Advanced Grain Marketing Techniques: Hedging Soft White Wheat

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Outline

• Managing risk exposure
• Marketing plans
• Marketing tools
• Track your performance
• Stress less (live longer)
Managing Risk

• Risk preferences vary across people

• How do we limit production risk?
  – Crop insurance
  – Fertilizer/chemical application
  – Varietal selection

• How do we limit price risk?
  – Revenue insurance
  – Marketing contracts (Shepherd’s Grain)
  – Pray
Price Risk

• Sources of price risk
  – Domestic markets
  – International markets
  – *Not under your control*

• Manage your exposure with a marketing plan
  – Revenue insurance
  – Forward contracting
  – Hedging
Marketing Tools

• Why hedge your new crop?
  – Limits downside price risk
  – Still exposed to *basis risk*
Basis

• Basis defined

  **Cash Price – Nearby Futures Price = Basis**

  – Reflects costs of transporting to a terminal market

  – Can be affected by local market conditions
    • Alternative uses: feedlots, bio-fuel plants
    • May vary over time

  – Kansas HRW wheat basis example
Geographic Variation

Wheat Basis, 02-09-2011

Basis = Cash Price - Nearby Futures Price

KCBT Mar Futures Price: $9.88

$/Bushel

- .44
- .94
- .99
- 1.04
- 1.07
- 1.10
- 1.13
- 1.24
- 1.32
- 1.52

www.agmanager.info
K-State Research and Extension
Geographic Variation

Wheat Basis Deviation, 02-09-2011

Basis Deviation = Current Basis - 3 Year Average Basis (2008, 2009, 2010)
Why trade price risk for basis risk?

- Prices tend to be more volatile
- Basis relationships for a given location tend to be stable over time
- Relative risk exposure is reduced
Basis

- Soft white wheat is not traded on the futures
- Cross-hedge with a CME soft red wheat contract
### Historical Data 2000-2011

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<thead>
<tr>
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<th>Basis ($/bu)</th>
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<tr>
<td>Average</td>
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- Basis deviation is lower
  - Less volatile than prices
  - 95.4% of observations within 2 STD’s ([graph](#))
Historical Data 2000-2011

Nearby Basis

Market aberrations
# Basis Levels 2008-2010

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<td>4.28</td>
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- Basis will range from -0.75 to 0.49
- Cash price will range from $3.54 to 7.54
- Risk exposure is still lower for basis
New Crop Hedge

- Example of new crop hedge
  - Sell a July wheat contract for some proportion of your expected wheat harvest
  - Size of contract not to exceed your estimated harvest (we aren’t speculating here)
  - Take an offsetting position on that July contract prior to expiration
  - Calculate your actual price received
New Crop Hedge

• Scenario 1
  – Price decreases at harvest

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<td>Futures Gain + $0.40/bu</td>
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<td>(Cash price = $8.78)</td>
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<td></td>
<td>Actual Basis - $0.07/bu</td>
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<td>Commission Costs - $0.02/bu</td>
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<td></td>
<td>Actual Cash Sale Price $9.16/bu</td>
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Additional revenue = $0.38/bu
New Crop Hedge

**Scenario 2**
- Price increases at harvest

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(Cash price = $9.58)

Additional revenue = $0.00/bu

Cost of risk protection = $0.42/bu
New Crop Hedge

- Those scenarios demonstrated how a hedge protects from downside price risk

- What about the basis risk?
  - Examples assumed:
    
    \[ \text{expected basis} = \text{actual basis} \]
    
    - Not a bad assumption if basis variability is low

- What if the basis changes?
New Crop Hedge w/ Basis Change

- **Scenario 3**
  - Harvest price decrease, basis widens

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<td>(Cash price = $8.48)</td>
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<td>- $0.37/bu</td>
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**Additional revenue = $0.38/bu**

Gain in futures from hedge is not enough to cover weakening of basis and you get **$0.30/bu less** than Scenario 1 ($9.16/bu)
New Crop Hedge w/ Basis Change

• Scenario 4
  – Harvest price decrease, basis narrows

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Additional revenue = $0.38/bu

Gain in futures plus strengthening of the basis earns you $0.30/bu more than Scenario 1 ($9.16/bu)
New Crop Hedge

- Depending on the direction of a change in basis, you can benefit or lose
  - Basis widens: lose money
  - Basis narrows: gain money

- Is this a level of variability you can live with?

- If not, what are your other marketing options?
Marketing Tools

• Forward contracting
  – Alternative to hedging
  – Allows you to price new crop prior to harvest
  – Eliminates downside price risk and basis risk
    • No commission costs
    • Fewer transaction costs (paperwork, time)
Forward Contracting

• Cost of risk management
  – Elevators will charge you a premium for accepting your price risk
  – New crop bids and cash prices converge as harvest nears

• Another Kansas example
  – Cost of forward contracting across 48 locations
  – Four years of data
Forward Contracting

Average Cost of Forward Contracting

Average (2000-2003)
Marketing Tools

- **Track your progress**
  - Data collection over time will help you evaluate your marketing plan
  - If you encounter Scenario 2 and ‘miss out’ on a harvest time price increase, are you going to hedge next year?
  - What is your 3,4,5 year average price under a marketing plan?
  - How does it compare to selling cash at harvest?
Marketing Tools

- Risk management isn’t a free lunch
  - Hedging
    - Commission costs
    - Losses in futures market
  - Forward contracting
    - Risk premium from transfer of basis risk to elevator
  - Management time
    - Tracking your performance over multiple years

- What is it worth to you to stress less?
Questions?

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Standard Deviation
Standard Deviation

Basis will range from -0.45 to 1.11

Cash price will range from $1.98 to $6.46

Which do you want to predict?