



## CBOT® Agricultural Futures &amp; Options

# ESTABLISHING A FEED COST RANGE FOR DAIRY OPERATIONS

## *Choosing a feed cost range from a range of alternatives*

**N**othing ever changes when it comes to market risk—it will always be there. You don't have to like it but you do need to manage it. Managing your feed cost price risk can enhance your firm's bottom line and that's a key goal for any dairy operation.

Market risks include two components, regardless of where your business operation is located—price and basis. Prices for feed grains, like corn and soybean meal, are discovered in the Chicago Board of Trade (CBOT®) futures markets. Basis is the relationship between a local cash market (e.g., feed supplier) price and the related CBOT futures price.

Futures, options, cash market contracts, or combinations of these make possible a variety of strategies for managing the price risk associated with feed costs. The most basic futures strategy to protect feed costs is the Long Futures Hedge. This strategy provides protection against rising prices. The most basic option strategy to protect feed costs is the Long Call Option Hedge. This strategy is similar to the futures strategy in that it protects your business against rising feed prices, but unlike the futures strategy, it gives you the opportunity to take advantage of falling feed prices.

You might be asking why everyone wouldn't choose options over futures. There are several reasons. Most importantly, the protection and the opportunity of the Long Call Option strategy is available at a cost to you—the premium. Therefore, there are times when the long futures hedge will out perform the long call option strategy. This usually occurs when feed prices are rallying and your price risk is greatest. In this case the futures strategy will out perform the option strategy by the amount of premium paid.

When evaluating price risk management strategies, some dairy operations may shy away from options because they feel the option premiums are too costly. If that is the case, you should be aware of another strategy that provides the same benefits and opportunities as the Long Call Option position, but at a lower cost.

### **Long Call Option/ Short Put Option Hedge.**

The benefit of combining a short put position with the long call position is that the cost of protection against rising feed prices is reduced by the amount of premium you collect for selling the put option, thereby lowering the maximum (ceiling) feed price. The downside to this strategy is that the short put option position establishes a minimum (floor) feed price when the market is declining.

The **feed cost price range** is determined by the difference in the strike prices of the call and the put. Since there are many different strike prices to choose from, your business operation will be able to choose the price range that seems optimal given your market outlook.

#### *Advantages*

- Provides price risk management against higher feed costs at a lower cost
- Establishes a price range for feed costs
- Helps with planning and budgeting
- Weaker than expected basis improves the effective feed price
- Contract's financial integrity guaranteed by the CBOT clearing services provider

#### *Disadvantages*

- Benefit of falling prices is limited to the floor price of the range
- Short put position requires maintaining a margin account

- Pay the option premium when position is initiated
- Stronger than expected basis increases the effective feed cost
- Short put position may be exercised at any time during the life of the option
- Transaction costs on put and call

*Evaluation of the Long Call Short Put Hedge:*

Expected Price Range Ceiling =  
 Call strike price + call premium paid - put premium received +/- expected basis\*

Expected Price Range Floor =  
 Put strike price + call premium paid - put premium received +/- expected basis\*

\*Always include transaction costs in your calculations.

*Long Call Short Put Hedge Example: Assumptions*

July Corn futures currently trading at \$2.60/bushel  
 Buy (long) July 260 Corn call option for \$0.18 (premium)  
 Sell (short) July 240 Corn put option at \$0.10 (premium)  
 Expected basis is \$0.15 over July  
 Expected Price Range:  
 Ceiling Price:  $\$2.60 + 0.18 - 0.10 + 0.15 = \$2.83$   
 Floor price =  $\$2.40 + 0.18 - 0.10 + 0.15 = \$2.63$

*June 15 Scenario 1: Rising Prices*

July Corn Futures	\$3.20/bu
July 260 Corn call option (premium)	0.60/bu
July 240 Corn put option (premium)	0.00/bu
Basis	+ 0.15/bu
Local feed corn price (futures + basis)	\$3.35/bu
Call Option Profit <sup>1</sup>	-0.42/bu
Put Option Profit <sup>2</sup>	- 0.10/bu
Effective Feed Purchase Price	\$2.83/bu

<sup>1</sup>Buy call at \$0.18 and sell (offset) call at \$0.60

<sup>2</sup>Sell put at \$0.10 and put expires valueless

*June 15 Scenario 2: Falling Prices*

July Corn Futures	\$2.00/bu
July 260 Corn call option (premium)	0.00/bu
July 240 Corn put option (premium)	0.40/bu
Basis	+ 0.15/bu
Local feed corn price (futures + basis)	\$2.15/bu
Call Option Loss <sup>3</sup>	+0.18/bu
Put Option Loss <sup>4</sup>	+ 0.30/bu
Effective Feed Purchase Price	\$2.63/bu

<sup>3</sup>Buy call at \$0.18 and call expires valueless

<sup>4</sup>Sell put at \$0.10 and put is offset at \$0.40

**Long Call Short Put Hedge Notes:**

As prices moved higher in Scenario 1, the higher local feed corn price was offset by a gain on the long call and the short put. Without the hedge, the feed corn price would have been \$0.52/bushel higher at \$3.35/bushel. Regardless of how high the July corn market would have rallied, the \$2.83 ceiling purchase price would be achieved.

In Scenario 2, there were losses on the call and the put but the effective purchase price still improved because of the significant decline in the local feed corn prices. The effective purchase price would improve as the market declines but the improvement would be limited to the \$2.63 floor.

**Summary**

The Long Call Short Put hedge is only one of many risk management strategies available by using CBOT futures and options on Corn, Wheat, Soybeans, Soybean Meal, Soybean Oil, Oats, and Rice. The flexibility, integrity, and transparency of the CBOT markets allow the dairy industry to adjust market risk exposure to any level deemed comfortable.

For more information on risk management strategies for the dairy industry, contact your broker or a CBOT Product Manager at 312-341-7955. For more information on the Chicago Board of Trade Agricultural Complex, visit [www.cbot.com](http://www.cbot.com).

	Open Auction	Electronic Platform**
	Monday – Friday	Sunday p.m. – Friday a.m.
<b>Corn Futures</b>	9:30 a.m. – 1:15 p.m.	7:30 p.m. – 6:00 a.m.
<b>Corn Options</b>	9:30 a.m. – 1:15 p.m.	7:32 p.m. – 6:00 a.m.
<b>Soybean Meal Futures</b>	9:30 a.m. – 1:15 p.m.	7:31 p.m. – 6:00 a.m.
<b>Soybean Meal Options</b>	9:30 a.m. – 1:15 p.m.	7:33 p.m. – 6:00 a.m.

\*All time are Chicago times  
 \*\*New electronic hours

