DEFINITIONS

- Crop Marketing Year
  - WHEAT: JUNE 1 TO MAY 31
  - CORN: SEPTEMBER 1 - AUGUST 31
  - SOYBEANS: SEPTEMBER 1 - AUGUST 31

MORE DEFINITIONS

- Futures
  - Futures contract: contract when a seller agrees to sell and buyer agrees to buy a specified amount of a specific quality of a commodity in the future. Contract has all items specified except price.
  - Why?
    - Biological nature of ag production
    - Prices unknown when production decision is made
    - Processors need year around supply
MARKETING PLAN

A marketing plan is an outline of price, date, and quantity objectives used to generate a reasonable return given the existing market conditions.

EXAMPLES

Example: Preharvest

Grain Marketing
Center for Farm Business Management
University of Minnesota

Expected 2014 production: 180,000 barrels of soybeans per bushel

Objective: To maximize profits and minimize risk.

- Price 10,000 bushels at $4.50 per bushel by May 1st.
- Price 10,000 bushels at $4.60 per bushel by June 1st.
- Price 10,000 bushels at $4.70 per bushel by July 1st.
- Price 10,000 bushels at $4.80 per bushel by August 1st.
- Price 10,000 bushels at $4.90 per bushel by September 1st.
- Price 10,000 bushels at $5.00 per bushel by October 1st.
- Price 10,000 bushels at $5.10 per bushel by November 1st.
- Price 10,000 bushels at $5.20 per bushel by December 1st.

Additional details:

- Futures contract
- Options
- Hedging strategies
CASH OR SPOT MARKET

- When: Immediate or near-term delivery
- What: Commodities
  - Defined by minimum standards: #1 yellow soybeans, #2 corn
  - Often set by USDA
- Where: Typically at buyer’s location
  - Elevator, processor, auction
GRAIN FORWARD PRICING DECISIONS

• How Much to Forward Contract or Hedge?
  • For Pre-Harvest Pricing:
    • Max of 50%-75% of expected production (average yields)
    • If have a short crop, use Crop Insurance Coverage revenues to help fill Forward Contract obligations
  • Recommended: A disciplined grain marketing plan

• What Time Period to Set Grain Delivery In?
  • Examine Harvest vs Post Harvest Basis, Storage Returns, and Grain Delivery Opportunities
  • Timing of cash flow needs—the John Deere effect or Rental payment

FUTURES MARKET EXCHANGES

• Trading pits and Electronic pits
• Centralized pricing
  • Buyers and sellers represented
  • All information represented
• Perfectly competitive market
  • Open out-cry or electronic trading
  • Anyone with cash can participate

THE FUTURES CONTRACT

• Legally binding contract to make or take delivery of the commodity
  • Form (wt, grade, specifications)
  • Time (delivery date)
  • Place (delivery location)
  • Possession (seller delivers, buyer receives)
STANDARDIZED CONTRACT
- Certain delivery (contract) months
- Fixed size of contract
  - Grains 5,000 bushels
  - Livestock in pounds
    - Lean Hogs 40,000 lbs carcass
    - Live Cattle 40,000 lbs live
    - Feeder Cattle 50,000 lbs live
- Specified delivery points: few delivery points

HEDGING WITH FUTURES
- Price Hedges on Grain Production
  - (Prehedge): Analyze hedging opportunity
    - Futures less Basis less Brokers' fees
  - (Placing the Hedge): Sell futures contract(s) nearest to the grain delivery period
    - In a “Short” or “sell” futures position
  - (Closing Out the Hedge Position)
    - Buy back futures contract(s)

EXAMPLES
- Objective: Buy low, sell high
- You can either buy or sell initially
  - Sell a December Corn contract initially
    - Deliver corn in December OR
    - Buy back at a later date
  - Buy a February Live Cattle contract initially
    - Take delivery of cattle in February OR
    - Sell back at a later date
MARGIN ACCOUNT
- Highly leveraged trades
  - Margin is the earnest money that must be maintained in the trader's account
  - Often 5-10% of full value
- Margin account settled everyday
  - Must maintain account balance
  - Margin call
  - Calculate as if you had to get out of the market every day.

MARGIN ACCOUNT
- Initial margin: The amount needed to open and account.
- Maintenance margin: The minimum amount needed to keep and account open.
- "Mark to the Market" at the close of each trading day.
MARGIN ACCOUNT EXAMPLE

<table>
<thead>
<tr>
<th>Day</th>
<th>Price</th>
<th>Chg</th>
<th>G/L</th>
<th>Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.54</td>
<td>+.01</td>
<td>+50</td>
<td>1050</td>
</tr>
<tr>
<td>2</td>
<td>4.58</td>
<td>-.04</td>
<td>-200</td>
<td>850</td>
</tr>
<tr>
<td>3</td>
<td>4.61</td>
<td>-.03</td>
<td>-150</td>
<td>700</td>
</tr>
</tbody>
</table>

Below Maintenance Margin. Must make $300 margin call to restore to initial margin $1000.

4  4.52  +.09  +450  1450

Changes reflect the initial “sell” of the contract.

RISKS OF MARKETING TOOLS

- Options Volatility Risk
  - Risk that option premiums will not change 1-for-1 with cash/futures as the price level changes.
- Production Risk if Pre-harvest Pricing
  - Risk of being unable to deliver grain to fulfill a contract.
- Counter Party Risk
  - Risk that a buyer won't fulfill their contract obligations.
- Control Risk
  - Risk of market actions getting “out of control” before corrective actions can be taken by the seller.

PRICE TREND EFFECTS
ON CASH SALES & FORWARD CONTRACTS

<table>
<thead>
<tr>
<th>Pricing Alternatives</th>
<th>Falling Futures</th>
<th>Rising Futures</th>
<th>Wider Basis</th>
<th>Narrower Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Market Sales</td>
<td>(−)</td>
<td>(+)</td>
<td>(−)</td>
<td>(+)</td>
</tr>
<tr>
<td>Forward Cash Contract</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Basis Contract</td>
<td>(−)</td>
<td>(+)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Hedge-to-Arrive (HTA)</td>
<td>None</td>
<td>None</td>
<td>(−)</td>
<td>(+)</td>
</tr>
<tr>
<td>Minimum Price Contract</td>
<td>None</td>
<td>(+)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Price Later Contract</td>
<td>(−)</td>
<td>(+)</td>
<td>(−)</td>
<td>(+)</td>
</tr>
</tbody>
</table>
FORWARD CONTRACT VS FUTURES HEDGE

• If Basis Projection is Accurate, then...
  • Forward Contract $ = Futures Hedge $

• Who Carries the Futures Account?
  • FC: Elevator contacts broker & pays any margin calls
  • Hedge: Producer works w. broker, pays margin calls

• Delivery Commitment?
  • FC: Delivery commitment of X bushels for $X price
  • Hedge: No delivery commitment to elevator

• Basis Commitment?
  • FC: Set cash basis / Hedge: Varying cash basis

Summary of Tools Comparison

<table>
<thead>
<tr>
<th>Method</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash sales</td>
<td>Easy to transact</td>
<td>Minimize risk</td>
</tr>
<tr>
<td></td>
<td>Immediate payment</td>
<td>No price protection</td>
</tr>
<tr>
<td></td>
<td>No set quantity</td>
<td>Less flexible</td>
</tr>
<tr>
<td>Forward contract</td>
<td>Easy to understand</td>
<td>Must deliver in full</td>
</tr>
<tr>
<td></td>
<td>Flexible quantity</td>
<td>Opportunity loss if prices rise</td>
</tr>
<tr>
<td></td>
<td>Locked-in price</td>
<td></td>
</tr>
<tr>
<td>Futures contract</td>
<td>Easy to enter/exit</td>
<td>Opportunity loss if prices rise</td>
</tr>
<tr>
<td></td>
<td>Minimize risk</td>
<td>Commission cost</td>
</tr>
<tr>
<td></td>
<td>Often better prices than forward contracts</td>
<td>Performance bond calls</td>
</tr>
<tr>
<td></td>
<td>Set quantities</td>
<td></td>
</tr>
<tr>
<td>Options contract</td>
<td>Price protection</td>
<td>Premium cost</td>
</tr>
<tr>
<td></td>
<td>Minimize risk</td>
<td>Set quantities</td>
</tr>
<tr>
<td></td>
<td>Benefit if prices rise</td>
<td>Commission cost</td>
</tr>
<tr>
<td></td>
<td>Easy to enter/exit</td>
<td></td>
</tr>
</tbody>
</table>

PRICE TREND EFFECTS ON FUTURES, OPTIONS

<table>
<thead>
<tr>
<th>Pricing Alternatives</th>
<th>Falling Futures</th>
<th>Rising Futures</th>
<th>Wider Basis</th>
<th>Narrower Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Futures Hedge</td>
<td>None (--)</td>
<td>None (+)</td>
<td>None (-)</td>
<td>None (+)</td>
</tr>
<tr>
<td>Buy Put Options</td>
<td>None (+)</td>
<td>None (-)</td>
<td>None (+)</td>
<td>None (-)</td>
</tr>
<tr>
<td>Sell Cash &amp; Buy Calls</td>
<td>None (+)</td>
<td>None (-)</td>
<td>None (+)</td>
<td>None (-)</td>
</tr>
<tr>
<td>Marketing Loans</td>
<td>None (+)</td>
<td>None (-)</td>
<td>None (+)</td>
<td>None (-)</td>
</tr>
</tbody>
</table>
AREAS OF RISK EXPOSURE FOR CASH SALES & FORWARD CONTRACTS

<table>
<thead>
<tr>
<th>Pricing Alternatives</th>
<th>Options Volatility</th>
<th>Prodn. Risk if Prehvst.</th>
<th>Counterparty Risk</th>
<th>Control Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Market Sales</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Forward Cash Contract</td>
<td>Yes</td>
<td>Yes</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Basis Contract</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hedge-to-Arrive (HTA)</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Minimum Price Contract</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Price Later Contract</td>
<td>---</td>
<td>---</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

AREAS OF RISK EXPOSURE FOR FUTURES, OPTIONS & MARKETING LOANS

<table>
<thead>
<tr>
<th>Pricing Alternatives</th>
<th>Options Volatility</th>
<th>Prodn. Risk if Prehvst.</th>
<th>Counterparty Risk</th>
<th>Control Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Futures Hedge</td>
<td>---</td>
<td>Yes</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Buy Put Options</td>
<td>Yes</td>
<td>Yes</td>
<td>---</td>
<td>Yes</td>
</tr>
<tr>
<td>Sell Cash &amp; Buy Calls</td>
<td>Yes</td>
<td>---</td>
<td>Yes</td>
<td>---</td>
</tr>
<tr>
<td>Marketing Loans</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>Yes</td>
</tr>
</tbody>
</table>

GOALS IN GRAIN MARKETING

- Price Improvement
  - To raise average grain selling price
- Price Risk Reduction
  - To reduce seller’s downside price risk
- Average Pricing via Sequential Sales
- Financial Management Oriented Goals
  - Enterprise cost or whole farm profit objectives
- Combination Goals
  - Difficult to enhance price AND reduce risk
IMPROVING THE SELLING PRICE OF GRAIN

• Farmer's Most Common Marketing Goal:
  • To improve average grain selling price!
  • To maximize grain selling price subject to the need to manage harmful downside price risk

  • Specific Goals: Getting better than the...
    • Average price available
    • Middle (50%) price available
    • Harvest price

REDUCING GRAIN PRICE RISK

• Goal: Reducing price risk by protecting from harmful price moves
  • Grain Sellers are motivated to:
    • Protect themselves from downside price risk
    • Possibility profit from price increases

• Tools for Reducing Grain Price Risk:
  • Forward Contracts & Hedges: To lock in prices
  • MPCs & Put Options: To set price floors

COMBINING GRAIN MARKETING GOALS

Difficult to Enhance Prices & Reduce Price Risk at the same time

  • Example: Higher returns & price variability from pre-harvest futures hedges vs. buying put options

Principle of Price Risk Management

  • Higher net grain selling prices will tend to be sacrificed in terms of lost pricing opportunities or the cost of managing price risk
  • If Prices ↓: Cash Sales > Options-Fwd. Contracts
  • If Prices ↑: Fwd. Contracts > Options-Cash Sales
TYPES OF GRAIN MARKETING STRATEGIES

- Routine Strategies
  - Grain marketed annually at same time with same tool regardless of market conditions
    - Example: Preharvest hedge 1/3 of exp. production, sell 1/3 at harvest, store rest on farm for 6 months then sell

- Systematic Strategies
  - Allowing for yearly variation in marketing actions based on Key Market Indicators
    - Key #1: Preharvest Prices vs. Reference Prices
    - Key #2: Years following Short Crops

AVERAGE PRICING VIA SEQUENTIAL SALES

Deliberately pricing portions of the crop at different times of the marketing year

Average Pricing....

(+): AVOIDS selling 100% at market LOWS
(-): ALSO AVOIDS selling 100% at market HIGHS

Benefits of Average Pricing:
- Adds structure & discipline to marketing plans
- Form of price risk management

TYPES OF GRAIN MKTG. STRATEGIES (CONT.)

- Strategies Using Expert Forecasts
  - When people profit from their superior ability to forecast grain market trends & marketing decisions
    - In general, it is difficult for individuals to predict market price direction better than other market participants (AGMAS)

- Strategies Using Market-Based Forecasts
  - Using futures, options & basis information as key market indicators for making marketing decisions
    - Key #1: “Wide” Cash Grain Basis @ harvest
    - Key #2: “Higher / Lower than normal” preharvest hedge profits
HOW EFFICIENT ARE GRAIN FUTURES MARKETS AT DETERMINING GRAIN PRICES?

MARKETING CHALLENGES & BENEFITS

- The Challenge of Grain Marketing Decisions
- Difficult to obtain higher grain selling prices!!

  - High 1/3 vs Middle 1/3:
    - Yields: +17%; Costs: –37%; Prices +12%, More Notill
  - Low 1/3 vs Middle 1/3:
    - Yields: –18%; Costs: +28%; Prices –12%, Less Notill
  - Study Critique: Not measuring effectiveness of marketing practices used, only Hi/Lo Profit

- Production is 1st priority; Marketing 2+

GRAIN PRICE DRIVERS

- Supply
  - Think 2012

- Demand
  - Think Ethanol
SOURCE MATERIALS
Dr. Daniel M. O’Brien,
Extension Agricultural Economist K-State University
Chad Hart, Iowa State University Grain Economist
Lee Schultz, ISU Livestock Economist
John Lawrence, ISU Livestock Economist
Ed Usset, U of MN Marketing Specialist

QUESTIONS?
ROBERT TIGNER
NEBRASKA EXTENSION
ROBERT.TIGNER@UNL.EDU
Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.

University of Nebraska–Lincoln Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.