

The Window Strategy with Options

Overview

- The volatility of agricultural commodity prices makes marketing just as important as production.
- Producers should protect themselves from downside price risk.
- Having a marketing strategy that also allows you to capitalize on rising prices is beneficial as long as it enables you to meet your price objectives and stay within your range of financial risk and cash flow ability.
- Knowing your production costs and range of acceptable production, price and financial risks is the key to determining your price objective and developing a marketing plan that is right for your operation.
- A window or fence strategy is one hedging strategy that sets a price floor and allows for limited upside price potential, while also reducing option premium costs.

How the Window Strategy Works

- The window strategy involves simultaneously buying a put option and selling a call option.
- Because you can choose whichever strike price you desire (from among the strikes offered), the window strategy can be customized to best fit your situation.
- With a window, the floor price is derived in a way similar to the purchase of a put option.
- The difference is that with a window you need to take into account the premium received from selling the call option.
- The writing of the call option is what establishes the price ceiling, or maximum net price you receive.
- The method of deriving the price ceiling is the same as for determining the price floor, except that you start off with the call strike price rather than the put strike price. Remember, the call strike price is what determines the price ceiling.

Figure 1. Floor Price with a Window

Window price floor =

Put strike price

- Put premium paid
- + Call premium received
- + Local basis (may be negative)
- Brokerage/transaction costs

Figure 2. Price Ceiling with a Window

Window Price Ceiling =

Call strike price

- Put premium paid
- + Call premium received
- + Local basis (may be negative)
- Brokerage/transaction costs

Margin Money for Writing Call Options

- The writing of a call option requires you to maintain a margin account because the option writer (seller) must maintain equity in his/her position.
- Call option premiums fluctuate based on market conditions.
- Margin calls are based on the change in the value of the call option premium.
- Call option sellers also should be aware of the possibility of being exercised upon. If the futures price is above the call strike price at any time prior to expiration, the buyer of the call option has incentive to exercise the call option. If the option holder (buyer) chooses to do so, the option seller could be placed in a short position at the strike price, which would likely result in a loss for the call option seller. When a call option holder exercises a call, the futures exchange randomly assigns the short futures position to someone who has sold a call option. Keep in mind that any loss on the call option, which is paid through margin calls, will be roughly offset later by a higher cash price received when the grain is sold.

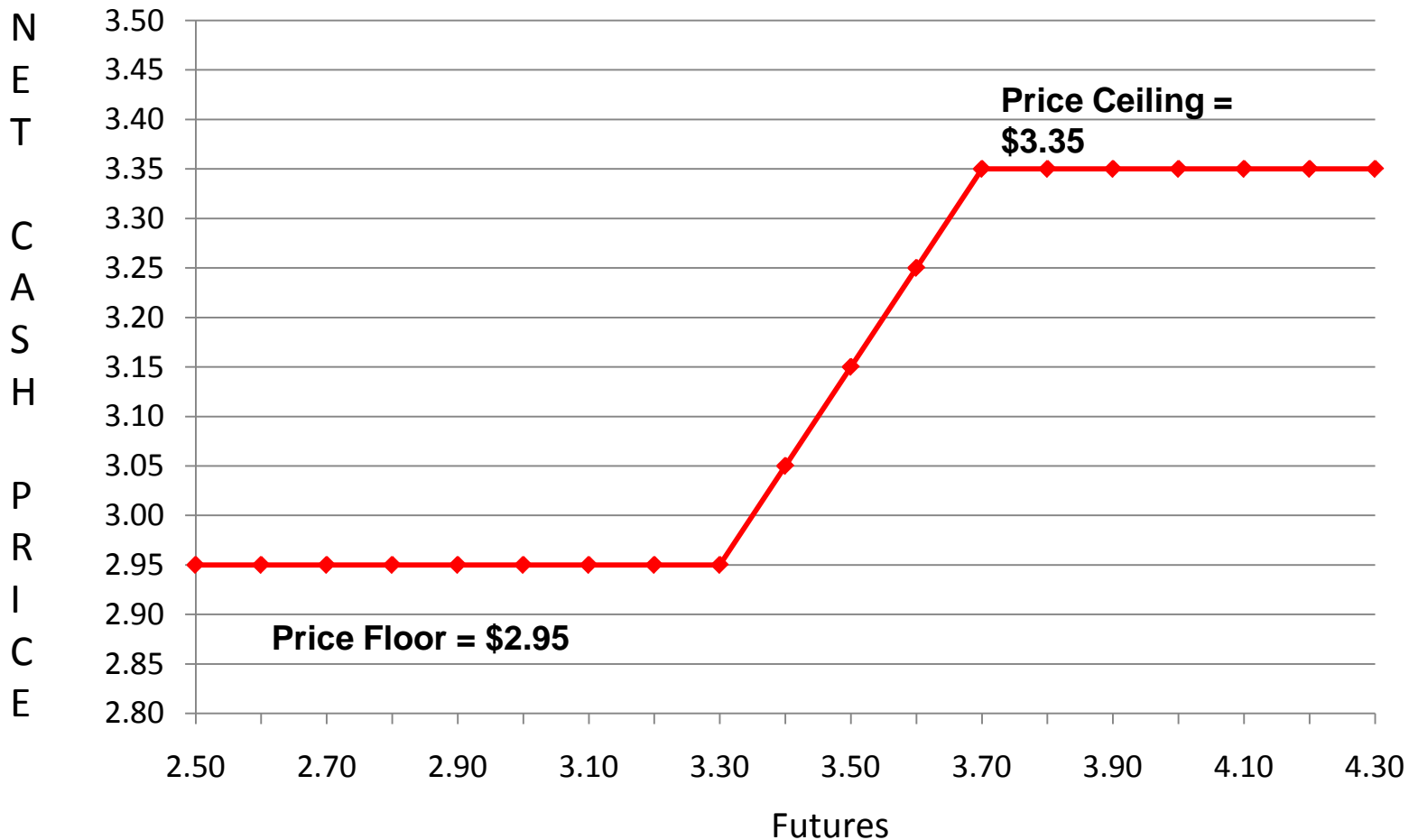
A Window Strategy Example

Assume Jack Farmer is contemplating which strategy to use in marketing a portion of his corn, which will be sold in mid-October (at harvest). It is April now and Jack is reviewing strike prices and premiums for puts and calls. The December futures price is \$3.40 and Jack anticipates a basis of -\$0.10. After analyzing the strike prices, associated premiums, and anticipated results of different combinations of strike prices, Jack decides to initiate a window strategy by buying a \$3.30 put option and selling a \$3.70 call option. The expected results of the window strategy can be found in Table 1, which includes the estimated net price received across a range (\$3.00 to \$4.00) of December futures prices.

Please review Figure 4 for deriving a gain or loss on options. With this window strategy, the floor price is \$2.95 and the price ceiling is \$3.35. Some key observations from Table 1 are: 1) When the futures price is equal to or less than the put strike price, the net price received is the same and is equal to the floor price. This occurs when the futures price is equal to or below \$3.30 in Jack's example; 2) When the futures price is between the two strike prices, a loss is incurred on the put option that is equal to the put premium. The put option expires having no value. Also, when the futures price is equal to or below the call strike price, you keep the entire amount received from selling the call option. This is the single most important advantage of the window strategy; i.e., downside price protection provided by the put option is less costly because income received from selling the call option reduces the cost of the put option. With Jack's window, the net cost of the put option is \$0.23 (\$0.05 - \$0.28) if the futures price remains below the call strike price. When the price is rising, yet remains below the call strike price, Jack benefits to the full extent of the price increase; 3) When the futures price moves above the call strike price, Jack will more than likely be exercised upon, thus placing him in a short position at the call strike price. The higher the futures price, the bigger the loss incurred from selling the call option. The cash price is also rising and offsetting the loss on the call, which develops into the price ceiling.

Producers considering a window strategy need to be aware of the added risks associated with poor crop production. If your crop yield falls short of the amount hedged, and prices rise significantly, there will not be enough production to sell in the cash market (which is rising also) to offset the loss on the call option.

Figure 3. Illustration of Jack's Window Strategy



Expected Price Floor = Put Strike Price minus Put premium paid plus Call premium received plus basis minus broker's fee
 Expected Price Ceiling = Call Strike Price minus Put premium paid plus Call premium received plus basis minus broker's fee

Table 1. Estimated Results of Window Strategy

If Dec. Futures is:	Estimated Basis	Cash Price	Put gain/loss	Call gain/loss	Brokerage fees	Net price
\$3.00	-\$0.10	\$2.90	+\$0.02	+\$0.05	\$0.02	\$2.95
\$3.10	-\$0.10	\$3.00	-\$0.08	+\$0.05	\$0.02	\$2.95
\$3.20	-\$0.10	\$3.10	-\$0.18	+\$0.05	\$0.02	\$2.95
\$3.30	-\$0.10	\$3.20	-\$0.28	+\$0.05	\$0.02	\$2.95
\$3.40	-\$0.10	\$3.30	-\$0.28	+\$0.05	\$0.02	\$3.05
\$3.50	-\$0.10	\$3.40	-\$0.28	+\$0.05	\$0.02	\$3.15
\$3.60	-\$0.10	\$3.50	-\$0.28	+\$0.05	\$0.02	\$3.25
\$3.70	-\$0.10	\$3.60	-\$0.28	+\$0.05	\$0.02	\$3.35
\$3.80	-\$0.10	\$3.70	-\$0.28	-\$0.05	\$0.02	\$3.35
\$3.90	-\$0.10	\$3.80	-\$0.28	-\$0.15	\$0.02	\$3.35
\$4.00	-\$0.10	\$3.90	-\$0.28	-\$0.25	\$0.02	\$3.35

Figure 4. Deriving Option Gain/Losses with the Window Strategy

Gain or Loss when Buying a Put

If the futures price is less than the put option strike price:

Option gain/loss = put strike price – futures price – put option premium

If the futures price is equal to or higher than the put option strike price:

Option gain/loss = put option premium (the most you can lose is the premium paid)

Gain or Loss when Selling a Call

If the futures price is less than the call option strike price:

Option gain/loss = call option premium (the most you can gain is the premium paid)

If the futures price is equal to or higher than the call option strike price:

Option gain/loss = call option strike price – futures price + call option premium

When to Use the Window Strategy

- Feel prices are high enough to cover break-even costs but you are uncertain as to the future direction of the market.
- Believe the put premium is too high.
- Need or want downside price protection but want to retain some upside potential.
- Are willing to accept the price ceiling if the futures price moves above the call option strike price.