Mark Welch, Extension Economist—Grain Marketing
JMWelch@tamu.edu (979)845-8011

Marketing Tools

- Cash sell at harvest
- Pool sales
- Cash forward contract
- Sell futures contracts
- Buy put options
- Buy puts and sell calls
- Cash contract and buy calls
- Sell futures and buy a call, sell a call
- Buy a put, sell a put, buy a call
- Buy options on contracted or pooled sales

SOUTHERN EXTENSION RISK MANAGEMENT EDUCATION

TEXAS A&M AGRILIFE EXTENSION

Marketing Strategies

Basics

1. Do Nothing
   - Cash sales at harvest
2. Fix Price Now
   - Cash forward contract
   - Hedge with futures contracts
3. Set a Price Floor
   - Options

Advanced

4. Set a Price Floor/Ceiling
   - Options

Texas A&M AgriLife Extension

1. Do Nothing

- If you do no pre-harvest pricing, you are a speculator in the cash market.
- You accept all the price risk between now and whenever you decide to sell.

2. Fix Price Now—Cash Contract

- Private negotiation in which the producer and the merchant agree now upon a price of a commodity to be delivered in the future
- Advantages
  – Producer and merchant lock in a price ahead of time
  – Helps eliminate the uncertainty caused by price fluctuations

2. Fix Price Now: Hedging with Futures Contracts

- Hedging is a position in the futures market that is opposite one's position in the cash market.
- Since futures and cash markets move together, any loss in the cash market is offset by gains in the futures market.
- Hedging is doing ***now*** in the futures market what you anticipate doing ***later*** in the cash market.

Corn	C		Futures			
prices in $/bushel		Current	$ 3.5800			
		Harvest	$ 3.35			
		Basis	$ 0.20			
		Contract Offer	$ 3.80			
Acres		1,000				
bu/acre		140				
est. production, bu		140,000				
pre-harvest mkt		0.5				
pre harvest bushels		70,000				
contract spec, bu		5,000				
contracts to hedge		14.0				
contract month		December	Options exp	11/20/2020	Contract exp	12/14/2020

What if I'm right: 3.66/bu

Hedging with Futures Contracts

	Pre-delivery							
		Sell Futures	14	December	C	$3.58000		
	At delivery							
		Buy Futures	14	December	C	$3.35		
		Profit(loss)				$0.23000		$16,100.00
		Commission ($50/contract)						($700.00)
		Net profit (loss) from hedge						$15,400.00
		Basis at delivery				$0.2000		
		Sell	140,000	bushels		$3.55		$497,000.00
		Net grain sales						$512,400.00
		Average price per bushel						$3.6600

Corn	C		Futures
prices in $/bushel		Current	$ 3.5800
		Harvest	$ 3.75
		Basis	$ 0.20
		Contract Offer	$ 3.80
Acres		1,000	
bu/acre		140	
est. production, bu		140,000	
pre-harvest mkt		0.5	
pre harvest bushels		70,000	
contract spec, bu		5,000	
contracts to hedge		14.0	
contract month		December	Options exp

11/20/2020 Contract exp 12/14/2020

What if I'm wrong: 3.86/bu

Hedging with Futures Contracts								
	Pre-delivery							
		Sell Futures	14	December	C	$3.58000		
	At delivery							
		Buy Futures	14	December	C	$3.75		
		Profit(loss)				($0.17000)		($11,900.00)
		Commission ($50/contract)						($700.00)
		Net profit (loss) from hedge						($12,600.00)
		Basis at delivery				$0.2000		
		Sell	140,000	bushels		$3.95		$553,000.00
		Net grain sales						$540,400.00
		Average price per bushel						$3.8600

Hedging Calculator

Texas A&M AgriLife Extension

Put: right to sell; Call right to buy

Basic Option Strategies

	PUT	CALL
	Buy	Sell
	Sell	Buy

Put: right to sell; Call right to buy

Buying Put Options

- Effectively creates a minimum price contract
- Never the most profitable strategy
- Limits losses if prices go down
- Gains are unlimited if prices go up
- Expensive

Corn Example

- **Situation:**
  - You are a corn farmer who wants protection in case prices fall by harvest
- **Strategy:**
  - Buy a December put option

Determine Expected Selling Price;

December corn is trading at 358 per bushel

Strike Prices	Put Premiums
330	3.000
340	5.250
350	8.875
360	13.750
370	20.125
380	27.625

Texas A&M AgriLife Extension

Determine Expected Selling Price

Select Appropriate Futures Contract Month	December		
Select Appropriate type of Option	Buy Put (right to sell)		
Calculate Minimum Selling Price			
Strike price	340	350	360
Subtract premium	-5.250	-8.875	-13.750
Adjust for basis	+20	+20	+20
Minimum price	354.75	361.125	366.25

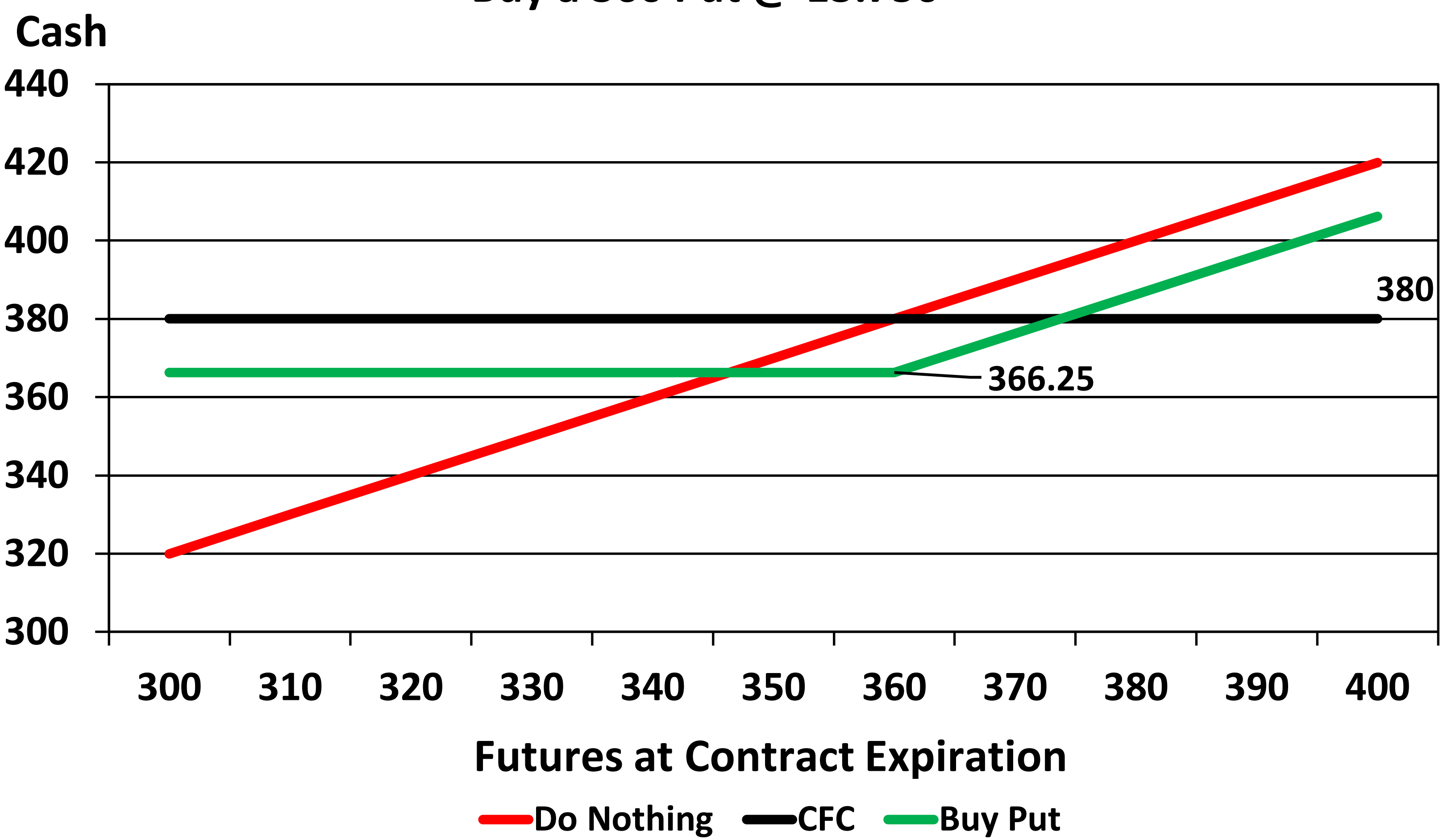
Texas A&M AgriLife Extension

Marketing Strategies

Do Nothing, Cash Forward Contract, Buy a Put

Futures @ 358, CFC @ 380, Expected Basis = +20

Buy a 360 Put @ 13.750



Put floor = strike price minus premium plus basis

Put floor = 360 – 13.75 + 20 = 366.25

TEXAS A&M AGRILIFE EXTENSION

Corn	C		Futures		Strike	Premium
prices in $/bushel		Current	$ 3.5800	At the money put	$ 3.60	$ 0.13750
		Harvest	$ 3.35	At the money call	$ 3.60	$ 0.11750
		Basis	$ 0.20			
		Contract Offer	$ 3.80			
Acres		1,000				
bu/acre		140				
est. production, bu		140,000				
pre-harvest mkt		0.5				
pre harvest bushels		70,000				
contract spec, bu		5,000				
contracts to hedge		14.0				
contract month		December	Options exp	11/20/2020	Contract exp	12/14/2020

What if I'm right: 3.60/bu

Buying Puts								
	Pre-delivery							
		December	C	trading at		$3.58000		
		Buy Puts	14	December	C	$3.60	-$0.1375	($9,625.00)
	At delivery							
		December	C			$3.35		
		Sell Puts	14	December	C	$3.60	$0.2500	$17,500.00
		Profit(loss)					$0.1125	$7,875.00
		Commission ($50/contract)						($700.00)
		Net profit (loss) from trade						$7,175.00
		Basis at delivery				$0.2000		
		Sell	140,000	bushels		$3.55000		$497,000.00
		Net grain sales						$504,175.00
		Average price per bushel						$3.60125

Corn	C		Futures		Strike	Premium
prices in $/bushel		Current	$ 3.5800	At the money put	$ 3.60	$ 0.13750
		Harvest	$ 3.75	At the money call	$ 3.60	$ 0.11750
		Basis	$ 0.20			
		Contract Offer	$ 3.80			
Acres		1,000				
bu/acre		140				
est. production, bu		140,000				
pre-harvest mkt		0.5				
pre harvest bushels		70,000				
contract spec, bu		5,000				
contracts to hedge		14.0				
contract month		December	Options exp	11/20/2020	Contract exp	12/14/2020

What if I'm wrong: 3.88/bu

Buying Puts								
	Pre-delivery							
		December	C	trading at		$3.58000		
		Buy Puts	14	December	C	$3.60	-$0.1375	($9,625.00)
	At delivery							
		December	C			$3.75		
		Sell Puts	14	December	C	$3.60	$0.0000	$0.00
		Profit(loss)					-$0.1375	($9,625.00)
		Commission ($50/contract)						($700.00)
		Net profit (loss) from trade						($10,325.00)
		Basis at delivery				$0.2000		
		Sell	140,000	bushels		$3.95000		$553,000.00
		Net grain sales						$542,675.00
		Average price per bushel						$3.87625

Put: right to sell; Call right to buy

Basic Option Strategies

	PUT	CALL
	Buy	Sell
	Sell	Buy

Texas A&M AgriLife Extension

Put: right to sell; Call: right to buy

Call Option Example

Underlying commodity: Pizza

Strike Price: $10.99

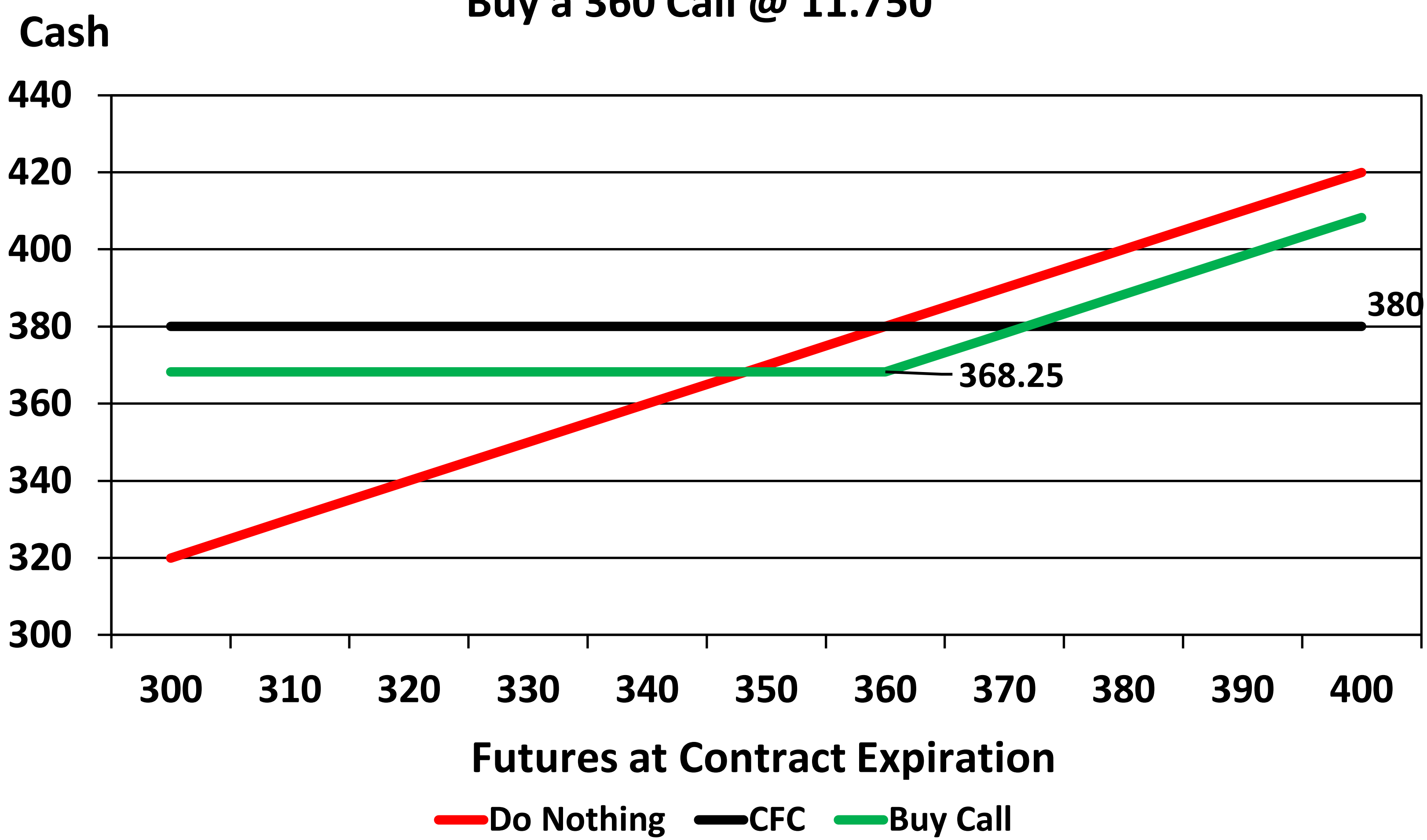
Expiration Date: when the coupon expires

Premium: free

Marketing Strategies

Do Nothing, Cash Forward Contract, CFC and Buy a Call

Futures @ 358, CFC @ 380, Expected Basis = +20
Buy a 360 Call @ 11.750



CFC and Buy a Call floor = contract price minus call premium
CFC and Buy a Call floor = 380 – 11.75 = 368.25

TEXAS A&M AGRILIFE EXTENSION

Corn	C		Futures		Strike	Premium
prices in $/bushel		Current	$ 3.5800	At the money put	$ 3.60	$ 0.13750
		Harvest	$ 3.35	At the money call	$ 3.60	$ 0.11750
		Basis	$ 0.20			
		Contract Offer	$ 3.80			
Acres		1,000				
bu/acre		140				
est. production, bu		140,000				
pre-harvest mkt		0.5				
pre harvest bushels		70,000				
contract spec, bu		5,000				
contracts to hedge		14.0				
contract month		December	Options exp	11/20/2020	Contract exp	12/14/2020

What if I’m right:

3.61/bu

Cash Forward Contract and Buy a Call

	Pre-delivery							
		December	C	trading at		$3.58000		
		Cash forward contact offer				$3.8000		
		Implied basis				$0.2200		
		CFC	70,000	bushels		$3.8000		$266,000.00
		Buy Calls	14	December	C	$3.60	-$0.1175	($8,225.00)
	At delivery							
		December	C	trading at		$3.35		
		Sell Calls	14	December	C	$3.60	$0.0000	$0.00
		Profit(loss)					-$0.1175	($8,225.00)
		Commission ($50/contract)						($700.00)
		Net profit (loss) from trade						($8,925.00)
		Basis at delivery				$0.20		
		Sell	70,000	bushels		$3.55		$248,500.00
		Sell	70,000	bushels		$3.8000		$266,000.00
		Net grain sales						$505,575.00
		Average price per bushel						$3.61125

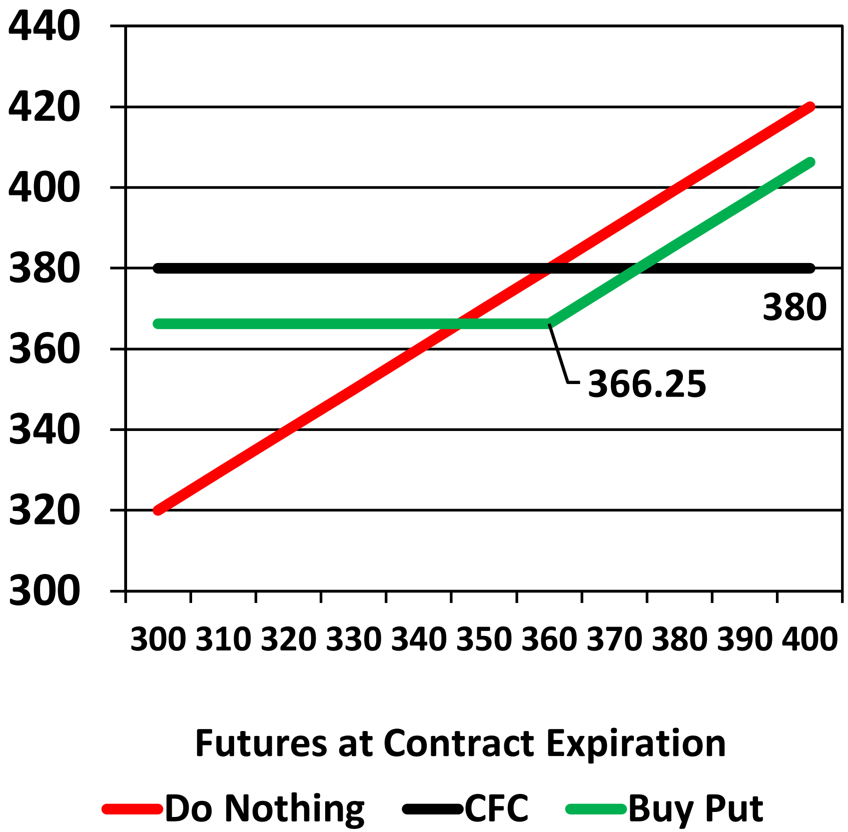
Corn	C		Futures		Strike	Premium
prices in $/bushel		Current	$ 3.5800	At the money put	$ 3.60	$ 0.13750
		Harvest	$ 3.75	At the money call	$ 3.60	$ 0.11750
		Basis	$ 0.20			
		Contract Offer	$ 3.80			
Acres		1,000				
bu/acre		140				
est. production, bu		140,000				
pre-harvest mkt		0.5				
pre harvest bushels		70,000				
contract spec, bu		5,000				
contracts to hedge		14.0				
contract month		December	Options exp	11/20/2020	Contract exp	12/14/2020

What if I'm wrong: 3.89/bu

Cash Forward Contract and Buy a Call								
	Pre-delivery							
		December	C	trading at		$3.58000		
		Cash forward contact offer				$3.8000		
		Implied basis				$0.2200		
		CFC	70,000	bushels		$3.8000		$266,000.00
		Buy Calls	14	December	C	$3.60	-$0.1175	($8,225.00)
	At delivery							
		December	C	trading at		$3.75		
		Sell Calls	14	December	C	$3.60	$0.1500	$10,500.00
		Profit(loss)					$0.0325	$2,275.00
		Commission ($50/contract)						($700.00)
		Net profit (loss) from trade						$1,575.00
		Basis at delivery				$0.20		
		Sell	70,000	bushels		$3.95		$276,500.00
		Sell	70,000	bushels		$3.8000		$266,000.00
		Net grain sales						$544,075.00
		Average price per bushel						$3.88625

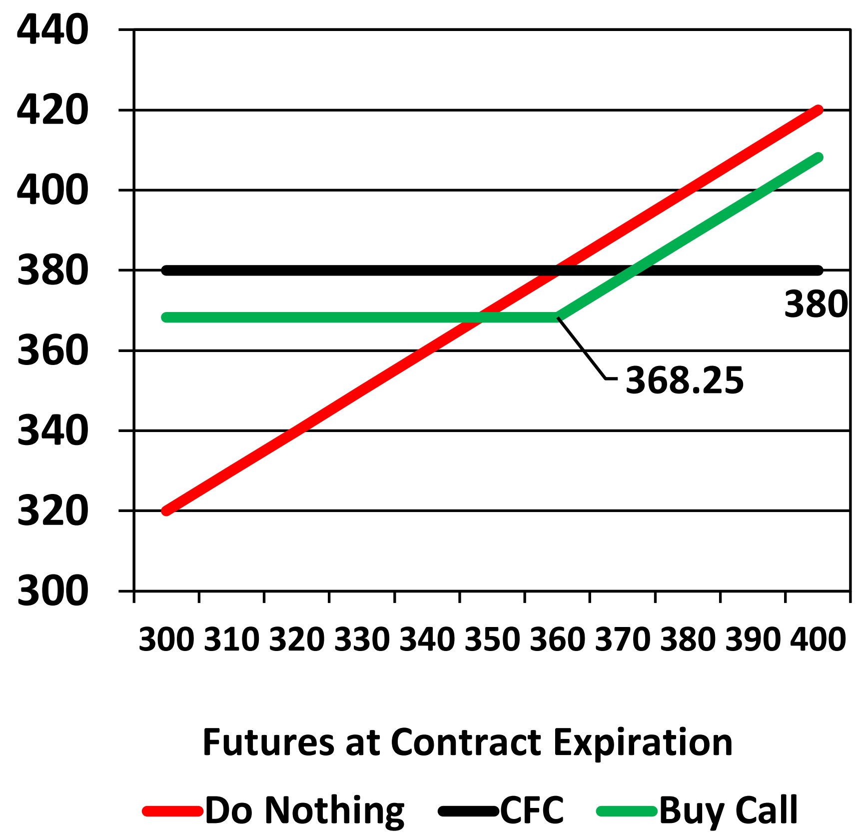
Establish a Price Floor

Buy Put



Basis open

CFC and Buy Call



Locks in the basis

Texas A&M AgriLife Extension

Factors to be Considered when Buying Options

- Buyer must decide strike price/premium
- Buyer must decide whether or not to exercise

Buying Put Options

- Effectively creates a minimum price contract
- Never the most profitable strategy
- Limits losses if prices go down
- Gains are unlimited if prices go up
- Expensive

Futures or Options?

- Use options in markets likely to be characterized by large and sustained price moves
- Use options when there will be problems in arranging financing for a margin line
- Use options when the ability to manage a selective hedging program is questionable

Where are we?

Mark Welch, Extension Economist—Grain Marketing
JMWelch@tamu.edu (979)845-8011

TEXAS A&M AGRILIFE EXTENSION