# Managing Risk with Options

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# Options

The right, but not the obligation, to buy or sell a futures contract at a certain price for a limited time.

# Strike Price

Price at which the buyer of an option can choose to exercise the right to buy or sell the underlying futures contract.

# Option Premium

The price that is paid or collected for an option. The premium equals the option’s intrinsic value plus it’s time value.

# Call Option

Gives the buyer the ***right to buy*** the underlying futures contract at the strike price on or before expiration date.

# Put Option

Gives the buyer the ***right to sell*** the underlying futures contract at the strike price on or before expiration date.

# Dec Corn Puts - Futures @ $4.75

| Strike | Premium |
|---|---|
| $4.25 | $0.05/bu |
| $4.50 | $0.12/bu |
| $4.75 | $0.23/bu |
| $5.00 | $0.37/bu |
| $5.25 | $0.55/bu |

# Option Terms

- In-the-Money
- At-the-Money
- Out-of-the-Money

# In-the-Money

- An in-the-money option has intrinsic value. It is the difference between the strike price and the price of the underlying futures contract.

# In-the-Money

- A put option is in the money when the strike price is greater than the underlying futures price.
- A call option is in-the-money when the strike price is less than the underlying futures price.

# At-the-Money

- An at-the-money option has <u>No</u> intrinsic value. It is when the strike price is equal to the underlying futures price.

# Out-of-the-Money

- An out-of-the-money option has <u>No</u> intrinsic value.

# Out-of-the-Money

- A put option is out-of-the-money when the strike price is less than the underlying futures price.
- A call option is out-of-the-money when the strike price is greater than the underlying futures price.

# Option Terms

- Intrinsic Value
- Time Value

# Dec Corn Puts - Futures @ $4.85

| | Strike | Premium |
|---|---|---|
| | $4.25 | $0.05/bu |
| OTM | $4.50 | $0.12/bu |
| ATM | $4.75 | $0.23/bu |
| ITM | $5.00 | $0.37/bu |
| | $5.25 | $0.55/bu |

# $5.00 Put Option

- $5.00 Strike
- <u>- $4.85 Futures</u>
- = $0.15 Intrinsic Value

- $0.37 Premium
- <u>- $0.15 Intrinsic Value</u>
- = $0.22 Time Value

# $5.25 Put Option

- $5.25 Strike
- <u>- $4.85 Futures</u>
- = $0.40 Intrinsic Value

- $0.55 Premium
- <u>- $0.40 Intrinsic Value</u>
- = $0.15 Time Value

# Long

One who has bought a futures or options contract to establish a market position.

# Short

One who has sold futures or options contracts.

# Ways to Exit an Option

- Exercise the option
- Liquidate the option
- Let the option expire

# Exercise the Option

- To exercise a put (call) option, you sell (buy) a futures contract at the strike price. To offset it you then buy a futures contract at the market price.
- Exercising an option contract means you go from the options market to the futures market. The seller of the option is obligated to take the opposite position in the futures market.

# Liquidate the Option

- Liquidating the option means you sell it back in the options market, never entering the futures market.
- You offset your options position the same way you would in the futures market.
- You would liquidate your option only if it has intrinsic value.

# Let the Option Expire

- If the option is worthless at expiration, you let it expire by doing nothing.
- You give up the premium you paid for the option.
- A broker will automatically liquidate your option if it has any intrinsic value at expiration.

# Strategy #1

Buying Put Options for Protection Against Lower Prices

# Dec Corn Puts - Futures @ $4.85

| Strike | Premium |
|---|---|
| $4.25 | $0.05/bu |
| $4.50 | $0.12/bu |
| *$4.75* | *$0.23/bu* |
| $5.00 | $0.37/bu |
| $5.25 | $0.55/bu |

# Dec Corn Puts - Futures @ $4.85
# Basis = $0.00

| Strike | Premium | Price Floor | Premium Δ | Floor Δ |
|---|---|---|---|---|
| 4.25 | 0.05 | | ******** | ******** |
| 4.50 | 0.12 | | | |
| 4.75 | 0.23 | | | |
| 5.00 | 0.37 | | | |
| 5.25 | 0.55 | | | |

# Dec Corn Puts - Futures @ $4.85
# Basis = $0.00

| Strike | Premium | Price Floor | Premium Δ | Floor Δ |
|---|---|---|---|---|
| 4.25 | 0.05 | 4.20 | ***** | ***** |
| 4.50 | 0.12 | 4.38 | | |
| 4.75 | 0.23 | 4.52 | | |
| 5.00 | 0.37 | 4.63 | | |
| 5.25 | 0.55 | 4.70 | | |

# Dec Corn Puts - Futures @ $4.85
## Basis = $0.00

| Strike | Premium | Price Floor | Premium Δ | Floor Δ |
|---|---|---|---|---|
| 4.25 | 0.05 | 4.20 | ***** | ***** |
| 4.50 | 0.12 | 4.38 | 0.07 | 0.18 |
| 4.75 | 0.23 | 4.52 | 0.11 | 0.14 |
| 5.00 | 0.37 | 4.63 | 0.14 | 0.11 |
| 5.25 | 0.55 | 4.70 | 0.22 | 0.07 |

# Net Price Floor - Put

## Strategy # 1

| | |
|---|---|
| Strike Price | ________ |
| Premium Paid | ________ |
| Basis | ________ |
| Net Price | ________ |

# Net Price Floor - Put

## Strategy # 1

| | |
|---|---|
| Strike Price | $4.75 |
| Premium Paid | - $0.23 |
| Basis | + $0.50 |
| **Net Price** | **=$5.02** |

# Dec Corn Puts - Futures @ $4.85
## Basis = $0.00

| Strike | Premium | Price Floor | Premium Δ | Floor Δ |
|---|---|---|---|---|
| 4.25 | 0.05 | 4.20 | ***** | ***** |
| 4.50 | 0.12 | 4.38 | 0.07 | 0.18 |
| 4.75 | 0.23 | 4.52 | 0.11 | 0.14 |
| 5.00 | 0.37 | 4.63 | 0.14 | 0.11 |
| 5.25 | 0.55 | 4.70 | 0.22 | 0.07 |

# Liquidate $4.75 Put Option

## Dec Futures @ $5.50

| | |
|---|---|
| Cash Price (Futures+ Basis) | $________ |
| Premium Paid | $________ |
| Premium Received | $________ |
| Net Price | $________ |

# Liquidate $4.75 Put Option

## Nov Futures @ $5.50

| | |
|---|---|
| Cash Price (Futures + $0.05 Basis) | $5.55 |
| Premium Paid | - $0.23 |
| Premium Received | $0.00 |
| Net Price | = $5.32 |

# Liquidate $4.75 Put Option

## Dec Futures @ $4.00

Cash Price (Futures+ Basis) $________

Premium Paid $________

Premium Received $________

Net Price $________

# Liquidate $4.75 Put Option
## Nov Futures @ $4.00

| | |
|---|---|
| Cash Price (Futures + $0.05 Basis) | $4.05 |
| Premium Paid | - $0.23 |
| Premium Received | + $0.75 |
| Net Payment | = $4.57 |

# Dec Corn Puts - Futures @ $4.85
## Basis = $0.00

| Strike | Premium | Price Floor | Premium ∆ | Floor ∆ |
|---|---|---|---|---|
| 4.25 | 0.05 | 4.20 | ***** | ***** |
| 4.50 | 0.12 | 4.38 | 0.07 | 0.18 |
| 4.75 | 0.23 | 4.52 | 0.11 | 0.14 |
| 5.00 | 0.37 | 4.63 | 0.14 | 0.11 |
| 5.25 | 0.55 | 4.70 | 0.22 | 0.07 |

# Options Always Result in 2nd-Best Price, But Is Best Risk Management Alternative