

Navigating the complex world of options

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The Basics of Options: Calls vs. Puts

- Call options: An option that gives the buyer the right, but not the obligation, to go long the underlying futures contract at a specific price (strike price) on or before the expiration date.
- Put options: An option that gives the buyer the right, but not the obligation, to go short the underlying futures contract at a specific price (strike price) on or before the expiration date.

Bird

Teeter-totter

The Basics of Options: Buyer vs. Seller

- **Buyer: The purchaser (holder) of the option.**
 - Has the right, but not the obligation, to exercise into the underlying futures position at a specific price (strike price) on or before the expiration date.
 - Limited risk (the premium paid)
- **Seller: The person who sells (writes) an option.**
 - Can be exercised into a futures position by the buyer.
 - Unlimited risk

The Basics of Options: Determining the price

- The premium (price) you pay for a call or put option is determined by:
 - Strike price: The price at which the option may be exercised and converted to the underlying futures contract.
 - In-the-money, at-the-money or out-of-the-money
 - Intrinsic value: The amount that an option is in-the-money.
 - Call: (Futures price - strike price)
 - Put: (Strike price - futures price)

The Basics of Options: Determining the price

- The premium (price) you pay for a call or put option is determined by:
 - Time: The period until expiration.
 - The longer an option has until expiration, the greater the chance that it will end up in-the-money, or profitable. As expiration approaches, the option's time value decreases.
 - In general, an option loses one-third of its time value during the first half of its life and two-thirds of its value during the second half.
 - Volatility: The measure of uncertainty in the underlying futures market.
 - When volatility is low, options premiums are low; when volatility is high, options premiums are high.

The Basics of Options: Buy or sell? Calls or puts?

	Calls	Puts
Buy	<ul style="list-style-type: none">• Limited risk (premium)• Unlimited reward• Profit if prices rise• No margin call	<ul style="list-style-type: none">• Limited risk (premium)• Unlimited reward• Profit if prices fall• No margin call
Sell	<ul style="list-style-type: none">• Unlimited risk• Limited reward (premium)• Profit if prices fall or stay flat• Potential margin calls if exercised into a futures position	<ul style="list-style-type: none">• Unlimited risk• Limited reward (premium)• Profit if prices rise or stay flat• Potential margin calls if exercised into a futures position

Short-dated options

- Short-dated new-crop options provide a short-term alternative for trading new-crop corn, soybeans and wheat. These options reference the new-crop month but they expire earlier than the traditional new-crop options, and therefore, their premiums are typically lower. Short-dated new-crop options offer a cost-effective way to take a position in new-crop futures contracts.
 - Underlying futures contracts are December corn, November soybeans and July wheat.
 - Contract listings –
 - Corn and soybeans: March, May, July and September
 - SRW wheat and HRW wheat: December, March and May

Why use options?

- Limited risk (if you are the buyer)
- Flexibility – can convert to a futures position (if you are the buyer)
- Liquidity – easy to get out and recapture at least a portion of your original premium
- Staying power – gives you time to be “right” without the risk of margins calls

Examples

- Using a Put Option for a hedge:
 - The math:
 - With December futures at \$4.50 and a -\$0.30 basis; \$4.00 put option premium at \$0.50.
 - Cash equivalent *at time of transaction*: Futures price (\$4.50) minus put premium paid (\$0.50) plus basis (-\$0.30) = \$3.70 cash equivalent.

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 - **If futures rally to \$5.50, basis holds steady, you hold put**
 - The \$4.00 put would be “worthless” – you’ve given up the 50 cents.
 - Cash price: Futures price (\$5.50) plus basis (-\$0.30) = \$5.20
 - Net price is cash price minus put premium (\$0.50) = \$4.70 cash price.
 - Because **you can’t lose more than the premium paid** for the put option, you capture \$1.00 of the \$1.00 rally.

- Using a Put Option for a hedge:

- The math:

- With December futures at \$4.50 and a -\$0.30 basis; \$4.00 put option premium at \$0.50.
- Cash equivalent *at time of transaction*: Futures price (\$4.50) minus put premium paid (\$0.50) plus basis (-\$0.30) = \$3.70 cash equivalent.
- If futures fall to \$3.50, basis holds steady, you take profits on put option at \$1.00 (\$0.50 profit).
 - Cash price: Futures price (\$3.50) plus basis (-\$0.30) = \$3.20
 - Net price is cash price plus profit on put option (\$0.50) = \$3.70
 - Plus, you gain back initial investment (\$0.50) = \$4.20.

- Using a Put Option for a hedge:
 - Sometimes, a put option doesn't cover 100% of downside price risk, *so why use them?*
 - Because they allow you to protect downside risk yet still participate in a rally with a known risk. No matter how much you pay for the option, that's the most you can lose. If futures rally more than the premium paid, you are participating in the rally penny-for-penny. If you deduct the premium from the cash-price equivalent *at the time of purchase* (as I did in the examples), **your only risk is basis.** Therefore, use put options for downside price protection when basis is abnormally wide.

- Using a Call Option to reown a cash sale:
 - The math:
 - With December futures at \$4.50 and a -\$0.30 basis; \$5.00 call option premium at \$0.50.
 - **Cash price at time of sale: \$4.20.** (Futures plus basis)
 - Cash equivalent *at time of transaction*: Cash price minus call premium paid (\$0.50) = **\$3.70 cash equivalent.**

- Using a Call Option to reown a cash sale:
 - The math:
 - With December futures at \$4.50 and a -\$0.30 basis; \$5.00 call option premium at \$0.50.
 - **Cash price at time of sale: \$4.20.** (Futures plus basis)
 - Cash equivalent *at time of transaction*: Cash price minus call premium paid (\$0.50) = **\$3.70 cash equivalent.**
 - **If futures rally to \$5.50, basis holds steady, you take profits on call option**
 - The \$5.00 call option would be worth \$0.80 (**\$0.30 profit**)
 - Cash price equivalent: \$3.70
 - You gain back initial investment (\$0.50) = \$4.20
 - Also add in profit on call option (\$0.30) = \$4.50
 - You add (and regain) \$0.80 of \$1.00 rally.

- Using a Call Option to reown a cash sale:
 - The math:
 - With December futures at \$4.50 and a -\$0.30 basis; \$5.00 call option premium at \$0.50.
 - **Cash price at time of sale: \$4.20.** (Futures plus basis)
 - Cash equivalent *at time of transaction*: Cash price minus call premium paid (\$0.50) = **\$3.70 cash equivalent.**
 - **If futures drop to \$3.50, basis holds steady, you hold call**
 - The \$5.00 call would be worthless – you give up \$0.50 premium.
 - Cash price: \$4.20
 - Net price is cash price minus loss on call option = \$3.70. **Because you can't lose more than you pay for the call option,** your net selling price is the same as the cash equivalent price at the time of the transaction despite a \$1.00 drop in price.

Advanced strageties

Call Spreads

- Buying a call at one strike price and selling another at a different strike price in the same contract month. For example, buying a \$4.50 July call and selling a \$5.50 July call.
- Can be used to reown a portion of cash sales at a limited cost compared to just buying a call.
 - The selling of the one call helps offset the cost of the one you are buying.

Call Spreads

- The scenario:
 - It's January and July corn futures are trading at \$4.50. The time, volatility and intrinsic value of the \$4.50 call option carries a premium of \$0.50.
 - While you anticipate higher prices, you don't expect a runaway bull market. Still, you see the potential for July corn futures to rally to \$5.50. The July \$5.50 call option carries a premium of \$0.25 (less intrinsic value than the \$4.50 call).
 - You don't want to spend the \$2500 to buy the \$4.50 call, so to lower the cost of the position, you sell the \$5.50 call.

Call Spreads

- The outcome:
 - It's now June and your outlook was correct – the market moved higher, but not above \$5.50. July options are set to expire and July futures are now at \$5.45.
 - The premium on the \$4.50 call is now \$0.95 and the premium on the \$5.50 call is now 0. You've gained \$0.45 on the \$4.50 call and gained \$0.25 on the \$5.50 call. You captured \$0.70 of the \$0.95 rally.

Call Spreads

- The outcome:
 - It's now June and the market moved above \$5.50. July options are set to expire and July futures are now at \$6.50.
 - The premium on the \$4.50 call is now \$2 and the premium on the \$5.50 call is now \$1. You've gained \$1.50 on the \$4.50 call and lost \$0.75 on the \$5.50 call. You captured \$0.75 of the \$2 rally in July corn futures.

Call Spreads

- Potential returns are capped once the underlying futures price climbs above the strike price on the call option you sold. At that point, each call option would be gaining penny-for-penny with the climb in futures. However, because you are long one call and short the other, the gains in the long position are erased by losses in the short position.
- And because a short options position carries unlimited risk and limited potential, a price decline from the time the strategy is initiated could result in significant losses.

Call Spreads

- The outcome:
 - It's now June and your outlook was incorrect – the market moved lower. July options are set to expire and July futures are now at \$4.00.
 - The premium on the \$4.50 call is now 0 and the premium on the \$5.50 call is now 0. You've lost \$0.50 on the \$4.50 call and gained \$0.25 on the \$5.50 call. You lost \$0.25 on the position.

Put Spreads

- Buying a put at one strike price and selling another at a different strike price in the same contract month. For example, buying a \$4.00 December put and selling a \$3.00 July put.
- Can be used to protect a portion of downside risk at a limited cost compared to just buying a put.
 - The selling of the one put helps offset the cost of the one you are buying.

Put Spreads

- The scenario:
 - It's January and July corn futures are trading at \$4.50. The time, volatility and intrinsic value of the \$4.50 put option carries a premium of \$0.50.
 - While you anticipate lower prices, you don't expect a strong bear market. Still, you see the potential for July corn futures to fall to \$3.50. The July \$3.50 put option carries a premium of \$0.25 (less intrinsic value than the \$4.50 put).
 - You don't want to spend the \$2500 to buy the \$4.50 put, so to lower the cost of the position, you sell the \$3.50 put.

Put Spreads

- The outcome:
 - It's now June and your outlook was correct – the market moved lower, but not below \$3.50. July options are set to expire and July futures are now at \$3.55.
 - The premium on the \$4.50 put is now \$0.95 and the premium on the \$3.50 put is now 0. You've gained \$0.45 on the \$4.50 put and gained \$0.25 on the \$3.50 put. You captured \$0.70 of the \$0.95 price drop.

Put Spreads

- The outcome:
 - It's now June and the market moved below \$3.50. July options are set to expire and July futures are now at \$2.50.
 - The premium on the \$4.50 put is now \$2 and the premium on the \$3.50 put is now \$1. You've gained \$1.50 on the \$4.50 put and lost \$0.75 on the \$3.50 put. You captured \$0.75 of the \$2 price drop in July corn futures.

Put Spreads

- Potential returns are capped once the underlying futures price falls below the strike price on the put option you sold. At that point, each put option would be gaining penny-for-penny with the drop in futures. However, because you are long one put and short the other, the gains in the long position are erased by losses in the short position.
- And because a short options position carries unlimited risk and limited potential, a price rally from the time the strategy is initiated could result in significant losses.

Put Spreads

- The outcome:
 - It's now June and your outlook was incorrect – the market moved higher. July options are set to expire and July futures are now at \$5.00.
 - The premium on the \$4.50 put is now 0 and the premium on the \$5.50 put is now 0. You've lost \$0.50 on the \$4.50 put and gained \$0.25 on the \$3.50 put. You lost \$0.25 on the position.

Thank You

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