



*Photo courtesy of the Chicago Board of Trade*

# Writing options: EASY MONEY OR HIGH-RISK STRATEGY?

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Most people hate buying insurance; it means paying premiums with little probability of collecting benefits. Many farmers seem to feel the same about buying options as a form of price insurance. They focus on the cost ("too high"), and many farmers say options "never pay off." Such absolute conclusions are unjustified, but we hear them often.

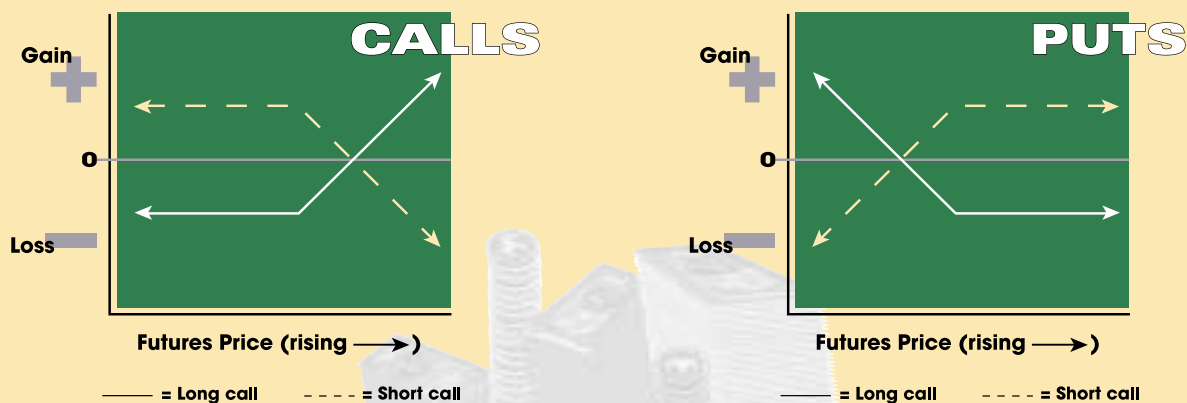
Collecting premiums, on the other hand, appeals to many farmers. An option writer (net seller) collects the option premium, and that can increase the value of a farmer's cash crop. Now we're talking! This can be especially tantalizing in volatile markets where premiums are high. But this sounds too easy

— maybe there's more to consider.

Elevators often get questions from producers about option strategies. Some strategies are simple; some are complex and hard to analyze. Understanding the component parts allows you to evaluate any strategy, no matter how complex, and talk about it with your producers.

Option premiums are composed of two parts: intrinsic value (IV) and extrinsic, or time value (TV). IV (intrinsic) is the immediate value of an option. A \$2 corn call option when futures are at \$2.20 has 20 cents of immediate "intrinsic" value. If the total premium is higher than the IV, the remainder is the "time" value (TV). That's the risk compensation to the option writer, and the net price the buyer is

Market movement Using: "ATM" Option strategy	Futures decline	Futures unchanged	Futures rise
Long put	Gain	Fixed loss (premium)	
Short put	Lose	Fixed gain (premium)	
Long call	Fixed loss (premium)		Gain
Short call	Fixed gain (premium)		Lose



Illustrations reflect outcome at expiration — with no remaining time value.

**Figure #1** April premium illustrates how options work.

November futures = \$5.60			
	Total premium	— Intrinsic value (IV)	= Time value (TV)
Nov. \$5.50 call	\$.49	\$.10	\$.39
Nov. \$5.75 call	.40	.00	.40
Nov. \$6.50 call	.22	.00	.22
Nov. \$7.50 call	.11	.00	.11

**Figure #2**

PRODUCER'S POSITION	EXCHANGE-TRADED RISK EQUIVALENT
1. Long the crop	long futures
2. Eligible for LDP	long a put (strike price equal to loan level)

willing to pay to buy option coverage. Time value rises in volatile markets and it's also highest for the "at the money" (ATM) strike price.

Figure 1 shows how options work in principle. Buying options is a limited risk strategy — the most you can lose is the premium (plus any commissions). Writing options is a limited gain strategy; the maximum gain

from the option is the premium (less any commissions). Combining buying and writing options, or combining options with futures or a cash position can produce a substantially different potential outcome, however.

### The government's role

The USDA's Loan Deficiency Program (LDP) and marketing

loan program function like a put option. If cash prices fall below loan level, the LDP rises to offset the "loss." This effectively protects an eligible producer to the equivalent of the loan. (Many producers decouple their LDP from selling the cash crop, however, which raises their risk exposure.)

Let's look at a typical producer. Before any sales or hedges, a producer's basic market position while the crop is growing is shown in Figure 2.

Being long cash (or futures) plus long an LDP "put" is conceptually the same as being long a call option for our farmer. The producer benefits if prices rise, and gets the equivalent of a fixed price (loan level) if prices decline below the loan rate. Once the producer understands that this risk position is the same as being long a call option, the next step is to decide if that's the position the producer wants to hold.

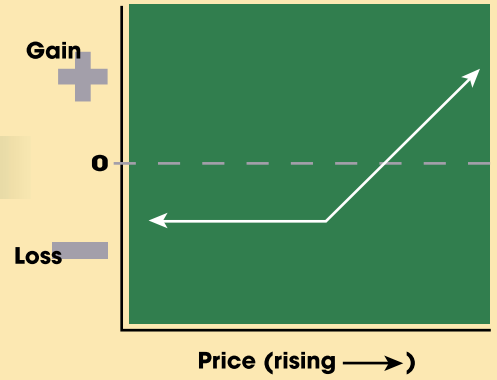
### Writing vs. buying options

Is it good or bad for producers to consider writing options instead

# Profit/Loss Option Strategies

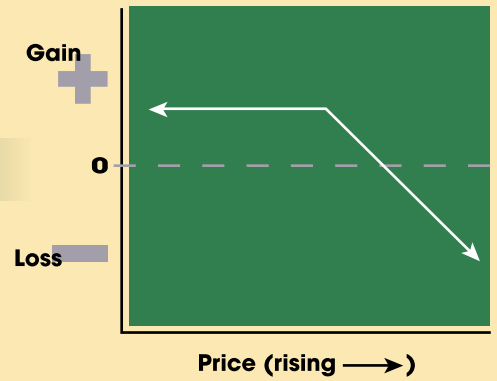
## Buy a Call

Makes money in a rising market.



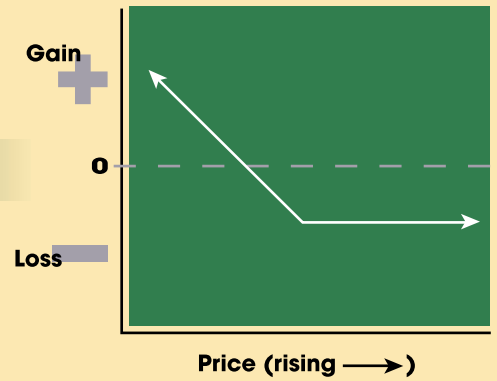
## Sell a Call

Loses money in a rising market.



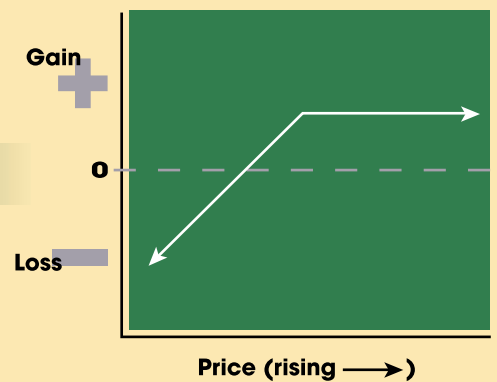
## Buy a Put

Makes money in a falling market.



## Sell a Put

Loses money in a falling market.



## Alternative #1 Options Writing

Farmer sells a Nov. \$5.75 call in the spring, and sells cash at harvest. Assume a local county loan rate of \$5.25 (est LDP = loan minus cash).

Nov. Futures in Oct. =	\$4.50	\$5.25	\$5.65	\$5.75	\$7.50
Cash price	\$4.10	4.85	5.25	5.35	7.10
LDP	1.15	.40	— 0 —	— 0 —	— 0 —
Call premium	.40	.40	.40	.40	.40
G/L 575 Call	— 0 —	— 0 —	— 0 —	— 0 —	—1.75
Net price for beans	5.65	5.65	5.65	5.75	5.75

## Alternative #2 Options Writing

Farmer waits and sells soybeans at harvest.

Nov. Futures in Oct. =	\$4.50	\$5.25	\$5.65	\$5.75	\$7.50
Cash price	\$4.10	4.85	5.25	5.35	7.10
LDP	1.15	.40	— 0 —	— 0 —	— 0 —
Net price for beans	5.25	5.25	5.25	5.35	7.10

of buying options? The answer is: It depends. There's nothing wrong with writing options, as long as the producer understands the maximum risk of the overall strategy and can bear the consequences if things go wrong. Writing options can be a reasonable part of some producers' marketing strategies.

Our producer's initial net risk position is equivalent to a long call. This producer now wants to write an exchange-traded call option, a November \$5.75 call option for example, to collect the 40 cent premium. This will not create a high-risk position when we consider all the components. If futures rise sharply, the producer will lose money on the short call option, but the crop in the field will rise in

value, offsetting the loss. The producer also keeps the 40 cent premium. If futures decline, the call will decline in value (eventually to zero), the producer keeps the premium, and the LDP protection kicks in if prices fall below loan level. (Using other strike prices could change the net outcomes.) Our producer's overall (approximate) potential outcome turns out to be loan level plus the value of the premium! Writing the \$5.75 call option(s) did not raise this producer's market risk.

The results may be easier to visualize if we put it in table form (see Figure 3) using our values. Assume November futures are currently at \$5.60. November \$5.75 calls are trading at 40 cents.

In our example the producer has to decide whether to accept a higher floor value by selling the \$5.75 call (or other strike price), or accept the risk of a lower floor but a higher potential outcome by doing nothing. Neither is right or wrong, just different. The important factor is that writing options did not pose an unusual risk for our farmer — in this case it meant giving up potential gains if November futures rise above \$5.75.

What are the drawbacks? This sounds too easy.

The biggest negative is if the producer wants to exit the exchange-traded call option before expiration. Buying back the short call option means paying a premium. That will reduce the overall return. In our instance, there's little reason to price early, however, unless the farmer suddenly turns very bullish. Volatility can also rise, making it more costly to liquidate the short call than the premium received. (If volatility were 40%

Figure #3

TWO EXAMPLE PRODUCER ALTERNATIVES	
Alternative 1	Write a \$5.75 Nov. call, sell beans at harvest at a -\$0.40 basis
Alternative 2	Do nothing. Sell cash soybeans at a -\$0.40 basis at harvest

instead of 29% in our example, our \$5.75 call might be worth 55¢ on Day 1 instead of 40 cents.) Also, the producer can't lock in the LDP until harvest.

An option writer also has to margin net short option positions in a brokerage account. If prices move higher, our producer will have to send in more dollars to offset the rising value of the call option. (The value of the cash soybeans is also rising, but that doesn't produce cash flow until they're sold.)

### Elevator's role

Elevators can incorporate the writing of options into producer cash market contracts, but you need a solid accounting/tracking system. Marking to market at month end is more difficult than on a simple purchase contract, for example, and explaining the overall strategy to producers takes

time. You also need to write a binding delivery contract with your farmer. Just selling options in the elevator's brokerage account and crediting the premiums for a farmer's "account" is not legal.

- Write a purchase contract with mandatory delivery.
- Elevator sells the appropriate quantity of call options against the bushels. (1:1)
- Do not sell futures initially! (The short call is your hedge for the moment.)
- Pricing should occur on expiration day of the call option.
- Basis can be fixed anytime up to delivery time (for the contracted delivery period).
- Add some or all of the option premium (elevator's choice) to the contract value.
- If futures are below the strike price at expiration, then the elevator sells futures, sets the cash price

for the farmer at:

Futures + basis + option premium (farmer collects any LDP separately).

- If futures are above the strike price at expiration, the short call will be exercised into a short futures position for the elevator, creating the hedge.

Cash price = Strike price (\$5.75) + basis + option premium (no LDP in this case).

One variation that involves writing options is to only require delivery by the farmer if futures are higher than the strike price at expiration. Otherwise the value of the option premium is credited to the producer on other contracts that may exist. The legality is not clear yet on this variation. Check with your firm's lawyers about current court or CFTC rulings, and on how to properly word any contracts you write.

### Are there other strategies?

Having the free LDP privilege allows producers substantial flexibility to create a marketing program. Producers may choose to write put options instead of calls, for example. This trades the full LDP protection for a limited "bird in the hand" gain, capturing the time value from selling the exchange-traded put. The benefit is that if prices rise, the producer can capture all of that. Writing calls sets a cap over the market.

Producers are presented with many potential marketing strategies these days, some of which involve multiple option positions. Some of these strategies are reasonable, some are extremely aggressive and suited only for sophisticated, well-heeled traders. There are far too many possible combinations to analyze in this article. Drawing the theoretical outcome graphs of each option or futures component will help a producer recognize the net position and the resulting risk or potential of any strategy. 