+/- 1.00	- .05	= \$5.45

Futures prices moves lower by harvest; futures gain on off-setting purchase of contract. Cash prices also moves lower.

No additional margin is paid by wheat producer. Gain in the futures market deposited in the margin account off-sets the loss in the cash market

Scenario 3: On April 1st, you sell a September winter wheat futures contract for \$6.00 per bushel. On August 15th the September wheat futures contract has increased in value to \$7.00 per bushel. Cash prices have also increased but the basis offered by your local elevator for wheat that day is the -50 you expected. What is the final price for the wheat you hedged?

Expected
Hedge Price

April 1: Sell Sept. Fut. \$6.00 (est.) - 50 = (\$5.50)

Aug. 15: Buy Sept. Fut. \$7.00 (act.) - 50

Aug. 15: Sell cash wheat @ \$6.50

Actual

<u>Cash Price</u>	<u>Futures gain/loss</u>	<u>Trans. cost</u>	<u>Hedge price</u>
\$6.50	+/- 1.00	- .05	= \$5.45

Futures price moves higher by harvest. Futures loss occurs on off-setting purchase of contract. Cash price also moves higher. Additional margin paid by producer equals \$1.00 per bushel x 5000 bushels = \$5,000.00. The additional margin paid by producer (futures loss) is off-set by higher value of wheat in the cash market.



To order additional publications, please contact your county or reservation MSU Extension office, visit our online catalog at www.msuextension.org/publications.asp or e-mail orderpubs@montana.edu

Copyright © 2009 MSU Extension

We encourage the use of this document for nonprofit educational purposes. This document may be reprinted for nonprofit educational purposes if no endorsement of a commercial product, service or company is stated or implied, and if appropriate credit is given to the author and MSU Extension. To use these documents in electronic formats, permission must be sought from the Extension Communications Coordinator, 115 Culbertson Hall, Montana State University, Bozeman MT 59717; E-mail: publications@montana.edu

The U.S. Department of Agriculture (USDA), Montana State University and Montana State University Extension prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Douglas L. Steele, Vice Provost and Director, Montana State University Extension, Bozeman, MT 59717.