

MU Guide

Long Hedge Example with Futures

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This guide describes how to place an input (long) hedge in the futures market to reduce the price risk associated with buying an input. For example, assume that Heidi, a swine producer, knows she will be buying a pen of feeder pigs two months from now. To feed the pigs, Heidi will need 5,000 bushels of corn (one full contract at the Chicago Board of Trade) during the next four months to use in the production of feed. Corn is an input into the production of swine. Currently, the local cash corn price is \$2.35/bushel, and Heidi believes that the price may rise during the next few months. She calculates her cost of production and knows that \$2.35/bushel will allow for profit potential. What can Heidi do to protect against higher prices for the corn she needs? She could purchase the grain now but would have to pay for storage during the next few months, increasing the cost above \$2.40/bushel. Alternatively, Heidi could wait to buy in the cash market while entering the futures market now to offset any potential cost increase (increase in price) with a gain in the futures market.

How do I place a hedge?

Placing a hedge can be a simple process. First, knowing your cost of production helps you know when to place a hedge. To place a hedge, you need to contact a broker. Most large communities have brokers who will take your order for a set fee (as is common when placing any order in the futures/options market). A broker can help you understand how to place and exit your hedging position. The broker has a stake — a commission — in making sure your experience with hedging is a good one. After you have placed the order, the broker will contact a brokerage house at the commodity exchange and relay the order. On the floor of the trading commission, market supply and demand forces are matched so that if you place a long hedge, there will be someone to take the opposite position — a short hedge.

What can happen?

Any of seven scenarios can arise between the cash and futures price. The only common scenario not

discussed below is that of the cash and futures prices not changing while the hedge is placed. In this scenario, the producer purchases the input for the same price as when the hedge was placed. The costs of hedging would then simply be commissions. Note that even though a loss may be shown from taking a futures position, the final price must be compared with purchasing the good in advance and paying storage costs or waiting and buying in the cash market unprotected. Because the cash and futures markets typically trend in the same direction, the scenario of the two markets moving in opposite directions is not discussed.

Cash and futures prices both increase

Cash price increases more than futures price. In this scenario, basis is said to strengthen. Using Table 1, suppose you could purchase corn today for \$2.35/bushel and the relevant futures contract is trading for \$2.50/bushel (basis is \$0.15 under). Knowing that you will need the corn at a later date and you want to protect against a price increase, you take a long position in the futures market. Over the next few months the local cash price increases to \$2.60/bushel and the futures price increases to \$2.65/bushel. At this time you decide you need to purchase corn for feed. You purchase the corn in the cash market for \$2.60/bushel and sell back your futures position for \$2.65/bushel. Therefore, the cost of the grain to you is \$2.60/bushel less \$0.15/bushel gained from the futures position plus any commission

Table 1. Long hedge with futures as cash price increases.

Cash price increases more than futures price		
Cash	Futures	Basis
Today: \$2.35/bu	Buy corn contract at \$2.50/bu	-\$0.15/bu (under)
Later: Buy corn in local market at \$2.60/bu	Sell corn contract back at \$2.65/bu	-\$0.05/bu (under)
Results	Cash paid price \$2.60/bu Plus commission \$0.01/bu Less futures gain \$0.15/bu Net buying price \$2.46/bu	\$0.10 basis loss

costs (a typical commission might be \$25 for entry into the futures and \$25 for exit, \$50/round-turn or about \$0.01/bushel). Instead of paying \$2.60/bushel, you pay \$2.46/bushel. The net price you receive is the original cash price plus the basis gain or loss plus commission.

Futures price increases more than cash price. In this scenario, basis is said to weaken. Again, suppose you could purchase corn for \$2.35/bushel and the relevant futures contract is trading for \$2.50/bushel (basis is \$0.15 under). Knowing that you will need the corn at a later date and you want to protect against a price increase, you take a long position in the futures market. Over next few months the local cash price increases to \$2.45/bushel and the futures contract price increases to \$2.65/bushel (see Table 2). At this time you decide you need to purchase corn for feed. You purchase the corn in the cash market for \$2.45/bushel and sell back your futures position for \$2.65/bushel. Therefore, the cost of the grain to you is \$2.45/bushel less \$0.15/bushel gained from the futures position plus commission. Instead of paying \$2.45/bushel you pay \$2.31/bushel. Again, the net price you receive is equal to the original cash price plus the basis gain or loss plus commissions.

Table 2. Long hedge with futures as cash price increases.

Futures price increases more than cash price		
Cash	Futures	Basis
Today: \$2.35/bu	Buy corn contract at \$2.50/bu	-\$0.15/bu (under)
Later: Buy corn in local market at \$2.45/bu	Sell corn contract back at \$2.65/bu	-\$0.20/bu (under)
Results	Cash paid price \$2.45/bu Plus commission \$0.01/bu Less futures gain \$0.15/bu Net buying price \$2.31/bu	-\$0.05 basis gain

Futures price increases at the same rate as the cash price (no change in basis). Under this scenario the price you pay equals the price you would have paid earlier with the exception of commissions (\$0.01/bushel). There is no basis change in this example, and the net price is equal to the original cash price plus commissions.

Cash and futures prices both decrease

Cash price decreases more than futures price. In this scenario, basis is said to weaken. Assume the same conditions as in the previous examples except that here

Table 3. Long hedge with futures as cash price decreases.

Cash price decreases more than futures price		
Cash	Futures	Basis
Today: \$2.35/bu	Buy corn contract at \$2.50/bu	-\$0.15/bu (under)
Later: Buy corn in local market at \$2.20/bu	Sell corn contract back at \$2.40/bu	-\$0.20/bu (under)
Results	Cash paid price \$2.20/bu Plus commission \$0.01/bu Plus futures loss \$0.10/bu Net buying price \$2.31/bu	-\$0.05 basis gain

the local cash price decreases to \$2.20/bushel at a later date and the futures contract price decreases to \$2.40/bushel (see Table 3). Therefore, the cost to you is \$2.20/bushel plus \$0.10/bushel lost from the futures position plus commission costs (\$0.01/bushel). Instead of paying \$2.20/bushel, you pay \$2.31/bushel.

Futures price decreases more than cash price. In this scenario, basis is said to strengthen. Assuming the same starting conditions as in the previous examples, suppose that the local cash price decreases to \$2.20/bushel and the futures contract price decreases to \$2.25/bushel at a later date (see Table 4). Therefore, the cost to you is \$2.20/bushel plus \$0.25/bushel lost from the futures position plus any commission costs. Instead of paying \$2.20/bushel, you pay \$2.46/bushel because basis strengthened.

Table 4. Long hedge with futures as cash price decreases.

Futures price decreases faster than cash price		
Cash	Futures	Basis
Today: \$2.35/bu	Buy corn contract at \$2.50/bu	-\$0.15/bu (under)
Later: Buy corn in local market at \$2.20/bu	Sell corn contract back at \$2.25/bu	-\$0.05/bu (under)
Results	Cash paid price \$2.20/bu Plus commission \$0.01/bu Plus futures loss \$0.25/bu Net buying price \$2.46/bu	\$0.10 basis loss

Futures price decreases at the same rate as the cash price. Under this scenario, the price you pay equals the price you would have paid earlier, with the exception of commissions (\$0.01/bushel). The net price you receive is equal to the original cash price plus the commission since there was no change in the basis.

