A CME/Chicago Board of Trade Company

Introduction to Agricultural Options

Prepared and Presented by Sue Goll

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Long Position

A position that allows one to profit or be protected from a rise in the price of a commodity.

- **Cash market – buy physicals**
- **Futures market – buy futures**
- **Options market – buy calls**
sell puts
synthetic long

Short Position

A position that allows one to profit or be protected from a decrease in the price of a commodity.

- **Cash market – sell physicals**
- **Futures markets – sell futures**
- **Options markets – buy puts**
  sell calls
  synthetic short

Options on Futures

A legal contract between two parties that conveys a right to the buyer, but not an obligation, to buy or sell a futures contract at a specific price within a specific time period for a cost – the premium.

Options, like futures, are standardized.

Types of Options

<u>**Call: Right to buy**</u>

Buy → **Right to buy futures**

Sell → **Obligation to sell futures**

<u>**Put: Right to sell**</u>

Buy → **Right to sell futures**

Sell → **Obligation to buy futures**

Option Components

- Underlying Commodity
- Strike Price (Exercise Price)
- Expiration Date
- Buyer
- Seller/Writer
- Premium

Underlying Commodity

The futures commodity the option is based on:

- **November soybean option:**
  - underlying commodity is November soybean futures
- **December live cattle option:**
  - Underlying commodity is December live cattle futures

Strike Price (Exercise Price)

The price level at which the option buyer has the right to go long (call) or short (put) futures. The level at which the option seller is obligated to go short (call) or go long (put) futures.

•Buy 11.00 November soybean call: Conveys the right to buy November soybean futures at 11.00

•Buy 100.00 December live cattle put: Conveys the right to sell December live cattle futures at 100.00

Each commodity has specific price intervals for its strike. i.e. bean options are at 10 cent intervals for the first two trading months and 20 cent intervals for all other months, live cattle options are at all listed intervals.

Expiration Date

The day the option expires. The day after which the option cannot be exercised:

•11.00 November soybean call: expires in late October (generally speaking, the option would expire the 3rd Saturday of October, last trading day occurs the Friday before expiration day)

•100.00 Live cattle call: expires first Friday of the contract month

Option Buyer

The party that purchases an option for the right (but not obligation) to buy or sell futures contracts.

- **Buy 11 November soybean:**
  - Gives the buyer the right to buy November soybean futures at 11
- **Buy 100 December live cattle:**
  - Gives the buyer the right to sell December live cattle futures at 100

An option buyer pays premium – a one time cost.

Option Seller/Writer

The party that sells an option for a price per unit. The seller has an obligation to take the opposite side of a futures contract should the buyer exercise his/her right.

•Sell 11 November soybean call:

- The seller has the obligation to sell November soybean futures at 11.

•Sell 100 December live cattle put:

- The seller has the obligation to buy December live cattle futures at 100.

The option seller must meet margin.

Premium

•The total price (cost) of an option contract. The price is discovered in the trading pit or on an electronic trading platform.

•Premium is a one time cost to the buyer and paid to the seller.

•Premium + commission is the maximum an outright option buyer can lose.

Option Premium

Two Components

- Intrinsic Value/Exercise Value
- Time Value

Intrinsic value + time value = Total Option Value

Intrinsic Value

The positive difference between the strike price and the underlying futures price.

The value of an option if it were to expire immediately with underlying futures at the current price.

Equations:

Put strike – futures = Intrinsic Value

Futures – call strike = Intrinsic Value

Intrinsic Value

November soybean futures: 11.50

- **11 Nov soybean call: .50 Intrinsic Value**
- **11 Nov soybean put: no Intrinsic Value**

November soybean futures: 10.50

- **11 Nov soybean call: no Intrinsic Value**
- **11 Nov soybean put: .50 Intrinsic Value**

Call Lingo

In-the-money

Strike price < futures price

Nov 11 call futures = 11.50

At-the-money

Strike price = futures price

Nov 11 call futures = 11.00

Out-of-the-money

Strike price > futures price

Nov 11 call futures = 10.50

Put Lingo

In-the-money

Strike price > futures price

Nov 11 put futures = 11.50

At-the-money

Strike price = futures price

Nov 11 put futures = 11.00

Out-of-the-money

Strike price < futures price

Nov 11 put futures = 10.50

Time Value Premium

The amount by which an option's total premium exceeds its intrinsic value.

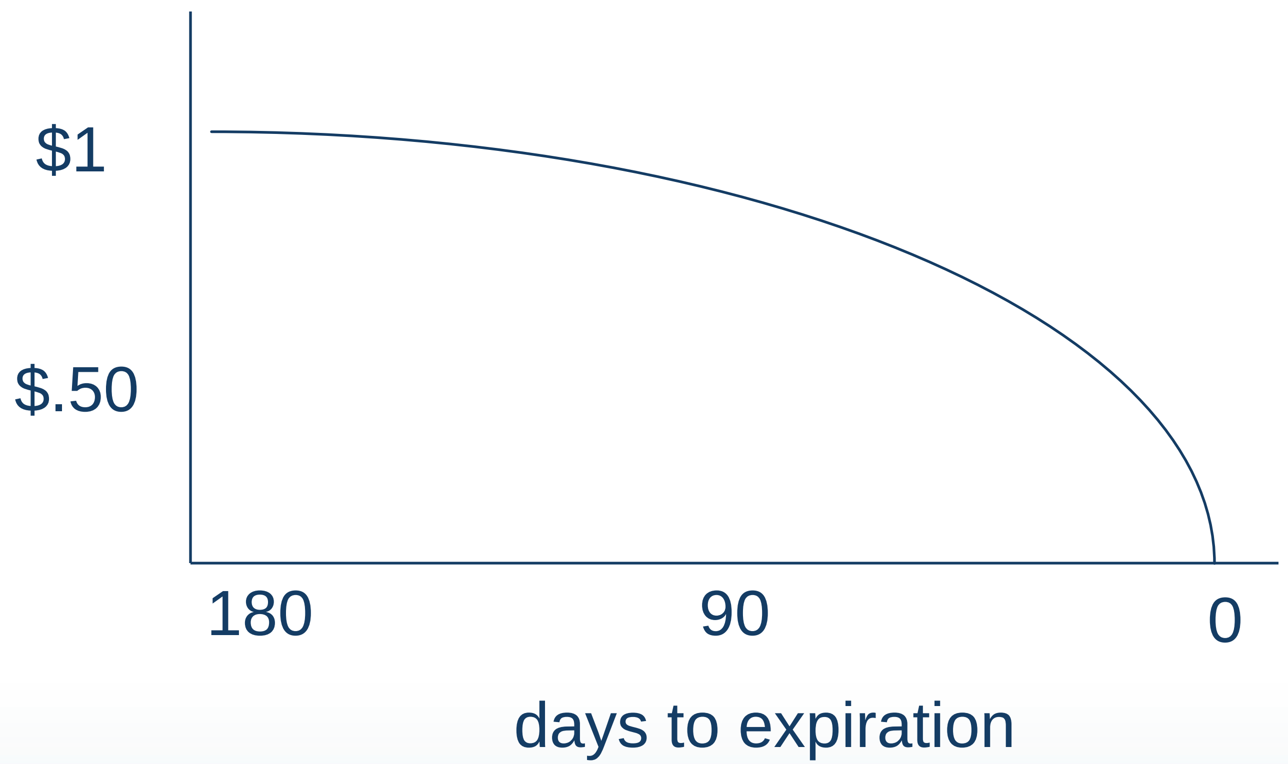
- **November soybean futures @ 11.25:**
  - 11 November soybean call @.68
  - Intrinsic value = .25
  - Time value = .43

Time Value

Components

- Volatility of underlying futures contract
- Time to expiration
- Supply & demand

Time Component of Time Value



Supply & Demand

High demand results in high time value premium.

Options Liquidation

- Expire
- Offset
- Exercise

Expire

•Buyer holds option until expiration, taking no action... Option expires.

•Automatic exercise: some futures exchanges require that an option be exercised at expiration if the option is "in-the-money" by any amount.

Offset

Buyer (seller) sells (buys) an identical option at its current price.

Trading the premium:

•Position:
Long 11 November soybean call @ .45

•To Offset:
Sell 11 November soybean call @ .68

Exercise

- The buyer of an option requires that the underlying futures contract be delivered.
- The buyer takes delivery of the option contract.

Exercise

A call buyer assumes a long futures position at the strike price.

•11 November soybean call → long November soybean futures at 11.00

A put buyer assumes a short position at the strike price.

•11 November soybean put → short November soybean futures at 11.00

Assignment

The designation process informing the seller of an option that he must fulfill his obligation to sell (call writer) or buy (put writer) the underlying futures contract.

This process is facilitated by the clearing house.

Futures Hedge

	Cash	Futures
Now		
Later		

Cash price:
Futures result:
Net price:

	Cash	Futures
Now		
Later		

Cash price:
Futures result:
Net price:

Options Hedge - Exercise

	Cash	Futures
Now		
Later		

Cash price:
Futures result:
Premium cost:
Net price:

Options Hedge - Offset

	Cash	Options/Futures
Now		
Later		

Cash price:
Options result:
Net price:

	Cash	Options/Futures
Now		
Later		

Cash price:
Options result:
Net price:

Sue speaks on a wide variety of subjects including:

Ag Cash Markets

- World Markets Fundamentals
- Processing
- Grain Flow/Transportation
- Cash Grain Trade
- Grain Merchandising Tools
- Grain Contracts
- Ag Policy
- Major Market Reports
- USDA Supply & Demand Report Analysis

Futures & Options Markets, Hedging

- History & Development of Futures
- Futures Organization & Regulation
- Clearing & Margining Process
- Hedging Fundamentals & Basis Trading
- Spreads
- Hedging & Spread Applications for the Merchandiser
- Market Analysis
- Options
- Options Applications, both introductory and advanced

Sue Goll, Agricultural Consultant

Sue Goll is an agricultural consultant with over 25 years of experience as a cash grain merchandiser and futures industry participant. She worked at A.E. Staley for over six years as a grain merchandiser, trading beans, meal and corn out of Des Moines, Iowa, and Lafayette, Indiana.

While in Lafayette, Sue oversaw grain merchandising, truck and rail logistics and originated corn for two wet milling plants. She also handled offsetting hedge and spread strategies for the Lafayette futures position.

Sue spent the next two years as a farm market advisor for a farm advisory firm assisting producers in marketing their crops.

She joined the Chicago Board of Trade in 1989. During her six years with the exchange, Sue traveled worldwide teaching the use of agricultural futures and options markets. Additionally, she specialized in the development of educational materials and booklets for the commercial hedger.

Sue has been self-employed as a consultant since 1995. In this capacity, she works with domestic and foreign businesses teaching cash/physical market fundamentals, the practical use of futures and options, and writing technical materials.

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