Commodity Options

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SOUTHERN EXTENSION RISK MANAGEMENT EDUCATION

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Options Example

- **Your neighbor is offering to sell 160 acres at a price of $1,200/acre. You want to purchase the land but can't right now. What can you do to lock in the right to buy the land at $1,200?**
- **Persuade your neighbor to sell you an option to purchase the land anytime during the next 6 months at that price. For this privilege, you pay the neighbor $25/ac.**

Land Example (con't)

- The option expires in 6 months, it costs $25/acre for the right to buy land at $1,200/acre.
- In options terminology:
  - Expiration = 6 months
  - Premium = $25/acre
  - Strike Price = $1,200
  - Right to buy = call option

Land Example (con't)

- If you decide *not* to buy the land, you let the option expire; or you may sell the option to someone else. You are not obligated to make a purchase—the choice is yours.
- If you decide to buy the land, you pay the owner the $1,200/ac within the next 6 months. The total cost of the land is $1,225/acre.
- The cost of this marketing flexibility is the premium or cost of the option.

Option Markets

- An option is simply the right but not the obligation to buy or sell something at a predetermined price at anytime within a specific time period.
- Put option—gives the buyer the right to sell the underlying commodity
- Call option—gives the option buyer the right to buy the underlying commodity

Characteristics of an Options Contract

- Put or Call (right to sell or buy)
- Underlying Futures Contract
- Strike Price
- Expiration Date
- Premium

Types of Options

- **Put option: Grants the buyer of the put option the right but not the obligation to *sell* a futures contract at a specified price within a specified timeframe (put--short position)**
- **Call option: Grants the buyer of the call option the right but not the obligation to *buy* a futures contract at a specific price within a specified timeframe (call--long position)**

Options Traders

- **Buyer**
  - **Person who obtains the rights conveyed by the option; pays the premium**
- **Seller**
  - **Person who sells the rights of an option contract in return for a price; receives the premium (landowner in our previous example)**

Corn Dec '21 (ZCZ21)

455-0s **5-0 (-1.09%)** 01/19/21 [CBOT]

OPTIONS PRICES for Tue, Jan 19th, 2021

TRADE NOW

Alerts Watch Help

Make this my default view

Options Type: American Options | Dec 2021 | Near-the-Money | Stacked | Intraday | download

310 Days to expiration on **11/26/21** Implied Volatility: **26.54%** Price Value of Option point: **$50**

Strike	High	Low	Last	Change	Bid	Ask	Volume	Open Int	Premium	Last Trade	Links
410-0C	67-0	64-6	64-6s	-3-3	N/A	N/A	94	5,327	3,237.50	01/19/21	
410-0P	20-0	18-0	19-6s	+1-4	N/A	N/A	274	8,802	987.50	01/19/21	
420-0C	61-0	58-3	59-2s	-3-3	N/A	N/A	23	13,660	2,962.50	01/19/21	
420-0P	24-2	22-5	24-2s	+1-5	N/A	N/A	362	9,906	1,212.50	01/19/21	
430-0C	55-5	54-3	54-3s	-3-1	N/A	N/A	406	5,093	2,718.75	01/19/21	
430-0P	29-4	28-0	29-3s	+1-7	N/A	N/A	295	4,855	1,468.75	01/19/21	
440-0C	52-0	49-7	49-7s	-3-0	N/A	N/A	365	6,807	2,493.75	01/19/21	
440-0P	35-0	33-4	34-7s	+2-0	N/A	N/A	55	3,503	1,743.75	01/19/21	
450-0C	50-0	45-4	45-5s	-3-0	N/A	N/A	519	9,604	2,281.25	01/19/21	
450-0P	41-0	39-3	40-5s	+2-0	N/A	N/A	453	2,755	2,031.25	01/19/21	
460-0C	43-7	41-7	41-7s	-2-7	N/A	N/A	784	8,089	2,093.75	01/19/21	
460-0P	47-2	45-6	46-7s	+2-1	N/A	N/A	74	1,819	2,343.75	01/19/21	
470-0C	40-4	38-3	38-3s	-2-6	N/A	N/A	128	4,536	1,918.75	01/19/21	
470-0P	53-3	53-3	53-3s	+2-2	N/A	N/A	100	175	2,668.75	01/19/21	
480-0C	35-4	35-2	35-2s	-2-6	N/A	N/A	415	5,081	1,762.50	01/19/21	
480-0P	60-2	60-2	60-2s	+2-2	N/A	N/A	N/A	2	3,012.50	01/19/21	
490-0C	33-6	32-3	32-3s	-2-5	N/A	N/A	200	1,373	1,618.75	01/19/21	
490-0P	67-3	67-3	67-3s	+2-3	N/A	N/A	N/A	65	3,368.75	01/19/21	
500-0C	33-0	29-3	29-6s	-2-4	N/A	N/A	1,288	29,480	1,487.50	01/19/21	
500-0P	74-6	74-6	74-6s	+2-4	N/A	N/A	30	141	3,737.50	01/19/21	

Prices are reported in 1/8^{ths} of a cent, minimum price move = 1/8 cent

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Option Values

- **Premium is the negotiated price of the option; made up of two components:**

Premium = Intrinsic Value + Time Value

Intrinsic Value

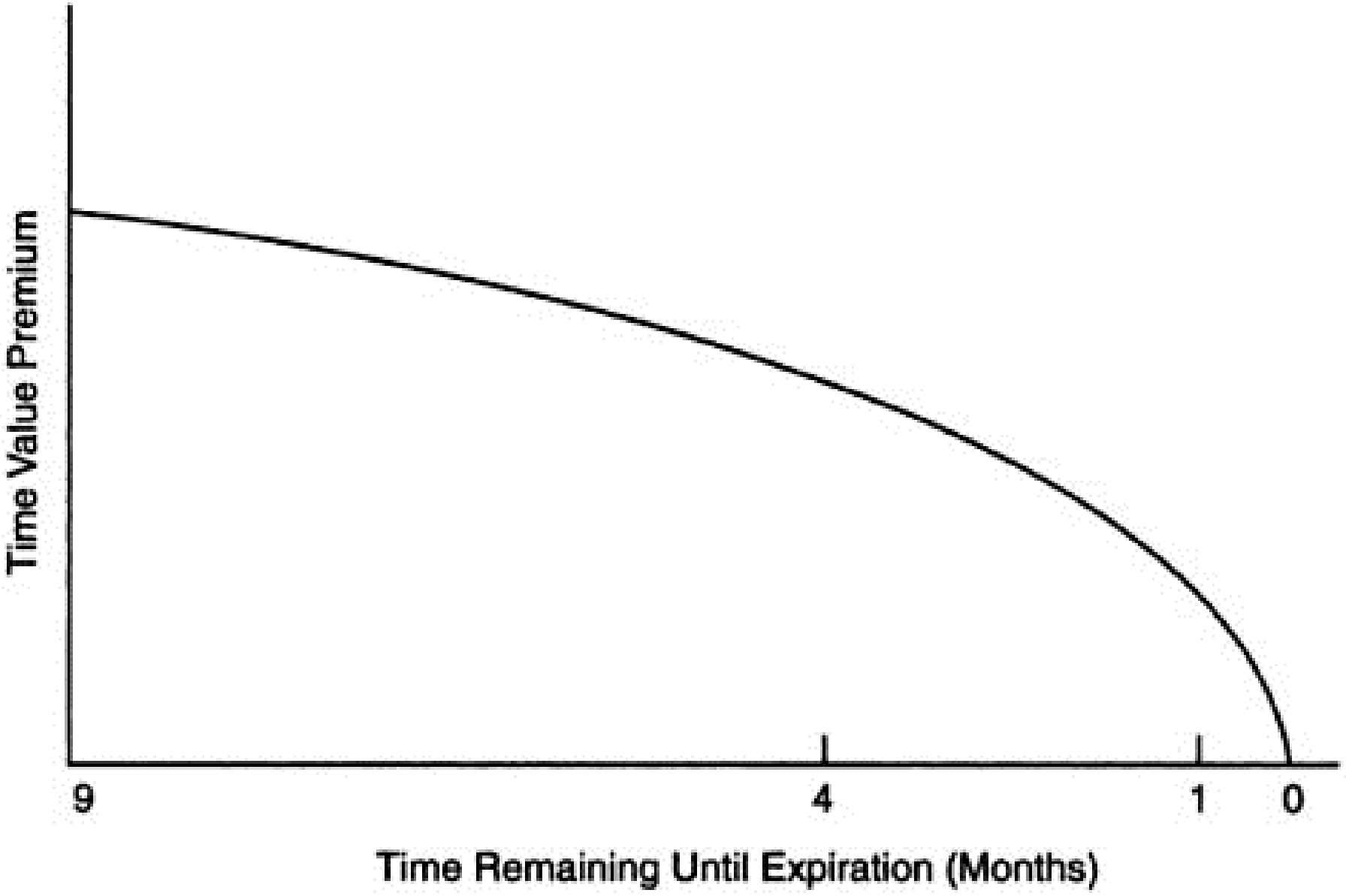
- **Positive difference between Strike Price and Underlying Commodity Price**
  - **For a put, Strike Price above the Futures Price**
  - **For a call, Strike Price below the Futures Price**
- **An option has intrinsic value if it would be profitable to exercise the option.**

December Futures: 455

450 Put is the right to sell a December Futures contract at 450
450 Call is the right to buy a December Futures contract at 450

Time Value

- Portion of premium associated with the number of days until expiration
- Time value declines as expiration date approaches. Conversely, the greater number of days until expiration, the greater the time value.
- Time value increases as market volatility increases.



Determining Option Classifications

	Put Options	Call Options
In-the-money	Futures price < Strike price	Futures price > Strike price
At-the-money	Futures price = Strike price	Futures price = Strike price
Out-of-the-money	Futures price > Strike price	Futures price < Strike price

Premium equals intrinsic value plus time value

Futures trading at 455, 450 put at 40⅝
Futures price > Strike price, out-of-the-money (not profitable to exercise)
Intrinsic value = Strike minus Futures = 450 minus 455 = negative, zero value
Time value = Premium minus intrinsic value = 40⅝ minus 0 = 40⅝

Futures trading at 455, 450 call at 45⅝
Futures price > Strike price, in-the-money (profitable to exercise)
Intrinsic value = Futures minus Strike price = 455 minus 450 = 5
Time value = Premium minus intrinsic value = 45⅝ minus 5 = 40⅝

Option Value at Expiration

- **An option's value at expiration will be equal to its intrinsic value (time value will go to zero).**
- **The only value will be the amount it is 'in-the-money'.**
- **This is true for both puts and calls.**

Basic Information on Options

- Options are traded in “pits” similar to futures contracts or electronically.
- Each exchange is allowed to provide the market for option contracts on any futures contract that they are currently trading.
- Not all futures contracts have options.
- Option contracts generally expire in the month prior to the futures contract (options on September corn expire in August, exception FC).

Premium Determination

- Commodity exchange is responsible for determining strike prices.
- The premium for each strike price is determined by open out-cry or electronic auction .
- However, premium values are influenced by a number of factors:
  - Whether the option is a put or a call
  - The length of time until maturity
  - The price level of underlying futures contracts
  - Volatility of commodity's prices

Choices for Option Buyers

- Options are like futures and can thus be traded.
- Option buyers have three choices
  - Exercise the option
  - Trade the option/Offset (the most commonly used)
  - Let the option expire/Do nothing

Exercising and Trading Options

- If a buyer exercises the option, he or she is now placed in a futures position.
- Once in a futures position, must post margin and pay another commission.
- Because of additional commission and time value of margin money, most buyers choose to trade the option back to the market, i.e., sell the option to the market.
- Sometimes, the market is not liquid enough to allow the trade and the option buyer must exercise the option.

Choices for Option Sellers

- **Sellers of options have two choices:**
  - **Wait for the buyer to either exercise or let the option expire**
  - **Trade the option (buy it back from the market) to offset the position**

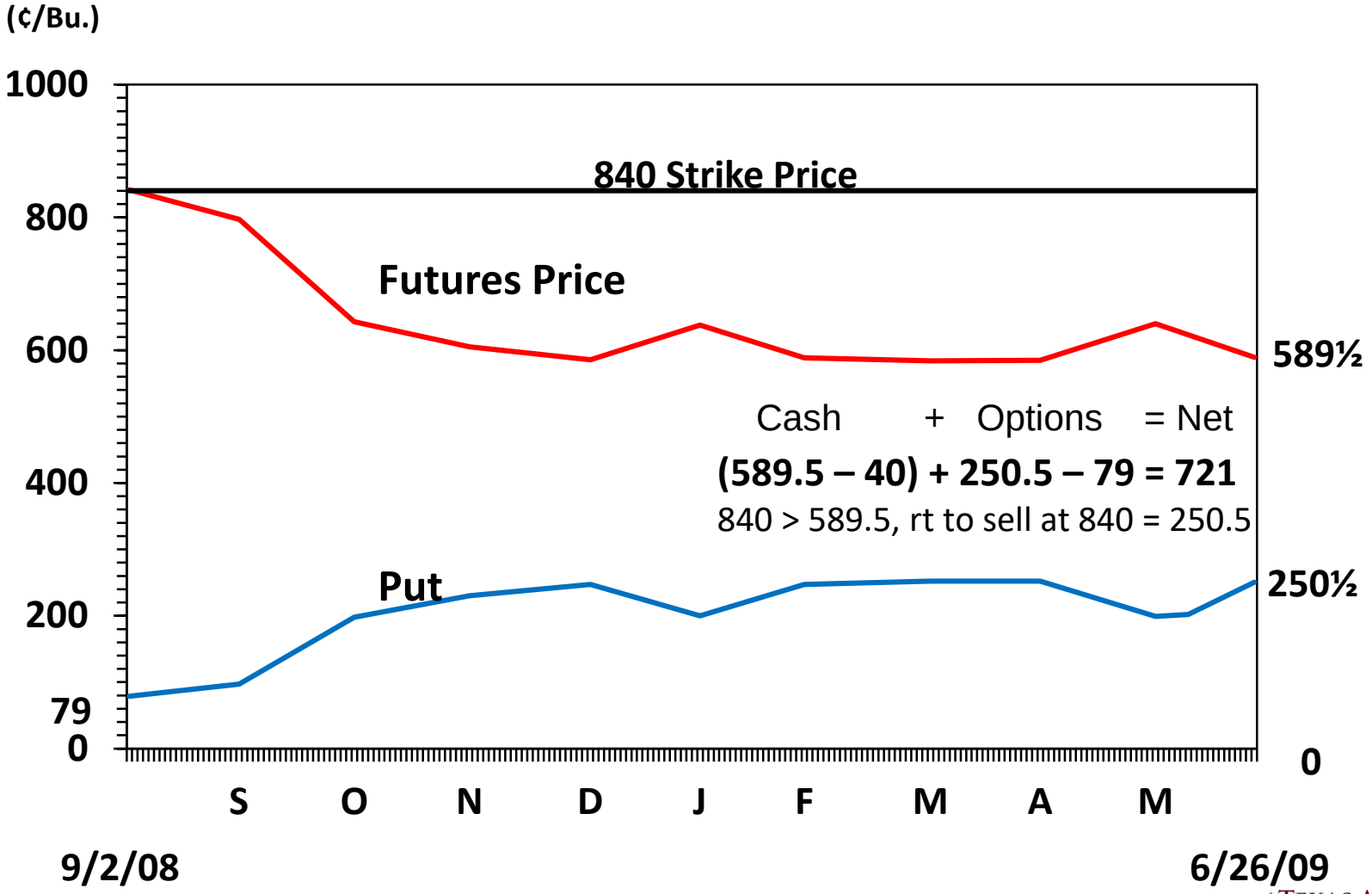
Buying and Selling Options

- **Buying Option**
  - **When purchasing an option, the buyer must pay for it in full by the morning of the next business day.**
- **Selling Option**
  - **The writer of the option maintains a margin account with a broker.**

July 2009 Wheat Futures and Options Premiums

840 Put @ 79, -40 basis

Floor = strike – premium + basis: 840 - 79 - 40 = 721



Puts profit as prices plummet

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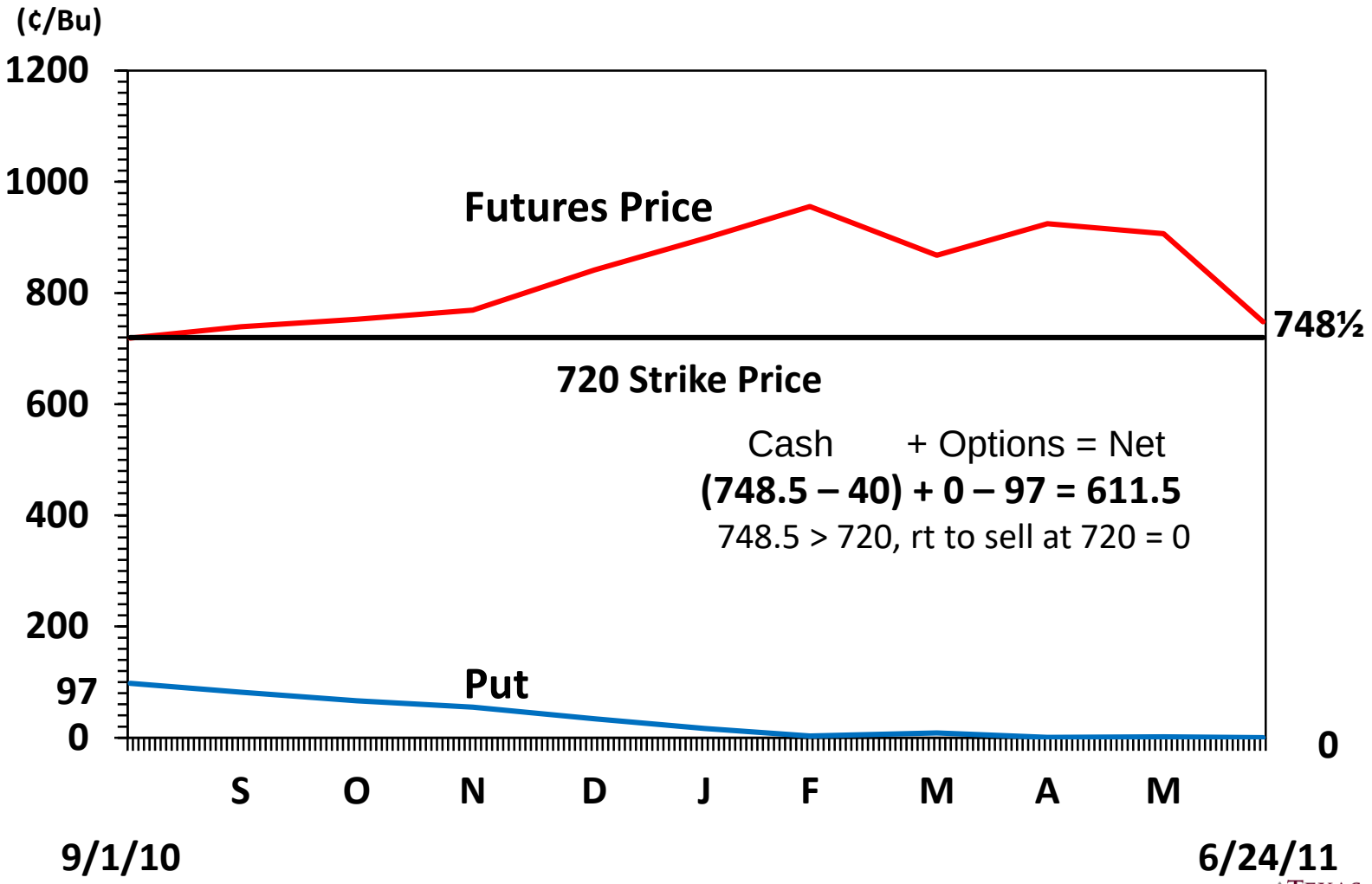
July 2011 Wheat Futures and Options Premiums

720 Put @ 97, -40 basis

Floor = strike – premium + basis: 720 - 97 - 40 = 583



Puts profit as prices plummet

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Advantages and Disadvantages of Buying a Put Option

- **Advantages**
  - Acts as price insurance: locks in a floor price while letting you benefit from favorable price movements
  - No margin calls
  - Limited risk (the most you can lose is the premium)
  - No requirement to exercise
- **Disadvantages**
  - Cost; premiums in volatile markets are expensive
  - Pay premium up front
  - Still have basis risk
  - Option premiums may be an eroding asset
  - Option premium changes may not equal futures price changes