Marketing Agricultural Commodities: Managing Risk

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What is a Futures Contract?

- A futures contract is a binding agreement between a seller and a buyer to make (seller) and to take (buyer) delivery of the underlying commodity (or financial instrument) at a specified future date with agreed upon payment terms. Most futures contracts don't result in delivery of the underlying commodity.

- Futures contracts are standardized with respect to the delivery month; the commodity's quantity, quality, and delivery location; and the payment terms.

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Future Exchanges Provide

- Rules of conduct that traders must follow or risk expulsion.
- An organized marketplace with established trading hours by which traders must abide.
- Standardized trading through rigid contract specifications, which ensure that the commodity being traded in every contract is virtually identical.
- A focal point for the collection and dissemination of information about the commodity's supply and demand, which helps ensure all traders have equal access to information.
- A mechanism for settling disputes among traders without resorting to the costly and often slow U.S. court system.
- Guaranteed settlement of contractual and financial obligations via the exchange clearinghouse.

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The Purpose of Futures Markets

- Price discovery
  - Futures markets provide a central marketplace where buyers and sellers from all over the world can interact to determine prices.
- Transfer price risk
  - Futures give buyers and sellers of commodities the opportunity to establish prices for future delivery. This price risk transfer process is called hedging.

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Grain Basis

- Basis = Cash – Futures Price
- Less volatile than futures or cash price
- Basis can be positive or negative
- Basis has seasonal trends

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Factors that Determine Basis

- Transportation costs
- Local supply and demand conditions
- Quality variation from underlying futures contract specifications
- Availability of substitutes
- Basis tends to be "wider" in the months prior to contract expiration due to uncertainty
- Basis tends to equal transportation cost as the contract reaches expiration due to the lack of uncertainty

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Changes in a Futures Contact's Value

- A futures contract's value is simply the number of units (bushels, hundredweight, etc.) in each contract times the current price.

- Each contract specifies the volume of grain or livestock it covers.
  - Trade grain and oilseed futures contracts cover 5,000 bushels.
  - Live cattle futures contract covers 40,000 pounds (400 hundredweight).
  - Lean hog futures contract covers 40,000 pounds (400 hundredweight).
  - Feeder cattle futures contract covers 50,000 pounds (500 hundredweight).

- The effect of a change in contract value depends on whether you previously sold or purchased a futures contract.
  - A decrease in contract value (a price decline) is a loss to anyone who previously purchased a futures contract, but a gain for a trader who previously sold a futures contract.
  - An increase in contract value (a price increase) is a gain to anyone who previously purchased a futures contract (i.e., is long), but is a loss for a trader who previously sold a futures contract (i.e., is short).

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Figure 1. Marking-to-Market Buyer and Seller Accounts at Exchange Clearinghouse

Buyer (Long)		
Date	Action	Price
Day 1	Buy at	\$6.00/bushel
Day 2	No action (but price increases)	\$6.10/bushel
		\$0.10/bushel gain x 5,000 bushels
		\$500 gain from day 1
Seller (Short)		
Date	Action	Price
Day 1	Sell at	\$6.00/bushel
Day 2	No action (but price increases)	\$6.10/bushel
		\$0.10/bushel loss x 5,000 bushels
		\$500 loss from day 1

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Futures Trading Terminology

- *Long* – A buyer of a futures contract. Someone who buys a futures contract is often referred to as being long that particular contract.
- *Short* – A seller of a futures contract. Someone who sells a futures contract is often referred to as being short that particular contract.
- *Bull* – A person who expects a commodity's price to increase. If you are bullish about wheat prices you expect them to increase.
- *Bear* – A person who expects a commodity's price to decline. If you are bearish about wheat prices you expect them to decline.
- *Market Order* – An order to buy or sell a futures contract at the best available price . A market order is executed by the broker immediately. "Sell one July KCBT wheat, at the market" is an example of a market order.
- *Limit Order* – An order to buy or sell a futures contract at a specific price, or at a price that is more favorable than the price specified. For example, "Buy one March KCBT wheat at $6.30 limit" means buy one March KCBT wheat contract at $6.30 or less. In this example, the order will not be executed at a price higher than $6.30.
- *Stop Order* – An order which becomes a market order if the market reaches a specified price. A stop order to buy a futures contract would be placed with the stop price set above the current futures price. Conversely, a stop order to sell a futures contract would be placed with the stop price set below the current futures price.

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Using Futures Contracts in a Farm Marketing Program

- Futures contracts can be useful when marketing grain or livestock because they can be a temporary substitute for an intended transaction in the cash market that will occur at a later date.
- Futures contract prices can be used as a source of price forecasts. A futures contract price represents today's opinion of what a commodity's value will be when the futures contract expires. If a history of the difference between a commodity's futures contract and cash prices, for a particular grade and specific location of interest (known as the basis) is available, it can be used to estimate a futures market-based cash price forecast.

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The Basics of Options

- An option is an agreement between two parties, a buyer and a seller.
- In the case of futures contract options, the buyer acquires the right, but not the obligation, to buy or sell a specific futures contract at a known fixed price at any time on or before a known expiration date.
- There are two types of options: PUTS and CALLS. They offer opposite pricing alternatives.
- Each offers an opportunity to take advantage of futures price moves without actually having a futures position.
- A put option gives the buyer the right to sell in the underlying futures market and a call option gives the buyer the right to buy.

The Basics of Options (continued)

- Unlike futures, after paying the option premium the buyer has no further obligation.
- Purchasing options does not require margin deposits.
- What you can do with an option:
  - Allow it to expire
  - Exercise the option
  - Offset
- Option premiums are determined by open outcry of bids on the trading floor of the exchange.
- The buyer of the option determines the delivery month and strike price he desires.

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Put: right to sell; Call right to buy

- **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: An Example

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

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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

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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

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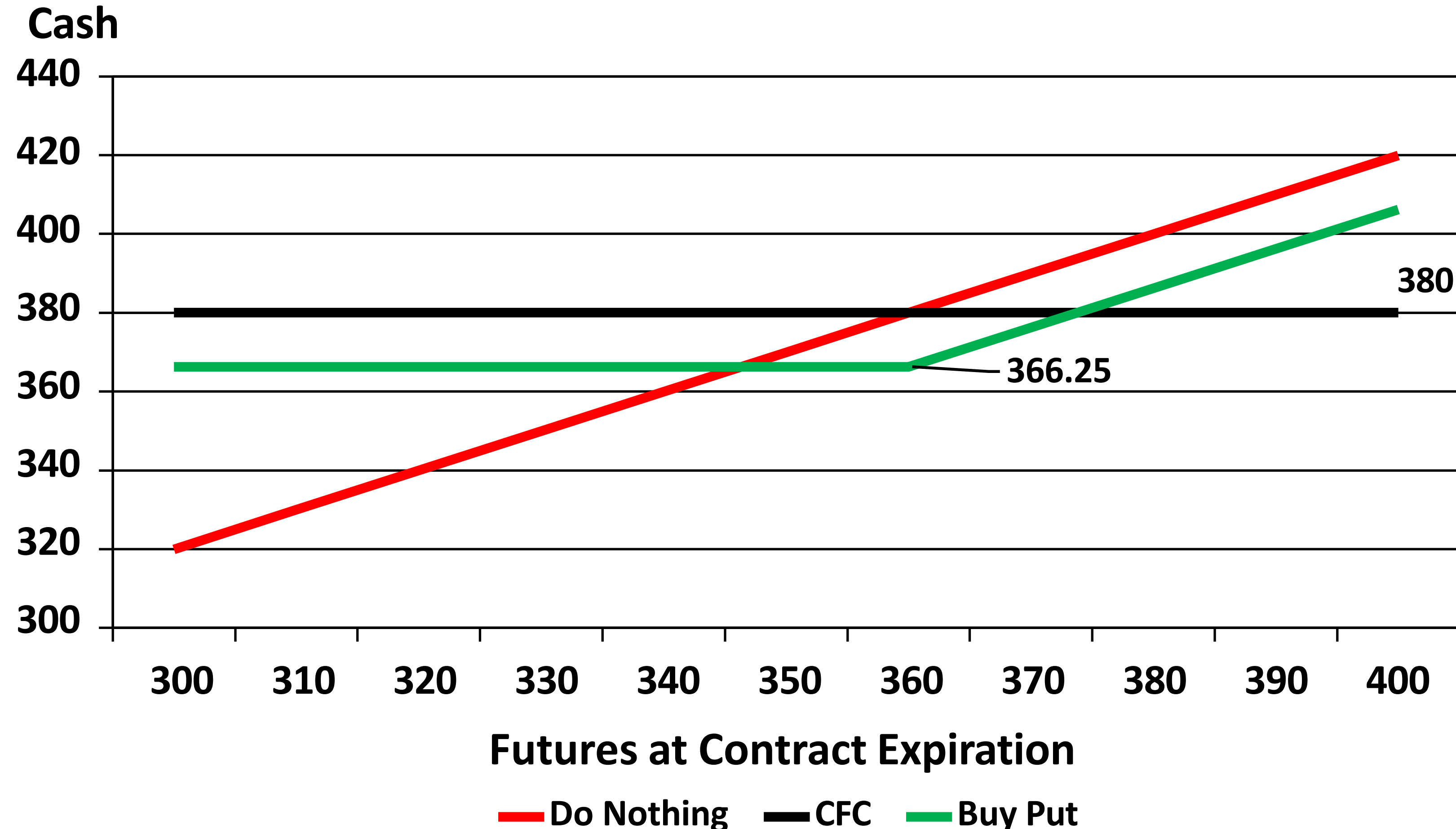
Marketing Strategies

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

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CASE EXAMPLE: Put Option

A producer expects to harvest 500 bales of cotton.

In June, the March cotton futures is at 71 cents per pound. The producer buys a put option contract for a strike price "at-the-money", at a premium of 4 cents per pound. As the cotton is coming up, the October crop report comes out and says that there will be a record cotton crop. As a result, March cotton futures crop to 60 cents per pound. The put option is now up to 11 cents per pound. The producer has the option to sell this put to someone else for a premium of 11 cents per pound.

			cents/pound
June:	March Futures		71.00
	March put premium		4.00

			cents/pound
October:	March Futures		60.00
	March put premium		11.00

			cents/pound
Result:	March premium paid	-4.00	
	March premium received		11.00
	Commission charge		-1.00
	Net gain (loss)		6.00

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CASE EXAMPLE: Call Option

A producer expects to harvest 500 bales of cotton.

In June, the March cotton futures are at 71 cents per pound. The producer buys a call option contract for a strike price “at-the-money”, at a premium of 4 cents per pound. As the cotton is coming up, the October crop report comes out and says that there will be a record cotton crop. In this case, March cotton futures drop to 60 cents per pound. The call option is now worth almost nothing.* A trader will not want a call option that allows him to buy March futures at 71 cents per pound, when he is currently able to purchase March futures at 60 cents per pound.

		cents/pound
June:	March Futures	71.00
	March call premium	4.00

		cents/pound
October:	March Futures	60.00
	March call premium	0.00

		cents/pound
Result:	March premium paid	-4.00
	March premium received	0.00
	Commission charge	-1.00
	Net gain (loss)	-5.00

*The call option will probably still have some value to it. There will still be some time value associated with the option. The option does not expire until the middle of February and March futures could still go back up increasing the price of the option.

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Factors to be Considered when Buying Options

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

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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

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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

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Any Questions?

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