COMMODITY MARKETING: USING FUTURES AND OPTIONS AS A RISK MANAGEMENT TOOL

By: Brett Wilder, Hernan Tejeda & Norm Ruhoff
University of Idaho
WORKSHOP OUTLINE

• Session 1: Overview of risk and market analysis
• Session 2: Introduction to futures, basis and hedging
• Session 3: Introduction to options and market scenarios
TODAY’S AGENDA

• Session 1: Overview of risk and market analysis
  • Session 1.1: Understanding risk in agriculture
  • Session 1.2: Introduction to fundamental analysis
  • Session 1.3: Introduction to technical analysis
SESSION 1.1
UNDERSTANDING RISK IN AGRICULTURE
Session 1.1: Understanding Risk in Agriculture

RISK IN AGRICULTURE

1. Production risk
2. Price or market risk
3. Financial risk
4. Institutional risk
5. Human or personal risk

PRODUCTION RISK

Derives from the uncertain natural growth processes of crops and livestock. Weather, disease, pests, and other factors affect both the quantity and quality of commodities produced.
Refers to uncertainty about the prices producers will receive for commodities or the prices they must pay for inputs. The nature of price risk varies significantly from commodity to commodity.
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FINANCIAL RISK

Results when the farm business borrows money and creates an obligation to repay debt. Rising interest rates, the prospect of loans being called by lenders, and restricted credit availability are also aspects of financial risk.
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INSTITUTIONAL RISK

Results from uncertainties surrounding Government actions. Tax laws, regulations for chemical use, rules for animal waste disposal, and the level of price or income support payments are examples of government decisions that can have a major impact on the farm business.
HUMAN OR PERSONAL RISK

Refers to factors such as problems with human health or personal relationships that can affect the farm business. Accidents, illness, death, and divorce are examples of personal crises that can threaten a farm business.
WHY FOCUS ON PRICE RISK?

• Tools are available which allow us to manage this type of risk and guarantee that an “insured or protected” portion of our crop will meet a minimum price

• Managing price risk can provide more stability to your bottom line

• Price risk management protects us from price volatility
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PRICE VOLATILITY: GRAINS EXAMPLE

- Aug 2007 - $7.21
- Feb 2008 - $11.70
- Storage cost ~ $0.20/bu
- Potential Gain = $4.29
- Aug 2008 - $8.19
- Feb 2009 - $5.52
- Storage cost ~ $0.20/bu
- Potential Loss = ($2.87)
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PRICE VOLATILITY: CATTLE EXAMPLE

- Nov 2013
  - Fed Steers worth $165/cwt
- Nov 2014
  - Fed Steers worth $231/cwt
- Nov 2015
  - Fed Steers worth $162/cwt
- At 800 lbs, that’s more than a $500 per head annual change

Feeder Cattle Futures
March 29, 2013 - October 31 2015
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PRICE VOLATILITY: MILK EXAMPLE

- Nov 2014
  - $21.93/cwt
- Dec 2014
  - $15.91/cwt
- $6.02 per cwt change in one month

Class III Milk Futures
May 31, 2014 - May 31 2015
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PRICE RISK MANAGEMENT STRATEGIES

1. Enterprise diversification
2. Vertical integration
3. Government programs
4. Forward contracting
5. Hedge to Arrive (HTA) contracts
6. Hedging

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ENTERPRISE DIVERSIFICATION

• Assumes incomes from different crops and livestock activities do not move up and down in perfect correlation, so that low income from some activities would likely be offset by higher income from others.
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VERTICAL INTEGRATION

- Generally decreases risk associated with the quantity and quality of inputs or outputs because the vertically integrated firm retains ownership or control of a commodity across two or more phases of production and/or marketing.
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GOVERNMENT PROGRAMS

• 2014 Farm Bill
  • Title I: Commodities
    • New crop programs – ARC (Agricultural Risk Coverage) and PLC (Price Loss Coverage)
    • Changes to Dairy Program – Price support was replaced with a Margin Protection Program
  • Title XI: Crop Insurance
    • Increased funding from $84.1 to $89.8 billion (6.8% increase) over FY2014-2023
    • Added the Supplemental Coverage Option (SCO) to be used in cooperation with PLC
• Farm Service Agency provides an Agricultural Policy Analysis System
  • Link: http://fsa.usapas.com/

Information from University of Idaho course AGEC 356 Agricultural and Rural Policy, Taught by Dr. Philip Watson
FORWARD CONTRACTING

- Obtaining a fixed cash price for future production through a private contract between the producer and buyer
- Terms of a forward contract are not standardized
- Forward contracts specify:
  - Price
  - Quality
  - Amount of product
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**HEDGING**

- Uses futures or options contracts to reduce the risk of adverse price changes prior to an anticipated cash sale or purchase of a commodity
- The remaining sessions will be primarily focused on this form of price risk management
HEDGE TO ARRIVE (HTA) CONTRACTS

• A contract through an intermediary, that permits the seller to fix a futures price for a specified delivery date.

• Similar to hedging, except…
  • Futures risk and margin management is transferred to the intermediary in exchange for a transaction fee
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SUMMARY

• Price risk management can provide a more stable income
• All of these risk management tools may be used together! There’s no need to pick just one.
• Moving forward
  • How do we know what’s going on with the market?
  • How can we determine future price direction?
SESSION 1.2
INTRODUCTION TO FUNDAMENTAL ANALYSIS
FUNDAMENTAL ANALYSIS

• Fundamental analysis involves the use of economic data to determine future price direction

• What happens when there is a “Fundamental Shift” in the marketplace?
  • Supply and demand factors can make a structural change
Forces of Supply and Demand

Session 1.2: Introduction to Fundamental Analysis

Supply curves slope upward – implying producers will offer more at higher prices.

Demand curves slope downward – implying consumers are willing to buy more at lower prices.
Agricultural Supply Factors
• USDA crop reports
• Cattle inventory
• Cattle on feed
• Milk production

Agricultural Demand Factors
• Export markets
• Consumer information
A structural increase in supply generally leads to lower prices.
A structural decrease in supply generally leads to higher prices.
EFFECTS OF DEMAND CHANGES

- A structural increase in demand generally leads to higher prices
- A structural decrease in demand generally leads to lower prices
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PRICE DETERMINATION & DISCOVERY
Session 1.1: Understanding Risk in Agriculture

PRICE DETERMINATION

- The interaction of broad supply and demand factors that determine the market price level
- Generally, an equilibrium cannot be fully identified until information is published
- The equilibrium is constantly adjusting to new market information
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PRICE DISCOVERY

• The process of buyers and sellers arriving at a transaction price for a given quality and quantity of a product at a given time and place
• True supply and demand is uncertain when negotiations occur
• Transaction prices vary by:
  • Quality, Quantity, Location and Market Structure
### Session 1.1: Understanding Risk in Agriculture

**KANSAS CITY HRW FUTURES PRICES**

#### Price Determination
- **July 2008 End price**
  - $8.15 per bushel
- **July 2009 End price**
  - $5.59 per bushel
- Supply didn’t change dramatically
- Demand did
  - Financial crisis
  - Value of US Dollar increased

#### Price Discovery

**July 2008 Weekly Prices:**
- $9.05 per bushel
- $8.53 per bushel
- $8.38 per bushel
- 8.32 per bushel

**July 2009 Weekly Prices:**
- $5.55 per bushel
- $5.40 per bushel
- $5.67 per bushel
- 5.49 per bushel
SEASONALITY

• Historical tendency for price movements of a particular commodity over the course of a calendar or marketing year
• Reflects market response to different growing conditions over the year (Summer, winter)
• Seasonality is usually stated as a percentage of the average price movement in a given time period
• Examples
  • Chicago SRW Futures
  • Live Cattle Futures
Examples of Seasonality

Session 1.2: Introduction to Fundamental Analysis

10 Year Chicago SRW Seasonality (2007-2016)

10 Year Live Cattle Seasonality (2007-2016)
MARKET PRICE STRUCTURE

Price differences between current and future delivery months for a commodity can serve as an indicator of general market conditions.

Contango (Positive carry market)
- When deferred prices are higher than the nearby delivery price
- Generally “bearish”

Backwardation (Inverted carry market)
- When nearby prices are higher than the deferred delivery price
- Generally “bullish”
CONTANGO EXAMPLE

Chicago Wheat Futures
May 31, 2017
Session 1.2: Introduction to Fundamental Analysis

BACKWARDATION EXAMPLE

Live Cattle Futures
May 31, 2017
Sources of Information

Session 1.2: Introduction to Fundamental Analysis

**Sources of Information**

- Idaho AgBiz Website ([www.uidaho.edu/cals/idaho-agbiz](http://www.uidaho.edu/cals/idaho-agbiz))
- United States Department of Agriculture (USDA)
  - National Agriculture Statistics Service (NASS)
  - Economic Research Service (ERS)
  - USDA Reports at the Mann Library
- Reputable (business pertinent) news sources
  - E-Newsletters, Main-stream newspapers, etc
  - Be cautious: this information may be outdated, irrelevant, and/or based on opinion
Session 1.2: Introduction to Fundamental Analysis

MAJOR REPORTS

- World Agriculture Supply and Demand Estimates (WASDE) Monthly
- Crop Production Monthly
- Crop Progress Weekly (Apr-Dec)
- Cattle on Feed & Livestock Slaughter Monthly
- Cattle Inventory Annual
- Cold Storage Monthly
- Milk Production Monthly
Session 1.2: Introduction to Fundamental Analysis

FALLACIES OF FUNDAMENTAL ANALYSIS

1. Viewing fundamentals in a vacuum
2. Viewing old information as new
3. One-year comparisons
4. Using fundamentals for timing
5. Lack of perspective
6. Ignoring relevant time considerations
7. Assuming that prices cannot decline significantly below the cost of production

From “Futures: Fundamental Analysis” by Jack D. Schwager
FALLACIES OF FUNDAMENTAL ANALYSIS

8. Improper inferences
9. Comparing nominal price levels
10. Ignoring expectations
11. Ignoring seasonal considerations
12. Expecting prices to conform to target levels in world trade agreements
13. Assuming that you have perfect information
14. Confusing the concepts of demand and consumption

From “Futures: Fundamental Analysis” by Jack D. Schwager
Summary

Session 1.2: Introduction to Fundamental Analysis

- Fundamental analysis can help us determine future price direction
- Seasonality and futures curves help us put information in context
- Don’t fall prey to common mistakes!
- Next
  - If supply and demand drives the market, why do we care about charts?
Session 1.3: Introduction to Technical Analysis

WHAT IS TECHNICAL ANALYSIS?

• Technical analysis uses historical prices to determine future price direction.
• Traders who ignore fundamentals and focus solely on technical analysis are referred to as “chartists”.
• While fundamental analysis is important – technical analysis may be a much better short-term tool and should be used to choose trade entry points.
Session 1.3: Introduction to Technical Analysis

WHY DOES IT WORK?

• Remember Schwager’s 13th Fundamental Fallacy?
  • Assuming that you have perfect information
• It is impossible for any individual to have all information about a market
  • BUT – Historical price action shows us what all traders in the market are thinking
• Patterns in historical prices are statistically proven to add value!
  • Most research is done on stocks, but if you need proof – go to “The Pattern Site”
  • http://thepatternsite.com/chartpatterns.html
Session 1.3: Introduction to Technical Analysis

COMMON CHART TYPES

Bar Chart

Candlestick Chart
Session 1.3: Introduction to Technical Analysis

WHAT DO THEY MEAN?

Reading Bar Charts

Reading Candlesticks
Session 1.3: Introduction to Technical Analysis

READING THE WHOLE CHART
Session 1.3: Introduction to Technical Analysis

CHART FUNCTIONS
In most cases, commodity prices tend to rise and fall to predictable levels.

A “Support Level” refers to a point on the chart that represents the bottom of a trading range.
  
  - If prices trade below a support level, it is a sign they will likely continue lower.

A “Resistance Level” refers to a point on the chart that represents the top of a trading range.
  
  - If prices trade above a resistance level, it is a sign they will likely continue higher.
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SUPPORT AND RESISTANCE

Support Level

Resistance Level

Buy Signal
TRENDS

• Uptrend
  • Commodity prices make higher highs and higher lows

• Downtrend
  • Commodity prices make lower highs and lower lows

• Sideways Range
  • Commodity prices are not in a downtrend or an uptrend – The top and bottom of the range are generally resistance and support levels
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TRENDS

Uptrend

- Fails to make higher high
- Broke below trendline – Trend change confirmed
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TRENDS

Downtrend

Failed to make lower low

Broke out of downtrend
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TRENDS

Support Level
Resistance Level
Sideways Range

Broke out of sideways range (Consolidation)
TECHNICAL INDICATORS

• Volume
  • The number of contracts traded over a given time interval

• Price Action
  • Reversal Candlestick Patterns
  • Pivot points

• Simple Moving Averages
Session 1.3: Introduction to Technical Analysis

VOLUME & OPEN INTEREST
Session 1.3: Introduction to Technical Analysis

REVERSAL CANDLESTICK PATTERNS

- Most powerful reversal patterns
  - “Long shadow” patterns
  - Hammer and shooting star candles
  - “Engulfing” patterns
  - Bullish/Bearish Engulfing candles
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**HAMMER CANDLE**

- Small body with a long lower shadow
- Follows a multi-day selloff as buyers regain control
- Points to a bullish near-term future
SHOOTING STAR CANDLES

- Small body with a long upper shadow
- Follows a multi-day rally as sellers regain control
- Points to a bearish near-term future
**Bullish Engulfing**
- Formed when the body of a bullish candle completely engulfs the body of the previous day’s bearish candle.

**Bearish Engulfing**
- Formed when the body of a bearish candle completely engulfs the body of the previous day’s bullish candle.

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**Session 1.3: Introduction to Technical Analysis**

**ENGULFING CANDLES**

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[Images of bullish and bearish engulfing candles]
When a stock changes direction, it forms what is called a “pivot point”

- The pivot point is the highest candle of the pivot high or the lowest candle of the pivot low
- It takes three candles to create a pivot
PIVOT HIGH

• Also called a “swing high”
• Forms when a commodity has been trading upward, then pivots to trade downward
• Takes three candles
  • Must be a candle to the lower left and lower right
Session 1.3: Introduction to Technical Analysis

PIVOT LOW

• Also called a “swing low”
• Forms when a commodity has been trading downward, then pivots to trade upward
• Takes three candles
  • Must be a candle to the upper left and upper right
SIMPLE MOVING AVERAGES

• Calculates an average of the closing price for a specified number of days
• Can be used to help interpret trader sentiment
• If prices stray too far from moving averages, than can be overextended
• Moving averages can also be used as support and resistance levels
SIMPLE MOVING AVERAGES

Commonly Used Timeframes

- 20-day Simple moving average (Short-Term)
  - Tracks short term swing traders
- 50-day Simple moving average (Intermediate-Term)
  - Tracks intermediate term position traders
- 200-day Simple moving average (Long-Term)
  - Tracks investors and fund positions
Session 1.3: Introduction to Technical Analysis

SIMPLE MOVING AVERAGES

“Death-Cross”
Session 1.3: Introduction to Technical Analysis

SUMMARY

• Technical analysis, if done correctly, is a powerful tool for determining price trends
• Charts and price action should be used for deciding when to enter a futures or option position
• Simple is better
  • There are COUNTLESS technical studies to look at – the most powerful are the simple ones
  • If you don’t understand an indicator – DON’T USE IT!
SESSION 1
WRAP-UP AND CONCLUSIONS
Session 1: Overview of Risk in Agriculture

CONCLUSIONS

• Agriculture is be a risky business, but with if we use the right tools at the right time we can protect ourselves

• Market fundamentals are the *foundation* for predicting what the market will do in the long run
  • Take time to get to know reports and situations that affect your commodity!

• Technical analysis and historic prices help us identify *targets* in the short run
  • Knowing how to read charts can dramatically increase your bottom line when it comes time to implement a hedge!
NEXT SESSION

• Session 2: Introduction to futures, basis and hedging
  • Session 2.1: Introduction to futures
  • Session 2.2: Introduction to basis
  • Session 2.3: Introduction to hedging


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TODAY’S AGENDA

• Session 2: Introduction to futures, basis and hedging
  • Session 2.1: Introduction to futures
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  • Session 2.3: Introduction to hedging
SESSION 2.1
INTRODUCTION TO FUTURES
HISTORY OF COMMODITY MARKETS

• Cash grain forward contracts in mid 1800’s
  • When prices at harvest were higher, farmers failed to honor forward contracts
  • When prices were lower at harvest, contract writers bought from the cash market rather than honor contracts
• The Chicago Board of Trade organized in 1848
  • Established to bring integrity to commodity markets
  • This was the world’s first futures commodity exchange; First “futures” contract traded in 1865
• Kansas City Board of Trade and Chicago Mercantile Exchange formed in 1870’s
Current growth in trade and high liquidity in futures markets began in 1970’s
  • Most of the capital inflow has come from an increase in speculators and managed money

This growth has been fueled by
  • Price variability in cash ("spot") markets
  • Price instability and increased general uncertainty
Session 2.1: Introduction to Futures

HISTORY OF COMMODITY MARKETS

• Most U.S. agricultural commodities are now cleared through CME Group Inc.
  • 2006 – The Chicago Mercantile Exchange and the Chicago Board of Trade (CBOT) merged to form CME Group Inc.
  • 2008 – CME Group acquired the New York Mercantile Exchange, adding energy and metal futures to its product offerings
  • 2012 – CME acquired the Kansas City Board of Trade (KCBT)

• Most commodities are now traded electronically (rather than open outcry)

WHAT IS A FUTURES CONTRACT?

• A futures contract is a standardized contract that specifies:
  • Commodity
  • Quality
  • Place of Delivery
  • Time of Delivery

• The only thing NOT specified is price!
WHAT IS A FUTURES CONTRACT?

- A trader who sells (goes short) a futures contract is obligated to deliver against the contract.
- A trader who buys (goes long) a futures contract is obligated to take delivery on the contract.
- A trader can offset their sale at any time between the original transaction date and the final trading day of the contract.
- All contracts are financially guaranteed by a “Clearinghouse.”
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CONTRACT SPECIFICATIONS

1. Exchange
2. Contract unit
3. Price quotation
4. Minimum price fluctuation
5. Trading hours
6. Listed contracts (months traded)
7. Settlement method
8. First notice day
9. Termination of trading (Last trading day)
10. Last delivery date
11. Maximum daily limit
12. Grade and quality
# Chicago SRW Wheat Futures

## Contract Specs

<table>
<thead>
<tr>
<th>Category</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contract Unit</strong></td>
<td>5,000 bushels (~ 136 Metric Tons)</td>
</tr>
<tr>
<td><strong>Price Quotation</strong></td>
<td>Cents per bushel</td>
</tr>
<tr>
<td><strong>Trading Hours</strong></td>
<td>Sunday – Friday, 7:00 p.m. – 7:45 a.m. CT and</td>
</tr>
<tr>
<td></td>
<td>Monday – Friday, 8:30 a.m. – 1:20 p.m. CT</td>
</tr>
<tr>
<td><strong>Minimum Price Fluctuation</strong></td>
<td>1/4 of one cent per bushel ($12.50 per contract)</td>
</tr>
<tr>
<td><strong>Listed Contracts</strong></td>
<td>March (H), May (K), July (N), September (U) &amp;</td>
</tr>
<tr>
<td></td>
<td>December (Z)</td>
</tr>
<tr>
<td><strong>Settlement Method</strong></td>
<td>Deliverable</td>
</tr>
<tr>
<td><strong>Termination Of Trading</strong></td>
<td>The business day prior to the 15th calendar day of the contract month.</td>
</tr>
</tbody>
</table>

## Settlement Procedures

- **Wheat Settlement Procedures**

## Price Limits

- **CBOT Position Limits**

## Exchange Rulebook

- **CBOT 14**

## Price Limit Or Circuit

## Vendor Codes

- **Quote Vendor Symbols Listing**

## Last Delivery Date

- Second business day following the last trading day of the delivery month.

## Grade And Quality

- #2 Soft Red Winter at contract price, #1 Soft Red Winter at a 3 cent premium, other deliverable grades listed in Rule 14104.
### Session 2.1: Introduction to Futures

**GRAINS & OILSEEDS CONTRACTS**

<table>
<thead>
<tr>
<th>Contract (Symbol)</th>
<th>Exchange</th>
<th>Contract Size</th>
<th>Pounds/bu</th>
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</thead>
<tbody>
<tr>
<td>Corn (ZC)</td>
<td>CBOT</td>
<td>5,000 bushels</td>
<td>56</td>
</tr>
<tr>
<td>Chicago Soft Red Wheat (ZW)</td>
<td>CBOT</td>
<td>5,000 bushels</td>
<td>60</td>
</tr>
<tr>
<td>Kansas City Hard Red Wheat (KE)</td>
<td>CBOT</td>
<td>5,000 bushels</td>
<td>60</td>
</tr>
<tr>
<td>Minneapolis Hard Red Spring Wheat (MWE)</td>
<td>MGEX</td>
<td>5,000 bushels</td>
<td>60</td>
</tr>
<tr>
<td>Soybeans (ZS)</td>
<td>CBOT</td>
<td>5,000 bushels</td>
<td>60</td>
</tr>
<tr>
<td>Soybean Meal (ZM)</td>
<td>CBOT</td>
<td>100 short tons</td>
<td>N/A</td>
</tr>
<tr>
<td>Soybean Oil (ZL)</td>
<td>CBOT</td>
<td>60,000 pounds</td>
<td>N/A</td>
</tr>
<tr>
<td>Oats (ZO)</td>
<td>CBOT</td>
<td>5,000 bushels</td>
<td>32</td>
</tr>
</tbody>
</table>
## Session 2.1: Introduction to Futures

### MONTHS TRADED

<table>
<thead>
<tr>
<th>Contract (Symbol)</th>
<th>Months Traded</th>
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<tbody>
<tr>
<td>Corn (ZC)</td>
<td>H, K, N, U, Z</td>
</tr>
<tr>
<td>Kansas City Hard Red Wheat (KE)</td>
<td>H, K, N, U, Z</td>
</tr>
<tr>
<td>Minneapolis Hard Red Spring Wheat (MWE)</td>
<td>H, K, N, U, Z</td>
</tr>
<tr>
<td>Soybeans (ZS)</td>
<td>F, H, K, N, U, X</td>
</tr>
<tr>
<td>Soybean Meal (ZM)</td>
<td>F, H, K, N, Q, U, V, Z</td>
</tr>
<tr>
<td>Soybean Oil (ZL)</td>
<td>F, H, K, N, Q, U, V, Z</td>
</tr>
<tr>
<td>Oats (ZO)</td>
<td>H, K, N, U, Z</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>Code</th>
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<tbody>
<tr>
<td>January</td>
<td>F</td>
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<tr>
<td>February</td>
<td>G</td>
</tr>
<tr>
<td>March</td>
<td>H</td>
</tr>
<tr>
<td>April</td>
<td>J</td>
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<tr>
<td>May</td>
<td>K</td>
</tr>
<tr>
<td>June</td>
<td>M</td>
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<td>July</td>
<td>N</td>
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<td>August</td>
<td>Q</td>
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<tr>
<td>September</td>
<td>U</td>
</tr>
<tr>
<td>October</td>
<td>V</td>
</tr>
<tr>
<td>November</td>
<td>X</td>
</tr>
<tr>
<td>December</td>
<td>Z</td>
</tr>
</tbody>
</table>
Liquidity

• For a futures contract to be made available, there must be enough interest in trading futures with a particular delivery (maturity) month.

• Poor liquidity creates a “Thin Market” situation
  - This is when there are few transactions per unit of time and price fluctuations are high relative to the volume of trade.

• Based on Volume and Open Interest
  - Volume: The number of contracts traded over a given time interval.
  - Open Interest: The number of futures contracts which remain obligated to the clearinghouse. Can be counted as either the number of longs or number of shorts.
Lack of Liquidity (Thin Market) Example: December Oats – Prices as of 6/20/2017

$2.2597 at close on 1/31/2017

Volume 6
Open Interest - 150
Lack of Liquidity (Thin Market) Example: December Oats – Prices as of 6/20/2017

$2.4180 at the open on 2/1/2017

Volume 11

Open Interest - 156

Seller’s Loss of $791.50 per contract - overnight
WHO TRADES?

- Hedging: utilizing the futures or options markets to neutralize the effects of a commodity price risk
  - Individuals (Usually producers) who hedge are referred to as “Hedgers”
- Speculating: participating in the futures market with the sole intention of making a profit
  - Individuals who participate in speculating are referred to as “Speculators”
- There are many more speculators than hedgers
  - Speculators help with liquidity by taking to other side of the transaction – futures trading would not be possible without them
Session 2.1: Introduction to Futures

**HOW TRADE IS CONDUCTED**

Trader places an order by phone or electronically

Broker transmits that order to an Exchange

Order is timestamped and sent to the “Floor” to be filled

Filled electronically. If the trade is not filled – action stops here

Price is recorded, time stamped, and reported to the exchange, broker, and trader
• Traders are given the following information following a filled order
  • Date
  • Description
  • Price
  • Profit or Loss (If offsetting and existing position)
  • Commission charges
  • Account balance prior to the transaction
  • Account balance after the transaction
### Order Confirmation Dialog

- **Order Description**: SELL -1 /ZNW7 @470.50 LMT [TO OPEN]
- **Cost of Trade including commissions + fees**: $0.00 + $1.75 + $1.96 - $3.71
- **Buying Power Effect**: ($1,320.00)
- **Resulting Buying Power for Stock**: $188,730.28
- **Resulting Buying Power for Options**: $94,365.14

### Filled Orders

<table>
<thead>
<tr>
<th>Exec Time</th>
<th>Spread</th>
<th>Side</th>
<th>Qty Pos Effect</th>
<th>Symbol</th>
<th>Exp</th>
<th>Strike Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/20/17 11:07:52</td>
<td>FUTURE</td>
<td>SELL</td>
<td>-1 OPENING</td>
<td>/ZNW7</td>
<td>JUL 17</td>
<td>FUTURE</td>
<td>470.50</td>
</tr>
</tbody>
</table>
### TRADING TRANSACTIONS

**Session 2.1: Introduction to Futures**

**Confirmation**

The following trades have been made as of the date indicated for your account:

<table>
<thead>
<tr>
<th>TRADE</th>
<th>CARD</th>
<th>AT</th>
<th>BUY</th>
<th>SELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>1</td>
<td>4/05/7</td>
<td>MAY 17 KCBT WHEAT</td>
<td>LTD- 5/12/17</td>
</tr>
<tr>
<td>U1</td>
<td>1*</td>
<td></td>
<td>AVG SHORT: 4.24250</td>
<td></td>
</tr>
</tbody>
</table>

**Contract Description**

- **ST**: 4.24 1/4 US
- **Debit/Credit**: COMMISSION US: 20.00DR,
  CLEARING FEE US: 1.95DR,
  NFA FEE US: 0.01DR,
  TRANSACTION FEE US: 3.00DR
- **Gross Profit or Loss**: 0.00

**Open Positions**

<table>
<thead>
<tr>
<th>TRADE</th>
<th>CARD</th>
<th>AT</th>
<th>LONG</th>
<th>SHORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>U1</td>
<td>1</td>
<td>4/05/7</td>
<td>MAY 17 KCBT WHEAT</td>
<td>LTD- 5/12/17</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>AVG SHORT: 4.24250</td>
<td></td>
</tr>
</tbody>
</table>

**Contract Description - Open**

- **ST**: 4.24 1/4 US
- **Close**: 4.20
- **Debit/Credit**: 212.50CR

**Electronic Trade**

---

### Financial Table

<table>
<thead>
<tr>
<th>Description</th>
<th>USD Segregated (U1)</th>
<th>Conv Seg Total</th>
<th>Total Converted</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning Balance</strong></td>
<td>15,000.00CR</td>
<td>15,000.00CR</td>
<td>15,000.00CR</td>
</tr>
<tr>
<td><strong>Commission</strong></td>
<td>20.00DR</td>
<td>20.00DR</td>
<td>20.00DR</td>
</tr>
<tr>
<td><strong>Clearing Fee</strong></td>
<td>1.95DR</td>
<td>1.95DR</td>
<td>1.95DR</td>
</tr>
<tr>
<td><strong>NFA Fee</strong></td>
<td>0.01DR</td>
<td>0.01DR</td>
<td>0.01DR</td>
</tr>
<tr>
<td><strong>Transaction Fee</strong></td>
<td>3.00DR</td>
<td>3.00DR</td>
<td>3.00DR</td>
</tr>
<tr>
<td><strong>Total Commission and Fees</strong></td>
<td>24.96DR</td>
<td>24.96DR</td>
<td>24.96DR</td>
</tr>
<tr>
<td><strong>Ending Balance</strong></td>
<td>14,975.04CR</td>
<td>14,975.04CR</td>
<td>14,975.04CR</td>
</tr>
<tr>
<td><strong>Open Trade Equity</strong></td>
<td>212.50CR</td>
<td>212.50CR</td>
<td>212.50CR</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td>15,187.54CR</td>
<td>15,187.54CR</td>
<td>15,187.54CR</td>
</tr>
<tr>
<td><strong>Current Net Liquidating Value</strong></td>
<td>15,187.54CR</td>
<td>15,187.54CR</td>
<td>15,187.54CR</td>
</tr>
<tr>
<td><strong>Prior Net Liquidating Value</strong></td>
<td>15,000.00CR</td>
<td>15,000.00CR</td>
<td>15,000.00CR</td>
</tr>
<tr>
<td><strong>Market Variance</strong></td>
<td>187.54CR</td>
<td>187.54CR</td>
<td>187.54CR</td>
</tr>
<tr>
<td><strong>Initial Margin Requirement</strong></td>
<td>1,050.00CR</td>
<td>1,050.00CR</td>
<td>1,050.00CR</td>
</tr>
<tr>
<td><strong>Maintenance Margin Requirement</strong></td>
<td>1,050.00CR</td>
<td>1,050.00CR</td>
<td>1,050.00CR</td>
</tr>
<tr>
<td><strong>Excess Equity</strong></td>
<td>14,137.54CR</td>
<td>14,137.54CR</td>
<td>14,137.54CR</td>
</tr>
</tbody>
</table>
To trade in the futures market, participants need to have a minimum percentage of the value of each contract deposited into their trading account.

This initial deposit is better defined as a “Margin Deposit”:

- A “good-faith” deposit an investor must deposit into their account when buying or selling.
- If futures prices move adversely, the investor must deposit more money into the account to meet increasing margin requirements.
MARGIN TERMINOLOGY

• Brokerage firms will often require a slightly higher amount of money that must be put down as an initial deposit. This is called your “Initial Margin”
  • This is usually around 5-10% of the future contract value

• Commodity exchanges will set minimum margin requirements for each of their contracts. This is called the “Maintenance Margin”

• If the market moves unfavorably against the trader and their account value drops below the maintenance margin, they will be required to deposit more funds into their account. This is a “Margin Call”
## MARGIN ACCOUNTING EXAMPLE

**Session 2.1: Introduction to Futures**

<table>
<thead>
<tr>
<th>Date</th>
<th>Price $/bu</th>
<th>Notes</th>
<th>Margin Action</th>
<th>Daily Change</th>
<th>Account Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/19/2015</td>
<td>$4.72</td>
<td>Sold 1 December KE. Initial Margin is $1,500</td>
<td>$1,500.00</td>
<td></td>
<td>$1,500.00</td>
</tr>
<tr>
<td>10/20/2015</td>
<td>$4.77</td>
<td>Maintenance margin is $1,250</td>
<td>$212.50</td>
<td></td>
<td>$1,287.50</td>
</tr>
<tr>
<td>10/21/2015</td>
<td>$4.81</td>
<td>Margin Call</td>
<td>$412.50</td>
<td></td>
<td>$1,500.00</td>
</tr>
<tr>
<td>10/22/2015</td>
<td>$4.76</td>
<td></td>
<td></td>
<td>$250.00</td>
<td>$1,750.00</td>
</tr>
<tr>
<td>10/23/2015</td>
<td>$4.76</td>
<td></td>
<td></td>
<td></td>
<td>$1,750.00</td>
</tr>
<tr>
<td>10/26/2015</td>
<td>$4.92</td>
<td>Margin Call</td>
<td>$587.50</td>
<td></td>
<td>$1,500.00</td>
</tr>
<tr>
<td>10/27/2015</td>
<td>$4.88</td>
<td></td>
<td>$212.50</td>
<td></td>
<td>$1,712.50</td>
</tr>
<tr>
<td>10/28/2015</td>
<td>$4.86</td>
<td></td>
<td>$125.00</td>
<td></td>
<td>$1,837.50</td>
</tr>
<tr>
<td>10/29/2015</td>
<td>$4.88</td>
<td></td>
<td>$(137.50)</td>
<td></td>
<td>$1,700.00</td>
</tr>
<tr>
<td>10/30/2015</td>
<td>$4.94</td>
<td></td>
<td>$(275.00)</td>
<td></td>
<td>$1,425.00</td>
</tr>
<tr>
<td>11/2/2015</td>
<td>$4.83</td>
<td></td>
<td>$550.00</td>
<td></td>
<td>$1,975.00</td>
</tr>
<tr>
<td>11/3/2015</td>
<td>$4.88</td>
<td></td>
<td>$(237.50)</td>
<td></td>
<td>$1,737.50</td>
</tr>
<tr>
<td>11/4/2015</td>
<td>$4.93</td>
<td></td>
<td>$(262.50)</td>
<td></td>
<td>$1,475.00</td>
</tr>
<tr>
<td>11/5/2015</td>
<td>$4.86</td>
<td></td>
<td>$337.50</td>
<td></td>
<td>$1,812.50</td>
</tr>
<tr>
<td>11/6/2015</td>
<td>$4.90</td>
<td></td>
<td>$(212.50)</td>
<td></td>
<td>$1,600.00</td>
</tr>
<tr>
<td>11/9/2015</td>
<td>$4.74</td>
<td></td>
<td>$812.50</td>
<td></td>
<td>$2,412.50</td>
</tr>
<tr>
<td>11/10/2015</td>
<td>$4.61</td>
<td></td>
<td>$662.50</td>
<td></td>
<td>$3,075.00</td>
</tr>
<tr>
<td>11/11/2015</td>
<td>$4.64</td>
<td></td>
<td>$(175.00)</td>
<td></td>
<td>$2,900.00</td>
</tr>
<tr>
<td>11/12/2015</td>
<td>$4.64</td>
<td></td>
<td>$25.00</td>
<td></td>
<td>$2,925.00</td>
</tr>
<tr>
<td>11/13/2015</td>
<td>$4.66</td>
<td>Bot 1 December KE (Offset Contract)</td>
<td></td>
<td></td>
<td>$2,837.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receive</td>
<td>$2,837.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Net Profit = (2,837.50-1500-412.50-587.50) $ 337.50

Net Profit ALSO = ((4.72-4.66)*5000) $ 337.50
FUTURES ROLE IN PRICE DISCOVERY

- Futures markets bring together thousands of people with different information about what commodities are actually worth.
- People negotiate for what they believe are “fair” or acceptable prices.
- The result is an ever changing price that is the “consensus” of people trading based on all available information and expectations at any particular moment.
PRICE DISCOVERY EXAMPLE

- Prices changed because of actual and expected supply and demand changes
  - Changing crop conditions
  - Economic numbers
  - Future expectations
  - Other related issues
FUTURES AND PRICE DISCOVERY

- Futures prices are easily and quickly accessible worldwide
- They represent an “efficient” forecast for future prices
- Futures are used extensively to discover prices in cash markets
Session 2.1: Introduction to Futures

SOURCES OF FUTURES QUOTES

Delayed quotes are available from the following Exchanges:

- CME Group [http://www.cmegroup.com](http://www.cmegroup.com)
- MGEX [http://www.mgex.com](http://www.mgex.com)

- Most trading platforms will have real-time or delayed futures quotes
### Session 2.1: Introduction to Futures

**EXAMPLE FUTURES QUOTE**

<table>
<thead>
<tr>
<th>Month</th>
<th>High</th>
<th>Low</th>
<th>Last</th>
<th>Chg</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jul 17</td>
<td>4.5575</td>
<td>4.4600</td>
<td>4.5225</td>
<td>+0.0750</td>
<td>12:10:34</td>
</tr>
<tr>
<td>Sep 17</td>
<td>4.7000</td>
<td>4.6050</td>
<td>4.6625</td>
<td>+0.0700</td>
<td>12:10:35</td>
</tr>
<tr>
<td>Dec 17</td>
<td>4.9050</td>
<td>4.8150</td>
<td>4.8750</td>
<td>+0.0750</td>
<td>12:10:35</td>
</tr>
<tr>
<td>Mar 18</td>
<td>5.0800</td>
<td>4.9975</td>
<td>5.0450</td>
<td>+0.0675</td>
<td>12:10:35</td>
</tr>
<tr>
<td>May 18</td>
<td>5.1975</td>
<td>5.1200</td>
<td>5.1650</td>
<td>+0.0750</td>
<td>12:10:35</td>
</tr>
<tr>
<td>Jul 18</td>
<td>5.2750</td>
<td>5.1825</td>
<td>5.2650</td>
<td>+0.0875</td>
<td>12:10:25</td>
</tr>
</tbody>
</table>

Quotes from grains.com – Taken on 6/8/2017
Session 2.1: Introduction to Futures

SUMMARY

• Futures contracts exist to facilitate trade and transfer risk
• Margin allows us to leverage our finances and take advantage of price moves
• Futures contracts provide the most accurate representation of current prices
  • Basis is necessary to make those prices applicable to individual locations
SESSION 2.2
INTRODUCTION TO BASIS
WHAT IS BASIS?

• Basis is the difference between your local cash price and a futures contract price

  Basis = Cash price – Futures price

• Basis is USUALLY calculated using the nearby futures contract (closest following month)
WHAT IS BASIS?

• A futures contract price represents the consensus opinion of the value of the commodity at the time the futures contract expires
  • It is specific to a certain grade
  • It is specific to a location (delivery point)

• A local cash price represents the value of a specific quality of a commodity, at a specific location, and at a specific point in time

• Cash and futures prices differ because of
  • Location (transportation costs), Quality and Time of Delivery
Session 2.2: Introduction to Basis

**EXAMPLE: WHITGRO CASH BIDS (6/7/17)**

<table>
<thead>
<tr>
<th>WHEAT, SWW</th>
<th>Whitgro Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis</td>
<td>Cash Price</td>
</tr>
<tr>
<td>June</td>
<td>0.53</td>
</tr>
<tr>
<td>July</td>
<td>0.53</td>
</tr>
<tr>
<td>August 2017</td>
<td>0.38</td>
</tr>
<tr>
<td>September</td>
<td>0.41</td>
</tr>
<tr>
<td>October</td>
<td>0.20</td>
</tr>
<tr>
<td>November</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Basis = Cash price – Futures price
WHY IS BASIS IMPORTANT?

• Basis can be used as a barometer of market strength or weakness
• Basis can be used to determine future cash prices
• Basis can be used to evaluate forward contract prices
• Basis is the key to determining expected net prices from hedging
Session 2.2: Introduction to Basis

**BASIS TERMINOLOGY**

- **Strong Basis:** Basis is more positive or less negative than is typical
  - As basis becomes more positive or less negative, we say that basis is “Strengthening”
- **Weak Basis:** Basis is less positive or more negative than is typical
  - As basis becomes less positive or more negative, we say that basis is “Weakening”
- “Over” – Cash price is greater than the futures price
- “Under” – Cash price is less than the futures price
Session 2.2: Introduction to Basis

**BASIS AS A MARKET BAROMETER**

Market is Strengthening

Market is Weakening
Session 2.2: Introduction to Basis

**BASIS AS A MARKET BAROMETER**

- **Market is Strengthening**
  - Cash
  - Futures
  - Basis

- **Market is Weakening**
  - Cash
  - Futures
  - Basis
Strengthening Basis:

- Your local elevator initiates export sales, local demand increases
- The elevator raises its local cash bids to encourage farmers to sell grain
- Local basis strengthens
Session 2.2: Introduction to Basis

**BASIS AS A MARKET BAROMETER**

**Weakening Basis:**

- Your local elevator receives more grain than it can handle on-site
- The elevator lowers its local cash bids to encourage farmers to store grain
- Local basis weakens
Transportation costs are a major component of price differences between geographic regions.

“Weak” basis is driven by market events that force producers to sell their products in the near term.
- Surplus grain stocks, lack of on-farm grain storage, poor cash-flow of producers, etc.

“Strong” basis is driven by forces that create a seller’s market.
- Shortage of grain, crop failures in competing markets, etc.
Session 2.2: Introduction to Basis

FORECASTING CASH PRICES

• If Basis = Cash price – Futures prices
• Then...

Cash price = Basis + Futures price

• Futures contract prices are considered the market’s consensus for what prices will be in the future, given current information
• Cash and futures prices tend to respond to similar market information
• Basis tends to be more stable than either cash or futures prices
Futures prices can be observed for several months into the future.

If we know historical (expected) basis for a particular month...

We can forecast prices many months into the future.

With this information, our formula becomes...

\[
\text{Expected Cash price} = \text{Expected Basis} + \text{Futures price}
\]
Currently, there are no known sources of historical Idaho grain basis data

- USDA AMS Daily Grain Report

- USDA AMS Stata Grain Reports
  - https://www.ams.usda.gov/market-news/state-grain-reports
  - http://www.agmanager.info/grain-marketing
  - https://grains.com/us
Session 2.2: Introduction to Basis

RECORDING HISTORICAL BASIS DATA

- Record your local cash price
- Record current futures market price
- Calculate basis

Hard Red Wheat Example, using Portland as local location

<table>
<thead>
<tr>
<th>Date</th>
<th>Portland HRW Cash Price</th>
<th>Kansas City HRW Futures</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/01/09</td>
<td>7.49</td>
<td>7.26</td>
<td>0.23</td>
</tr>
<tr>
<td>06/08/09</td>
<td>6.96</td>
<td>6.53</td>
<td>0.43</td>
</tr>
<tr>
<td>06/15/09</td>
<td>6.58</td>
<td>6.32</td>
<td>0.26</td>
</tr>
<tr>
<td>06/22/09</td>
<td>6.50</td>
<td>6.14</td>
<td>0.36</td>
</tr>
<tr>
<td>06/29/09</td>
<td>6.30</td>
<td>5.92</td>
<td>0.38</td>
</tr>
</tbody>
</table>
Portland Cash HRW-KC HRW Futures Weekly Basis '09-'14

- $1.00
- $1.20
- $1.40
- $1.60
- $1.80
- $2.00

Month

- Jun
- Jul
- Aug
- Sep
- Oct
- Nov
- Dec
- Jan
- Feb
- Mar
- Apr
- May

Basis

- $0.20
- $0.40
- $0.60
- $0.80

5 year Average

2013

2012
Portland - KC HRW Basis, Seasonal Index '09 - '14
Session 2.2: Introduction to Basis

GRAIN MARKETING EXAMPLES

• It is mid June
• September Kansas City Hard Red Wheat is trading at $4.90 per bushel
• Average historical Portland basis is +$0.60 for the third week of August

• Therefore, Forecasted Harvest Price is $5.50 per bushel

Expected Cash price = Expected Basis + Futures price
$5.50 = $0.60 + $4.90
EVALUATING FORWARD CONTRACTS

- A Portland grain elevator offers a farmer $5.55 for Hard Red Wheat to be delivered November 1\textsuperscript{st}
- Dec KC HRW Futures are trading at $5.00
- Historical (expected) basis for Nov 1 is $0.75
- Should the farmer accept the contract?
  - The elevator is essential offering a contract at $0.55 basis
  - This is weaker than the $0.75 that is expected – however, the elevator will bear the basis risk and the farmer will have no price or basis risk if they take the contract
Session 2.2: Introduction to Basis

SUMMARY

- Basis is the key to applying futures prices to your local location
- Local basis data is not always easy to find
  - Sometimes, the best way to get this data is to record it yourself
- Understanding basis is also key to deciding when to take a forward contract and when to hedge
  - Hedging removes price risk, but we still have basis risk
SESSION 2.3
INTRODUCTION TO HEDGING
WHAT IS HEDGING?

- Hedging is simultaneously participating in the cash market and futures or options markets to neutralize the effects of commodity price risk.
  - Individuals who hedge are referred to as “Hedgers”

- Purpose is to take advantage of “favorable” pricing opportunities before liquidating or acquiring the physical commodity
WHAT IS HEDGING?

• Members of the value chain can hedge both the purchase and sale of a commodity

• A person who owns the physically commodity and sells futures to protect downside risk is called a “Short Hedger”

• A person who is planning to purchase the physical commodity and buys futures to protect upside price risk is called a “Long Hedger”
REQUIREMENTS FOR HEDGING

• Prices in both the cash and futures markets will respond to underlying forces of supply and demand in such a way that they will tend to move together and in the same direction.

• Cash and futures prices will tend to converge as maturity of the futures contract approaches.

• In most cash markets, cash and futures will converge to predictable basis levels.
CONVERGENCE AND DELIVERY

- Sellers can choose to deliver on a futures contract
- Buyers can choose to demand that the commodity is delivered
- Obligation of delivery at contract expiration forces the cash market and futures market to converge
- Basis can be thought of as the cost of delivery
Omaha Corn Example: Typical Basis is -$0.30

Example from [www.cattlemarketanalysis.org](http://www.cattlemarketanalysis.org)
Session 2.3: Introduction to Hedging

CONVERGENCE AND DELIVERY

- A producer has sold 10 Dec Corn Futures contracts for $3.50 per bushel
  - Basis in his area is -$0.30 per bushel
  - If the current cash price is only $3.00 per bushel, the producer might choose to deliver on the contract for a +$0.20 gain
- A speculator in Chicago bought 10 Dec Corn Futures contracts
  - He receives a notice that he will have to accept deliver of 10 contract of corn, 50,000 bushels
  - He will try and get out of his position in the market by selling 10 Dec Corn Futures
    - That selling pressure will lower the Dec Corn Futures
- The local elevator in the producers area needs more corn
  - To get the producer to sell to him rather than deliver on the futures, he raises his price

Example from www.cattlemarketanalysis.org
Dec Corn declines to $3.40 and the local cash come up to $3.10
  - Basis is as expected
  - The producer sells to local elevator and buys 10 Dec Corn Futures to offset his position in the futures market

This is an over simplification, but many traders in the markets make this happen

Example from [www.cattlemarketanalysis.org](http://www.cattlemarketanalysis.org)
Several futures contracts are “Cash Settled” or “Financially Settled”

- This means contracts held to maturity are settled in cash rather than commodity delivery

- An index of cash prices is used to determine the final settlement price
  - For example, Lean Hogs futures contracts are cash settled based on the CME Lean Hog Index

- At maturity, “Winners” are paid the difference between what they bought or sold futures contacts for and what the cash index price is
  - “Losers” provide this money
CLOSING (OFFSETTING) A POSITION

• To exit a position before delivery, the trader must make the opposite transaction
  • If you bought 10 contracts, you must sell 10 contracts to offset the position
  • If you sold 10 contracts, you must buy 10 contracts to offset the position
Session 2.3: Introduction to Hedging

**SHORT FUTURES HEDGE TEMPLATE**

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash</th>
<th>Futures</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Date</td>
<td>Expected Sale Price</td>
<td>Avg. Futures Sale Price</td>
<td>Expected Basis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End Date</td>
<td>Actual Cash Sale Price</td>
<td>Avg. Futures Buy Price</td>
<td>Actual Basis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Profit/Loss</td>
<td></td>
</tr>
</tbody>
</table>

Net sale price = Actual Cash Sale Price + Profit/Loss in futures
**Session 2.3: Introduction to Hedging**

**SHORT FUTURES HEDGE**

“Perfect Hedge” – Basis does not change

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash</th>
<th>Futures</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 15</td>
<td>$5.30</td>
<td>Sell Sept KE $5.60</td>
<td>-$0.30</td>
</tr>
<tr>
<td>August 20</td>
<td>$5.10</td>
<td>Buy Sept KE $5.40</td>
<td>-$0.30</td>
</tr>
</tbody>
</table>

Net sale price = $5.10 + 0.20 = $5.30
### SHORT FUTURES HEDGE

**Basis strengthens**

<table>
<thead>
<tr>
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</tr>
</tbody>
</table>

Net sale price = $5.10 + 0.30 = $5.40
### Short Futures Hedge

**Basis weakens**

<table>
<thead>
<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td>+0.10</td>
<td></td>
</tr>
</tbody>
</table>

Net sale price = $5.10 + 0.10 = $5.20
### LONG FUTURES HEDGE TEMPLATE

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash</th>
<th>Futures</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Date</td>
<td>Expected Purchase Price</td>
<td>Avg. Futures Buy Price</td>
<td>Expected Basis</td>
</tr>
<tr>
<td>End Date</td>
<td>Actual Cash Purchase Price</td>
<td>Avg. Futures Sale Price</td>
<td>Actual Basis</td>
</tr>
</tbody>
</table>

Net purchase price = Actual Cash Purchase Price - Profit/Loss in futures
### Session 2.3: Introduction to Hedging

**LONG FUTURES HEDGE**

“Perfect Hedge” – Basis stays the same

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash</th>
<th>Futures</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 20</td>
<td>$4.80</td>
<td>Buy Dec ZW $4.20</td>
<td>+$0.60</td>
</tr>
<tr>
<td>October 15</td>
<td>$5.40</td>
<td>Sell Dec ZW $4.80</td>
<td>+$0.60</td>
</tr>
</tbody>
</table>

Net purchase price = $5.40 - $0.60 = $4.80
# Long Futures Hedge

**Session 2.3: Introduction to Hedging**

## Basis Weakens

<table>
<thead>
<tr>
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<th>Cash</th>
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</tr>
<tr>
<td>October 15</td>
<td>$5.40</td>
<td>Sell Dec ZW $5.00</td>
<td>+$0.40</td>
</tr>
</tbody>
</table>

Net purchase price = $5.40 - $0.80 = $4.60
### LONG FUTURES HEDGE

#### Session 2.3: Introduction to Hedging

**Basis strengthens**

<table>
<thead>
<tr>
<th>Date</th>
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<td>+$0.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+$0.40</td>
</tr>
</tbody>
</table>

Net purchase price = $5.40 - $0.40 = $5.00
Cross-hedging is the process of hedging a commodity using a closely related futures contract intended for a different commodity.

- Common examples are:
  - Hedging soft white wheat with soft red wheat futures contracts
  - Hedging barley with corn futures

This CAN be a good practice, but should be done with caution.

- Before cross-hedging, the hedger should check that the commodity they intend to produce or own responds to similar market information and that the prices tend to move together.

Increases basis risk.
ADVANTAGES OF HEDGING

• Extends time period to make a pricing decision
• Eliminates risk of an adverse price change
• Allows hedger to reverse positions quickly, as it is generally a very liquid market
• Reduces price risk, as the basis is normally more predictable than the cash price
  • Short hedging is intended to limit downside risk
  • Long hedging is intended to limit upside risk
• Encourages you to place additional attention on your marketing efforts

From University of Idaho Extension
DISADVANTAGES OF HEDGING

• Decreases potential profit if there is an adverse change in basis

• Margin requirements increase interest costs and may cause cash flow problems
  • Loans or operating lines are often required to cover hedging costs

• Contracts are in increments of 1,000 or 5,000 bushels only
  • “Mini” contracts exist for some commodities that trade in 1,000 bushel increments

• Eliminates gains from price changes
  • We can take advantage of these if we hedge with options

• Requires understanding of futures markets and basis relationships

From University of Idaho Extension
SUMMARY

- Hedging is not an exact science – but it is an excellent marketing tool
- Short hedging is most successful when basis strengthens
- Long hedging is most successful when basis weakens
- Producers do NOT have to hedge 100% of their crop!
  - Leaving commodities unhedged is another form of speculation
SESSION 2
WRAP-UP AND CONCLUSIONS
CONCLUSIONS

• Futures markets have deep roots in agriculture and were created for farmers and commodity users to manage risk

• Cash prices will be different from the futures price, but react to the same information
  • Basis is much more stable than either cash OR futures prices

• Hedging can give producers more reliable returns, year-in and year-out
  • Hedging is NOT a magic formula for getting rich!
NEXT SESSION

- Session 3: Introduction to options and market scenarios
  - Session 3.1: Introduction to options
  - Session 3.2: Hedging with options
  - Session 3.3: Grain Marketing Scenarios
Session 2: Introduction to futures, basis and hedging

REFERENCES


http://cattlemarketanalysis.org/workshop.html

COMMODITY MARKETING:
USING FUTURES AND OPTIONS AS A
RISK MANAGEMENT TOOL

By: Brett Wilder, Hernan Tejeda & Norm Ruhoff
University of Idaho
WORKSHOP OUTLINE

• Session 1: Overview of risk and market analysis
• Session 2: Introduction to futures, basis and hedging
• Session 3: Introduction to options and market scenarios
TODAY’S AGENDA

• Session 3: Introduction to options and market scenarios
  • Session 3.1: Introduction to options
  • Session 3.2: Hedging with options
  • Session 3.3: Grain Marketing Scenarios
SESSION 3.1
INTRODUCTION TO OPTIONS
**WHAT IS AN OPTION?**

- Futures contracts are an obligation
  - The purchaser of a futures contract MUST deliver or offset
  - The purchaser is liable for margin calls
  - The trader is “locked into” a given price

- **Options** give the buyer the right, but not the obligation, to take a position in the futures market at a given price (called the strike price)
WHAT IS AN OPTION?

• Options are tied to an underlying futures contract
• Options are purchased and sold at “Strike Prices”
  • These are predetermined by the exchange
• To purchase an option, the buyer pays a “premium”
  • The purchaser can not lose more than the value of the option premium
  • There are no margin calls (For the buyer only)
• There are two types of options: Puts and Calls
Session 3.1: Introduction to Options

PUT & CALL OPTIONS

• **Put options** give the buyer of the option the *right* to **SELL** the futures contract at a specified strike price

• **Call options** give the buyer of the option to *right* to **BUY** the futures contract at a specified strike price

• A trader can buy puts, buy calls, sell puts, or sell calls
Put Options

**Buyers:**
- Can exercise the right to a short position at the strike price at any time before the option expires. For this right, they pay an option premium

**Sellers (writers):**
- Must provide the option buyer with a short futures position if the option is exercised
- Must meet margin calls if the underlying futures contract price moves below the option strike price
- Receive the option premium after the option expires
Session 3.1: Introduction to Options

PUT OPTION VS. SHORT FUTURES

Profit

Loss

Strike Price (Futures Price)

Put Option

Option Premium

(Futures Price)
OBLIGATIONS/RIGHTS OF OPTION TRADERS

Call Options

- **Buyers:**
  - Can exercise the right to a long position at the strike price at any time before the option expires. For this right, they pay an option premium.

- **Sellers (writers):**
  - Must provide the option buyer with a long futures position if the option is exercised.
  - Must meet margin calls if the underlying futures contract price moves below the option strike price.
  - Receive the option premium after the option expires.
CALL OPTION VS. LONG FUTURES

Session 3.1: Introduction to Options

Diagram showing the profit, loss, and option premium for a call option relative to the strike price and futures price.
### Option Terminology

#### Strike Price Relationship to the Underlying Futures Price

<table>
<thead>
<tr>
<th>Condition</th>
<th>Put Option</th>
<th>Call Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike &lt; Futures</td>
<td>Out-of-the money (OTM)</td>
<td>In-the money (ITM)</td>
</tr>
<tr>
<td>Strike = Futures</td>
<td>At-the money (ATM)</td>
<td>At-the money (ATM)</td>
</tr>
<tr>
<td>Strike &gt; Futures</td>
<td>In-the money (ITM)</td>
<td>Out-of-the money (OTM)</td>
</tr>
</tbody>
</table>
Session 3.1: Introduction to Options

EXAMPLE: STRIKE PRICE TERMINOLOGY

• Example 1:
  • December corn futures are trading at $4.05/bu
  • Would a put option with a $4.00/bu strike price be ITM, ATM, or OTM?

• Example 2:
  • December wheat futures are trading at $5.60/bu
  • Would a call option with a $5.50/bu strike price be ITM, ATM, or OTM?

• Why do we care?
Session 3.1: Introduction to Options

CALCULATING OPTION PREMIUMS

Premium = Intrinsic Value + Time Value

- **Intrinsic Value**
  - The strike price relative to the underlying futures price
  - An option only has intrinsic value if it is “In-the-money”

- **Time Value**
  - The amount of value derived from the days remaining until expiration
  - Decreases as the time to expiration approaches
I can buy a $4.00/bu December corn put for $0.20/bu

Today, December corn futures are trading at $3.95/bu

What is the Intrinsic Value? Time Value?

Since the put is $0.05 in-the-money, intrinsic value is $0.05

Time value = Premium – Intrinsic value, so time value is $0.15

Premium = Intrinsic Value + Time Value

$0.20 = $0.05 + $0.15
Session 3.1: Introduction to Options

READING AN OPTION CHAIN

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Days</th>
<th>Exp</th>
<th>Last X</th>
<th>Net Chng</th>
<th>Bid X</th>
<th>Ask X</th>
<th>Size</th>
<th>Volume</th>
<th>Open</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ZUW7</td>
<td>56</td>
<td>SEP</td>
<td>556.75</td>
<td>+4.75</td>
<td>558.25</td>
<td>558.25</td>
<td>16 x 11</td>
<td>186.685</td>
<td>563.75</td>
<td>574.50</td>
<td>536.75</td>
</tr>
</tbody>
</table>

- **Filter:** Off
- **Spread:** Single
- **Layout:** Volume, Open Interest
- **CALCS:**
  - Strike
  - Bid X
  - Ask X

**PUTS**
CLOSING AN OPTION POSITION

- Let it expire
- Offset (Exit) the position
- Exercise it
  - Places trader in a short (put) or long (call) position in the futures market
  - The position will have been sold (or bought) at the strike price
  - Options can ONLY be exercised when they are “In-the-money”
Bought 1 560 Dec Corn Put for $0.32250/bu
Max Loss = Premium x Bushels
Max Loss = $0.32250 \times 5000 = $1,612.50
Session 3.1: Introduction to Options

CLOSING: LET IT EXPIRE

- The green line shows intrinsic value – or value at expiration.
- Letting the option expire protects downside risk until expiration day.
**This is not always possible**

- The more time left until expiration, the more volume and open interest, the more likely you are to be able to exit the position
- If the trade is in-the-money, you prevent further gain. If the trade is out-of-the-money, you limit further losses
**Closing: Exercise the Option**

Session 3.1: Introduction to Options

• **Only possible when option is in-the-money**

• Your option becomes a futures position at the specified strike price. Opens you up to unlimited risk and should be done with great caution.
Session 3.1: Introduction to Options

**SUMMARY**

- Options provide much more flexibility than futures contracts
- But, it comes at a price!
  - Option premium for futures contracts can be VERY expensive if purchased with much time left to expiration
- Options are a great way to hedge commodities if used correctly
  - Discussed in next section
SESSION 3.2
HEDGING WITH OPTIONS
HEDGING WITH OPTIONS

- Hedging with futures locks in a price level
  - Regardless of which direction the cash price moves, the effective hedge price stays the same
- Hedging with options establishes a minimum (or maximum) expected price
  - For the cost of an options premium, the hedger gains the ability to take advantage of upward (or downward) moves in price
- Hedging with options provides “Staying Power”
  - After the option premium is paid, a producer can stay in the position with no concern about margin calls
A “Short Hedger” is person who owns the physical commodity and wants to protect downside risk.

If the hedger suspects prices might move higher, but wants to protect the value of their commodity should prices move lower, they will choose to buy a put option rather than sell futures.

- The hedger will choose a strike price and pay the option premium.
- Determines the “Minimum Expected Price”

Minimum Expected Price = Strike Price – Option Premium + Basis
On April 1st, a farmer plants Hard Red Wheat. He plans to market his wheat through Portland in September. His breakeven price is $4.80/bu. He wants to eliminate his downside price risk, but take advantage of upside potential. Today’s KC HRW futures price is $4.50 per bushel. The cost for an ATM put option is $0.20. Expected Basis in September is +$0.60.
Session 3.2: Hedging with Options

**SHORT HEDGING EXAMPLE**

Futures Price = $4.50/bu  Option Premium = $0.20/bu  Expected Basis = +$0.60

Hedging with Futures

Expected Sale Price  = Futures Price + Expected Basis

= $4.50 + $0.60 = $5.10

Hedging with Options

Minimum Expected Price  = Strike Price – Option Premium + Basis

= $4.50 - $0.20 + $0.60 = $4.90
Session 3.2: Hedging with Options

SHORT HEDGING EXAMPLE

Comparison of Pricing Strategies – Short Hedge

Net Price vs. Futures Price

- Cash
- $4.50/bu Futures Hedge
- $4.50/bu Put with 20 cent premium
Session 3.2: Hedging with Options

SHORT HEDGE – BASIS ADJUSTED

Comparison of Pricing Strategies - Basis Adjusted

Futures price

Expected Sale Price

Breakeven Price

- Cash + Basis
- Futures Hedge + Basis
- Option Hedge + Basis
A “Long Hedger” is a person who is planning to purchase the physical commodity and wants to protect upside price risk.

If the hedger suspects prices might move lower, but wants to fix a maximum price for purchasing a commodity, they will choose to buy a call option rather than buy futures.

- The hedger will choose a strike price and pay the option premium.
- Determines the “Maximum Expected Price”:

\[
\text{Maximum Expected Price} = \text{Strike Price} + \text{Option Premium} + \text{Basis}
\]
On May 1st, a Portland wheat mill plans to purchase Hard Red Wheat in August. Their breakeven purchase price is $5.50/bu. Today’s KC HRW futures price is $4.75. The cost for an ATM put option is $0.25. Expected Basis in August is +$0.50.
Futures Price = $4.75/bu  Option Premium = $0.25/bu  Expected Basis = +$0.50

Hedging with Futures

Expected Purchase Price = Futures Price + Expected Basis
= $4.75 + $0.50 = $5.25

Hedging with Options

Maximum Expected Price = Strike Price + Option Premium + Basis
= $4.75 + $0.25 + $0.50 = $5.50
Comparison of Pricing Strategies - Long Hedge

- Cash
- $4.75/bu Futures Hedge
- $4.75/bu Call with 25 cent premium
LONG HEDGE – BASIS ADJUSTED

Comparison of Pricing Strategies – Basis Adjusted

Futures price

Expected Purchase Price

Breakeven Purchase Price

Cash + Basis
Futures Hedge + Basis
Option Hedge + Basis
• Options open the door to more advanced strategies
  • “Paper Farming”
  • Establishing Price Windows
  • Selling covered calls
“PAPER FARMING”

- **Paper Farming** is a commonly used term for when a producer sells their grain, then establishes re-ownership with call options
  - The idea is to take advantage of future price movements
  - This method establishes a minimum price

- Formula: \[ \text{Minimum Price} = \text{Cash sale price} - \text{premium} \]
Session 3.2: Hedging with Options

PAPER FARMING EXAMPLE

• On September 1st, a farmer sells Soft White Wheat for $5.40
• He expects market prices to continue moving upward
• His breakeven price is $4.80/bu
  • He wants to eliminate his downside price risk, but take advantage of upside potential
  • Today’s December Chicago SRW futures price is $5.05 per bushel
  • The cost for an ATM call option is $0.35
  • IF the producer chooses to use the “Paper Farming Strategy:

Minimum Price = Cash sale price - premium

$5.05 = $5.40 - $0.35
ESTABLISHING PRICE WINDOWS

• Want to take advantage of an upward price move, but think prices may stay within a range? Try using options to establish a price window.

• How?
  • Buy put options to establish a minimum price
  • Sell OTM call options to establish a maximum price

Expected Minimum Price = Put Strike Price + Expected Basis – Net Premium
Expected Maximum Price = Call Strike Price + Expected Basis – Net Premium
On April 1st, a farmer plants Hard Red Wheat
He plans to market his wheat through Portland in September
His breakeven price is $4.80/bu
  • He wants to eliminate his downside price risk, but take advantage of upside potential
  • Today’s KC HRW futures price is $4.50 per bushel
  • The producer does not believe prices will rise above a $5.50 resistance level
  • The ask price for an ATM put option is $0.35
  • The bid price for a $5.50 call option is $0.10
  • Expected Basis in September is +$0.60
Session 3.2: Hedging with Options

PRICE WINDOW EXAMPLE

Futures Price = $4.50/bu  Net Premium = $0.25/bu  Expected Basis = +$0.60

Establishing a Minimum Price

Expected Minimum Price = Put Strike Price + Expected Basis – Net Premium
= $4.50 + $0.60 - $0.25 = $4.85

Establishing a Maximum Price

Expected Maximum Price = Call Strike Price + Expected Basis – Net Premium
= $5.50 + $0.60 - $0.25 = $5.85
ESTABLISHING PRICE WINDOWS

- Price windows can ALSO be used in Post-Harvest considerations
- How?
  - After selling you physical grain…
  - Buy ATM call options to establish a minimum price (Paper Farming)
  - Sell OTM call options to establish a maximum price

Minimum Price = Cash sale price – Net Premium

Maximum Price = Cash sale price – Net Premium + Strike Price Spread
Session 3.2: Hedging with Options

PRICE WINDOW EXAMPLE

- On September 1st, a farmer sells Soft White Wheat for $5.10
- He expects market prices to continue moving upward
- His breakeven price is $4.80/bu
  - He wants to eliminate his downside price risk, but take advantage of upside potential
  - Today’s December Chicago SRW futures price is $4.90 per bushel
  - The farmer does not expect prices to break resistance at $5.50 before December
  - The ask price for an ATM call option is $0.35
  - The bid price of a December $5.50 call option is $0.10
Price Window Example

Session 3.2: Hedging with Options

Futures Price = $4.90/bu  Net Premium = $0.25/bu  Strike Price Spread = $0.60

Establishing a Minimum Price

Minimum Price = Cash sale price – Net Premium
= $5.10 - $0.25 = $4.85

Establishing a Maximum Price

Maximum Price = Cash sale price – Net Premium + Strike Price Spread
= $5.10 - $0.25 + $0.60 = $5.45
SELLING COVERED CALLS

- If you have unpriced grain in storage, you can sell out-of-the-money call options to earn a premium while it sits
  - Pro: If the price doesn’t increase, you still turn a profit!
  - Con: This method doesn’t help much with downside risk
    You still own the grain, and must pay storage costs
- Covered calls establish a maximum price

Expected Maximum Price = Call Strike Price + Expected Basis + Premium
On August 1\textsuperscript{st}, a farmer decides to store hard red wheat after harvest.

His breakeven price is $5.00/bu.

- Today’s December KC HRW futures price is $4.20 per bushel.
- The farmer does not expect futures prices to break resistance at $5.20 before December.
- The bid price of a December $5.20 call option is $0.25.
- Expected basis in December is +0.60.

\textbf{Expected Maximum Price} = \text{Call Strike Price} + \text{Expected Basis} + \text{Premium}

\[ \$6.05 = \$5.20 + \$0.60 + \$0.25 \]
Session 3.2: Hedging with Options

SUMMARY

- Options provide farmers with more marketing flexibility
- Whenever a strategy includes SELLING an option
  - You can be left open to margin calls if the trade is in-the-money
  - You must pay close attention to the markets while the trade is open!
- Next Steps
  - How can we put these tools together?
  - When should we use these strategies?
SESSION 3.3
GRAIN MARKETING SCENARIOS
Session 3.3: Grain marketing scenarios

REVIEW OF GRAIN MARKETING TOOLS

- You have several options for pre-harvest grain marketing
  - Speculation (Leaving the commodity unhedged)
  - Forward contracts
  - Hedge to Arrive contracts
  - Hedging
    - Futures
    - Options
- The following scenarios will be from the standpoint of a grain producer
PRE-HARVEST SCENARIO: SWW

- On April 1, a farmer plants soft white spring wheat
- **Today’s Chicago SRW future’s price is $4.75**
  - He expects prices will not rise above $5.50 by harvest
- **Expected Basis to Portland is +0.75**
- ATM September Put option premium is $0.30
- $5.50 September Call option premium is $0.10
- He has an available forward contract at $5.50 cash
- He has an available Hedge to Arrive (HTA) contract at +$0.75 over
### Session 3.3: Grain marketing scenarios

#### SCENARIO RESULTS: A

Futures price increases to **$5.75/bu**, Basis stays at **+$0.75**

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Ending Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Cash)</td>
<td>Cash sale price = Futures price + Actual Basis</td>
<td><strong>$6.50</strong></td>
</tr>
<tr>
<td>Forward Contract</td>
<td>Forward contract price = Original negotiated cash sale price</td>
<td><strong>$5.50</strong></td>
</tr>
<tr>
<td>Hedge to Arrive Contract</td>
<td>HTA contract price = Original Futures price +/- Actual Basis</td>
<td><strong>$5.50</strong></td>
</tr>
<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash Price</td>
<td><strong>$5.50</strong></td>
</tr>
<tr>
<td>50/50 Futures Hedge/Cash</td>
<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
<td><strong>$6.00</strong></td>
</tr>
<tr>
<td>Hedge with Put Options</td>
<td>IF Futures &gt; than original strike price, = Cash sale price – put premium</td>
<td><strong>$6.20</strong></td>
</tr>
<tr>
<td>Established Price Window</td>
<td>Maximum price = Call strike price + actual basis – net premium</td>
<td><strong>$6.05</strong></td>
</tr>
</tbody>
</table>
**Session 3.3: Grain marketing scenarios**

**SCENARIO RESULTS: B**

Futures price increases to $5.75/bu, Basis strengthens to +$1.00

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Ending Price</th>
</tr>
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<tbody>
<tr>
<td>Speculative (Cash)</td>
<td>Cash sale price = Futures price + Actual Basis</td>
<td>$6.75</td>
</tr>
<tr>
<td>Forward Contract</td>
<td>Forward contract price = Original negotiated cash sale price</td>
<td>$5.50</td>
</tr>
<tr>
<td>Hedge to Arrive Contract</td>
<td>HTA contract price = Original Futures price +/- Actual Basis</td>
<td>$5.75</td>
</tr>
<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash Price</td>
<td>$5.75</td>
</tr>
<tr>
<td>50/50 Futures Hedge/Cash</td>
<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
<td>$6.25</td>
</tr>
<tr>
<td>Hedge with Put Options</td>
<td>IF Futures &gt; than original strike price, = Cash sale price – put premium</td>
<td>$6.45</td>
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<tr>
<td>Established Price Window</td>
<td>Maximum price = Call strike price + actual basis – net premium</td>
<td>$6.30</td>
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</tbody>
</table>
Session 3.3: Grain marketing scenarios

SCENARIO RESULTS: C

Futures price increases to $5.75/bu, Basis weakens to +$0.50

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
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<tbody>
<tr>
<td>Speculative (Cash)</td>
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<td>HTA contract price = Original Futures price +/- Actual Basis</td>
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<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash Price</td>
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</tr>
<tr>
<td>50/50 Futures Hedge/Cash</td>
<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
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<tr>
<td>Hedge with Put Options</td>
<td>IF Futures &gt; than original strike price, = Cash sale price – put premium</td>
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<td>Established Price Window</td>
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### Marketing Strategy Calculations

<table>
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<td>HTA contract price = Original Futures price +/- Actual Basis</td>
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<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash sale price</td>
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<tr>
<td>50/50 Futures Hedge/Cash</td>
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<td>Hedge with Put Options</td>
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Futures price decreases to **$3.75/bu**, Basis stays at **+$0.75**
### Session 3.3: Grain marketing scenarios

#### SCENARIO RESULTS: E

Futures price decreases to $3.75/bu, Basis strengthens to +$1.00

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Ending Price</th>
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<tbody>
<tr>
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<td>Cash sale price = Futures price + Actual Basis</td>
<td>$4.75</td>
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<tr>
<td>Forward Contract</td>
<td>Forward contract price = Original negotiated cash sale price</td>
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<tr>
<td>Short Futures Hedge</td>
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</tr>
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<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
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</tr>
<tr>
<td>Hedge with Put Options</td>
<td>IF Futures &lt; than original strike price, = Strike price – put premium + actual basis</td>
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<td>Established Price Window</td>
<td>Minimum price = Put strike price + actual basis – net premium</td>
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</table>
### SCENARIO RESULTS: F

Futures decreases to $3.75, Basis weakens to +$0.50

<table>
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<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Cash)</td>
<td>Cash sale price = Futures price + Actual Basis</td>
<td>$4.25</td>
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<tr>
<td>Forward Contract</td>
<td>Forward contract price = Original negotiated cash sale price</td>
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<tr>
<td>Hedge to Arrive Contract</td>
<td>HTA contract price = Original Futures price +/- Actual Basis</td>
<td>$5.25</td>
</tr>
<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash sale price</td>
<td>$5.25</td>
</tr>
<tr>
<td>50/50 Futures Hedge/Cash</td>
<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
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</tr>
<tr>
<td>Hedge with Put Options</td>
<td>IF Futures &lt; than original strike price, = Strike price – put premium + basis</td>
<td>$4.95</td>
</tr>
<tr>
<td>Established Price Window</td>
<td>Minimum price = Put strike price + actual basis – net premium</td>
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### SCENARIO RESULTS: G

Futures price stays at $4.75, Basis strengthens to +$1.00

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Ending Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Cash)</td>
<td>Cash sale price = Futures price + Actual Basis</td>
<td>$5.75</td>
</tr>
<tr>
<td>Forward Contract</td>
<td>Forward contract price = Original negotiated cash sale price</td>
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<tr>
<td>Hedge to Arrive Contract</td>
<td>HTA contract price = Original Futures price +/- Actual Basis</td>
<td>5.75</td>
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<tr>
<td>Short Futures Hedge</td>
<td>= Gain/Loss on Futures + Cash sale price</td>
<td>$5.75</td>
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<td>50/50 Futures Hedge/Cash</td>
<td>= (Gain/Loss on Futures + Cash Price)<em>.5 + (Cash Sale Price)</em>.5</td>
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<tr>
<td>Hedge with Put Options</td>
<td>IF Futures = to original strike price, = Strike price – put premium + basis</td>
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<td>Established Price Window</td>
<td>IF Futures do not change = Cash sale price – net premium</td>
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</table>
### SCENARIO RESULTS: H

Futures price stays at $4.75, Basis weakens to +$0.50

<table>
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<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
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<tr>
<td>Forward Contract</td>
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<td>Hedge to Arrive Contract</td>
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<tr>
<td>Short Futures Hedge</td>
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<td>Hedge with Put Options</td>
<td>IF Futures = to original strike price, = Strike price – put premium + basis</td>
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<td>Established Price Window</td>
<td>IF Futures do not change = Cash sale price – net premium</td>
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### Pre-Harvest Scenario Overview

<table>
<thead>
<tr>
<th>Scenario</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Mean</th>
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<td>$5.50</td>
<td>$5.75</td>
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<td>$5.75</td>
<td>$0.50</td>
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<td>50/50 Futures Hedge/Cash</td>
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<td>$6.25</td>
<td>$5.75</td>
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<td>$5.25</td>
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<td>$1.50</td>
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<td>Hedge with Put Options</td>
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<td>$5.95</td>
<td>$5.20</td>
<td>$5.45</td>
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<td>$5.80</td>
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<td>$5.58</td>
<td>$5.05</td>
<td>$6.30</td>
<td>$1.25</td>
</tr>
</tbody>
</table>

A = Futures increase, Basis doesn’t change  
B = Futures increase, Basis strengthens  
C = Futures increase, Basis weakens  
D = Futures decrease, Basis doesn’t change  
E = Futures decrease, Basis strengthens  
F = Futures decrease, Basis weakens  
G = Futures doesn’t change, Basis strengthens  
H = Futures doesn’t change, Basis weakens
POST-HARVEST CONSIDERATIONS

- Decisions made before harvest are only half of the marketing battle
- If you chose a pre-harvest option that required grain delivery, you have a few options to regain ownership in the futures market
  - Enter a long futures position
  - Paper Farming (Buying Calls)
  - Establishing a “Price Window” with a Bull Call Vertical Spread
POST-HARVEST SCENARIO 1:

- On September 1, a farmer sold Hard Red Wheat for $6.00 in the cash market
- Today’s Kansas City HRW future’s price is $5.25
  - The producer wants to take advantage of prices if they move higher
  - The producer does not think futures price will break resistance at $6.00
- ATM December Call option premium is $0.35
- $6.00 December Call option premium is $0.10
### Session 3.3: Grain marketing scenarios

#### SCENARIO RESULTS: A

Futures price stays at $5.25

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Long Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss in Futures</td>
<td>$6.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>Paper Farming (Buy Calls)</td>
<td>Net Price = Cash sale price + (Futures price – Strike price) – call premium</td>
<td>$5.65</td>
<td>-$0.35</td>
</tr>
<tr>
<td>Established Price Window (Bull Call Vertical Spread)</td>
<td>Net Price = Cash sale price – net premium + (Futures price – Strike price)</td>
<td>$5.75</td>
<td>-$0.25</td>
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</table>
Session 3.3: Grain marketing scenarios

**SCENARIO RESULTS: B**

Futures price decreases to $4.50

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
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</thead>
<tbody>
<tr>
<td>Speculative (Long Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss in Futures</td>
<td>$5.25</td>
<td>-$0.75</td>
</tr>
<tr>
<td>Paper Farming (Buy Calls)</td>
<td>Net Price = Cash sale price – call premium</td>
<td>$5.65</td>
<td>-$0.35</td>
</tr>
<tr>
<td>Established Price Window (Bull Call Vertical Spread)</td>
<td>Net Price = Cash sale price – net premium</td>
<td>$5.75</td>
<td>-$0.25</td>
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</table>
Futures price increases to **$6.00**

<table>
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<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Long Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss in Futures</td>
<td>$6.75</td>
<td>+$0.75</td>
</tr>
<tr>
<td>Paper Farming (Buy Calls)</td>
<td>Net Price = Cash sale price + (Futures price – Strike price) – call premium</td>
<td>$6.40</td>
<td>-$0.40</td>
</tr>
<tr>
<td>Established Price Window (Bull Call Vertical Spread)</td>
<td>Net Price = Cash sale price – net premium + (Futures price – Strike price)</td>
<td>$6.50</td>
<td>+$0.50</td>
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</table>
Session 3.3: Grain marketing scenarios

SCENARIO RESULTS: D

Futures price increases to $7.00

<table>
<thead>
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<th>Marketing Strategy</th>
<th>Calculation</th>
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<th>Change from Harvest</th>
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</thead>
<tbody>
<tr>
<td>Speculative (Long Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss in Futures</td>
<td>$7.75</td>
<td>+$1.75</td>
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<tr>
<td>Paper Farming (Buy Calls)</td>
<td>Net Price = Cash sale price + (Futures price – Strike price) – call premium</td>
<td>$7.40</td>
<td>+$1.40</td>
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<tr>
<td>Established Price Window (Bull Call Vertical Spread)</td>
<td>Maximum Price = Cash sale price – net premium + Strike Price Spread</td>
<td>$6.50</td>
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</table>
### Session 3.3: Grain marketing scenarios

#### POST-HARVEST SCENARIO 1 OVERVIEW

<table>
<thead>
<tr>
<th>Change from Harvest</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Mean</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td>Speculative (Long Futures)</td>
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<td>($0.25)</td>
<td>$0.50</td>
<td>$0.50</td>
<td>$0.13</td>
<td>$0.75</td>
</tr>
</tbody>
</table>

A = Futures price stays at $5.25  
B = Futures price decreases to $4.50  
C = Futures price increases to $6.00  
D = Futures price increases to $7.00
Session 3.3: Grain marketing scenarios

**POST-HARVEST CONSIDERATIONS**

- If you chose a pre-harvest option that did NOT require grain delivery, you still hold the physical commodity and have different options
  - Leave it unhedged
  - Maintain a short futures position (Storage Hedge)
  - Sell Covered Calls
- Since we still hold the physical commodity, basis is still important
- In this scenario, storage costs are a major concern
  - Even if you have your own grain bin – storage isn’t free
Session 3.3: Grain marketing scenarios

STORING GRAIN

• General rule of thumb
  • Store grain when basis is weaker than normal at harvest OR
  • Store grain when you expect a price increase to exceed storage costs

• Advantages of storage
  • You have control of the grain AND can take full advantage of a price rally

• Disadvantages of storage
  • Cost of Storage & Interest on grain
  • Grain quality can deteriorate
  • No price floor
CALCULATING STORAGE COSTS

• A good estimate for storage cost is…

Futures Price \times (\text{Interest rate} + \text{Operating Line Interest Rate}) \times (\# \text{ Days} / 360)

• For our examples..
  • Interest Rate equals 2%
  • This is a cost of storage/shrinkage adjustment
  • Operating Line Interest Rate = 4%
  • This assumes there is a cost of capital to store grain
  • Cost of carry will be shown for the 20^{th} Day of each futures delivery month (Expiration Day)
## Calculating Storage Costs

### Session 3.3: Grain marketing scenarios

### Example cost of carry calculations

<table>
<thead>
<tr>
<th>KC HRW Futures Delivery Month</th>
<th># Days</th>
<th>Cost of Carry</th>
<th>KC HRW Cash Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/20/2017</td>
<td>19</td>
<td>$0.017</td>
<td>Cash Price $6.00</td>
</tr>
<tr>
<td>12/20/2017</td>
<td>110</td>
<td>$0.096</td>
<td>Basis $0.75</td>
</tr>
<tr>
<td>3/20/2018</td>
<td>200</td>
<td>$0.206</td>
<td>Futures Price $5.25</td>
</tr>
<tr>
<td>5/20/2018</td>
<td>261</td>
<td>$0.269</td>
<td>Current Date 9/1/2017</td>
</tr>
<tr>
<td>7/20/2018</td>
<td>322</td>
<td>$0.332</td>
<td>Interest Rate (Cost of Storage) 2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Operating Line Interest Rate 4%</td>
</tr>
</tbody>
</table>

Futures Price x (Interest rate + Operating Line Interest Rate) x (# Days / 360)
POST-HARVEST SCENARIO 2:

- On September 1, a farmer harvested Hard Red Wheat. He plans to market his grain by December 1.
- Today’s Cash Price is $6.00
- Today’s Kansas City HRW future’s price is $5.25
- Expected Basis to Portland is +0.75
  - The producer wants to take advantage of prices if they move higher
  - The producer does not think futures price will break resistance at $6.00
- $6.00 December Call option premium is $0.10
- Cost of carry from September 1 to December 1 is $0.08
**SCENARIO RESULTS: A**

Futures price stays at **$5.25**, Basis stays at **+$0.75**, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$5.92</td>
<td>-$0.08</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$5.92</td>
<td>-$0.08</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$6.02</td>
<td>+$0.02</td>
</tr>
</tbody>
</table>
### Marketing Strategy Results: B

Futures price stays at $5.25, Basis weakens to +$0.50, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$5.67</td>
<td>-$0.33</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$5.67</td>
<td>-$0.33</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$5.77</td>
<td>-$0.23</td>
</tr>
</tbody>
</table>
## Session 3.3: Grain marketing scenarios

### SCENARIO RESULTS: C

Futures price stays at **$5.25**, Basis strengthens to **+$1.00**, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$6.17</td>
<td>+$0.17</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$6.17</td>
<td>+$0.17</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$6.27</td>
<td>+$0.27</td>
</tr>
</tbody>
</table>
### Session 3.3: Grain marketing scenarios

#### SCENARIO RESULTS: D

Futures price increases to **$6.25**, Basis stays at **+$0.75**, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speculative (Unhedged)</strong></td>
<td>Net Price = Cash sale price - Storage Costs</td>
<td>$6.92</td>
<td>+$0.92</td>
</tr>
<tr>
<td><strong>Storage Hedge (Short Futures)</strong></td>
<td>Net Price = Cash sale price + Gain/Loss from Futures - Storage Costs</td>
<td>$5.92</td>
<td>-$0.08</td>
</tr>
<tr>
<td><strong>Sell Covered Calls (Sell OTM Calls)</strong></td>
<td>Maximum Price = Call Strike Price + Actual Basis + Call Premium - Storage Costs</td>
<td>$6.77</td>
<td>+$0.77</td>
</tr>
</tbody>
</table>
### SCENARIO RESULTS: E

Futures price increases to **$6.25**, Basis weakens to **+$0.50**, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td><strong>$6.67</strong></td>
<td><strong>+$0.67</strong></td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td><strong>$5.67</strong></td>
<td><strong>-$0.33</strong></td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td><strong>$6.77</strong></td>
<td><strong>+$0.77</strong></td>
</tr>
</tbody>
</table>
Session 3.3: Grain marketing scenarios

SCENARIO RESULTS: F

Futures price increases to $6.25, Basis strengthens to +$1.00, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$7.17</td>
<td>+$1.17</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$6.17</td>
<td>+$0.17</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Maximum Price = Call Strike Price + Actual Basis + Call Premium – Storage Costs</td>
<td>$7.02</td>
<td>+$1.02</td>
</tr>
</tbody>
</table>
### SCENARIO RESULTS: G

Futures price decreases to $4.25, Basis stays at +$0.75, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$4.92</td>
<td>-$1.08</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$5.92</td>
<td>-$0.08</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$5.02</td>
<td>-$0.98</td>
</tr>
</tbody>
</table>
### SCENARIO RESULTS: H

Futures price decreases to **$4.25**, Basis weakens to **+$0.50**, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$4.67</td>
<td>-$1.33</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$5.67</td>
<td>-$0.33</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$4.77</td>
<td>-$1.23</td>
</tr>
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</table>
## Session 3.3: Grain marketing scenarios

### SCENARIO RESULTS: I

Futures price decreases to $4.25, Basis strengthens to +$1.00, Grain Marketed December 1

<table>
<thead>
<tr>
<th>Marketing Strategy</th>
<th>Calculation</th>
<th>Net Price</th>
<th>Change from Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td>Net Price = Cash sale price – Storage Costs</td>
<td>$5.17</td>
<td>-$0.83</td>
</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td>Net Price = Cash sale price + Gain/Loss from Futures – Storage Costs</td>
<td>$6.17</td>
<td>+$0.17</td>
</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
<td>Net Price = Cash Sale Price + Call Premium – Storage Costs</td>
<td>$5.27</td>
<td>-$0.73</td>
</tr>
</tbody>
</table>
### Session 3.3: Grain marketing scenarios

**POST-HARVEST SCENARIO 2 OVERVIEW**

<table>
<thead>
<tr>
<th>Change from Harvest</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>Mean</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speculative (Unhedged)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>($0.08)</td>
<td>($0.33)</td>
<td>$0.17</td>
<td>$0.92</td>
<td>$0.67</td>
<td>$1.17</td>
<td>($1.08)</td>
<td>($1.33)</td>
<td>($0.83)</td>
<td>($0.08)</td>
<td>$2.50</td>
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</tr>
<tr>
<td>Storage Hedge (Short Futures)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>($0.08)</td>
<td>($0.33)</td>
<td>$0.17</td>
<td>($0.08)</td>
<td>($0.33)</td>
<td>$0.17</td>
<td>($0.08)</td>
<td>($0.33)</td>
<td>$0.17</td>
<td>($0.08)</td>
<td>$0.50</td>
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</tr>
<tr>
<td>Sell Covered Calls (Sell OTM Calls)</td>
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<tr>
<td>$0.02</td>
<td>($0.23)</td>
<td>$0.27</td>
<td>$0.77</td>
<td>$0.77</td>
<td>$1.02</td>
<td>($0.98)</td>
<td>($1.23)</td>
<td>($0.73)</td>
<td>($0.04)</td>
<td>$2.25</td>
<td></td>
</tr>
</tbody>
</table>

A = Futures doesn’t change, Basis doesn’t change  
B = Futures doesn’t change, Basis weakens  
C = Futures doesn’t change, Basis strengthens  
D = Futures increase, Basis doesn’t change  
E = Futures increase, Basis weakens  
F = Futures increase, Basis strengthens  
G = Futures decrease, Basis doesn’t change  
H = Futures decrease, Basis weakens  
I = Futures decrease, Basis strengthens
Session 3.3: Grain marketing scenarios

SUMMARY

- Grain marketing is not easy, and it is not a perfect science
  - There is no perfect plan to get rich farming
- What happens after harvest is just as important as what you do before harvest
- Pigs get fat, hogs get slaughtered
  - If you’ve made a nice profit, don’t think you’ve found a crystal ball – pocket the gain and continue to follow your marketing plan
SESSION 3

WRAP-UP AND CONCLUSIONS
CONCLUSIONS

• Options are complex, but add to flexibility in your marketing plan
• There are countless possible market scenarios you could encounter in a given year
  • And they won’t come in nice, round numbers like our examples!
• The BEST way to market your grain is to choose a plan and stick to it
• What should you do next?
  • Continue your grain marketing education – never stop learning
  • Evaluate your current marketing plan – can you improve it?
Session 3: Introduction to options and market scenarios

FURTHER EDUCATION: WEBSITES

• Idaho AgBiz, Crop Markets Page
  • https://www.uidaho.edu/cals/idaho-agbiz/crop-markets

• K-State Ag Manager, Grain Marketing Page
  • http://www.agmanager.info/grain-marketing

• Iowa State Ag Decision Maker
  • https://www.extension.iastate.edu/agdm/crops/html/a2-40.html
Session 3: Introduction to options and market scenarios

FURTHER EDUCATION: BOOKS

• Grain Marketing is Simple, Edward Usset
  • Talks about grain marketing plans for pre- and post-harvest, walks through pricing tools

• A Complete Guide to the Futures Market, Jack D. Schwager
  • Looks at technical and fundamental analysis from a trader’s perspective
REFERENCES


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IDaho BARLEY COMMISSION

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National Institute of Food and Agriculture