Performance of Hedges & Long Futures Positions in CBOT Corn

Goodland, Kansas

March 2, 2009

Daniel O’Brien, Extension Ag Economist
K-State Research and Extension

CBOT Corn Futures
Monthly: 2000 through 2009

CBOT Corn Futures Price %’s
Based on Option Premiums for May-09 & Dec-09

<table>
<thead>
<tr>
<th></th>
<th>May 2009 CBOT Corn</th>
<th>Dec 2009 CBOT Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price on 2/25/2009</td>
<td>$3.72</td>
<td>$4.04</td>
</tr>
<tr>
<td>Low 10%</td>
<td>$2.68</td>
<td>$1.97</td>
</tr>
<tr>
<td>Low 30%</td>
<td>$3.42</td>
<td>$3.30</td>
</tr>
<tr>
<td>Middle 50%</td>
<td>$3.63</td>
<td>$3.83</td>
</tr>
<tr>
<td>High 70%</td>
<td>$4.07</td>
<td>$4.42</td>
</tr>
<tr>
<td>High 90%</td>
<td>$5.07</td>
<td>$7.54</td>
</tr>
<tr>
<td>Prob. Of $ Falling</td>
<td>56%</td>
<td>59%</td>
</tr>
</tbody>
</table>

U.S. Corn Stocks/Use% vs Price
1973/74 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)

2008/09 Forecast: $3.90 / bu @ 15%
CBOT Soybean Futures Price %’s
Based on Option Premiums for May-09 & Nov-09

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Price on 2/25/2009</td>
<td>$8.80</td>
<td>$8.38</td>
</tr>
<tr>
<td>Low 10%</td>
<td>$7.11</td>
<td>$5.60</td>
</tr>
<tr>
<td>Low 30%</td>
<td>$8.07</td>
<td>$6.99</td>
</tr>
<tr>
<td>Middle 50%</td>
<td>$8.73</td>
<td>$8.08</td>
</tr>
<tr>
<td>High 70%</td>
<td>$9.35</td>
<td>$9.69</td>
</tr>
<tr>
<td>High 90%</td>
<td>$10.48</td>
<td>$16.33</td>
</tr>
<tr>
<td>Prob. Of $ Falling</td>
<td>52%</td>
<td>55%</td>
</tr>
</tbody>
</table>

U.S. Soybean Stocks/Use% vs Price
1973/74 - 2008/09 Mktg Yrs (Feb. 10, 2009 USDA WASDE)

Persistant Inelastic Demand
Agricultural & Other Commodities

- Many Ag Commodities are produced on Inelastic parts of their Demand Curves
  - Supply is often constrained by policies, competition for limited resources, etc.

- Inelastic Price – Revenue Relationship
  - As Price ↑, Revenue ↑
  - As Price ↓, Revenue ↓

- Examples: U.S. Grains, Livestock & Energy

U.S. Corn Price Flexibility Example
$ Response to U.S. Corn Supply Changes

Inelastic Demand => Highly Flexible Corn $’s
31% $ decrease per 12% Supply Increase

Elastic Demand => Inflexible Corn $’s
2% $ decrease per 7% Supply Increase
What Determines Price Elasticity?

- **Elastic Demand** (%Δ Q_{Demand} > %Δ Price)
  - Many close *substitutes*
  - Longer *adjustment period*
  - Commodity is a *large* expense item

- **Inelastic Demand** (%Δ Q_{Demand} < %Δ Price)
  - Few acceptable *substitutes*
  - Shorter *adjustment period*
  - Commodity is a *smaller* expense item

Implications of Inelastic Demand

- **Record High-Low Price Swings (Volatility)**
  - *Low* Stocks/Use “pushed” grain markets into the Inelastic, highly Flexible regions of market demand
    - $P_{Grains}$ responded to their own & other grain’s tight S/D prospects
  - **Fall 2008**: Small–moderate ↑ Supply & ↓ Demand
    - has helped cause a large ↓ in grain prices

- **Expect Market Volatility to Continue**
  - Farm markets remain Inelastic with *high Price Flexibility*

Performance of Corn Futures Pricing Strategies: 1998/1999

- **Hedging CBOT DEC 1998 Corn Futures**
  - Sell March 2, ‘98 – Buy back Dec. 1, ‘98 (+$0.6475 /bu)
  - Sell June 15, ‘98 – Buy back Dec. 1, ‘98 (+$0.24 /bu)

- **Buying CBOT JULY 1999 Corn Futures**
  - Buy Dec. 1, ‘99 – Sell back July 1, ‘99 (−$0.39 /bu)
  - Buy March 1, ‘99 – Sell back July 1, ‘99 (−$0.14 /bu)
1998 CBOT DEC Corn Futures

March 2 – Dec. 1 Hedge: +$0.65 /bu
June 15 – Dec. 1 Hedge: +$0.24 /bu

Profitable Hedges

March 1 – July 1 Long: –$0.39 /bu
June 15 – July 1 Long: –$0.14 /bu

Unprofitable to Buy Back July Futures

1999 CBOT July Corn Futures
July 20, 1998 – July 21, 1999

Dec. 1 – July 1 Long: –$0.39 /bu
March 1 – July 1 Long: –$0.14 /bu

Profitable Hedges

1999 CBOT DEC Corn Futures
December 21, 1998 – December 20, 1999

March 1 – Dec. 1 Hedge: +$0.45 /bu
June 15 – Dec. 1 Hedge: +$0.38 /bu

Profitable Hedges

Corn Futures Pricing: 1999/2000

Hedging CBOT DEC 1999 Corn Futures
- Sell March 1, ‘99 – Buy back Dec. 1, ‘99 (+$0.44/5 /bu)
- Sell June 15, ‘99 – Buy back Dec. 1, ‘99 (+$0.38 /bu)

Buying CBOT JULY 2000 Corn Futures
- Buy Dec. 1, ‘99 – Sell back July 3, ’00 (~-$0.3350 /bu)
- Buy March 1, ’00 – Sell back July 3, ’00 (~-$0.49 /bu)
2000 CBOT July Corn Futures
July 14, 1999 – July 14, 2000

Dec. 1 – July 3 Long: –$0.33 /bu

March 1 – July 3 Long: –$0.49 /bu

Unprofitable to Buy Back July Futures

Corn Futures Pricing: 2000/2001

Hedging CBOT DEC 2000 Corn Futures

- Sell March 1, ‘00 – Buy back Dec. 1, ‘00 (+$0.38 /bu)
- Sell June 15, ‘00 – Buy back Dec. 1, ‘00 (+$0.155 /bu)

Buying CBOT JULY 2001 Corn Futures

- Buy Dec. 1, ’98 – Sell back July 1, ’99 (–$0.45 /bu)
- Buy March 1, ’99 – Sell back July 1, ’99 (–$0.4125 /bu)

Profitable Hedges

2000 CBOT DEC Corn Futures
December 14, 1999 – December 14, 2000

March 1 – Dec. 1 Hedge: +$0.38 /bu

June 15 – Dec. 1 Hedge: +$0.16 /bu

2001 CBOT July Corn Futures
July 12, 2000 – July 14, 2001

Dec. 1 – July 1 Long: –$0.45 /bu

March 1 – July 1 Long: –$0.41 /bu

Unprofitable to Buy Back July Futures
Corn Futures Pricing: 2001/2002

- **Hedging CBOT DEC 2001 Corn Futures**
  - Sell March 1, ’01 – Buy back Dec. 3, ’01 (+$0.4125 /bu)
  - Sell June 15, ’01 – Buy back Dec. 3, ’01 (-$0.0025 /bu)

- **Buying CBOT JULY 2002 Corn Futures**
  - Buy Dec. 3, ’01 – Sell back July 1, ’02 (-$0.0125 /bu)
  - Buy March 1, ’02 – Sell back July 1, ’02 (+$0.1725 /bu)

2001 CBOT DEC Corn Futures

- **December 13, 2000 – December 14, 2001**
  - March 1 – Dec. 3 Hedge: +$0.41 /bu
  - June 15 – Dec. 3 Hedge: -$0.11 /bu

Mixed Results
- Some Good Profits
- Some Breakeven/Loss

2002 CBOT July Corn Futures

- **July 11, 2001 – July 12, 2002**
  - Dec. 3 – July 1 Long: -$0.01 /bu
  - March 1 – July 1 Long: +$0.17 /bu

Breakeven to Positive Results

Corn Futures Pricing: 2002/2003

- **Hedging CBOT DEC 2002 Corn Futures**
  - Sell March 1, ’02 – Buy back Dec. 2, ’02 (-$0.0875 /bu)
  - Sell June 17, ’02 – Buy back Dec. 2, ’02 (-$0.1525 /bu)

- **Buying CBOT JULY 2003 Corn Futures**
  - Buy Dec. 2, ’02 – Sell back July 1, ’03 (-$0.15 /bu)
  - Buy March 3, ’03 – Sell back July 1, ’03 (-$0.0725 /bu)
**2002 CBOT DEC Corn Futures**

December 12, 2001 – December 12, 2002

- March 1 – Dec. 2 Hedge: –$0.09 /bu
- June 17 – Dec. 2 Hedge: –$0.16 /bu

**Breakeven Hedges**

Small losses

---

**2003 CBOT July Corn Futures**


- Dec. 1 – July 1 Long: –$0.15 /bu
- March 1 – July 1 Long: –$0.07 /bu

Unprofitable to Buy Back July Futures

---

**Corn Futures Pricing: 2003/2004**

- **Hedging CBOT DEC 2003 Corn Futures**
  - Sell March 3, ‘03 – Buy back Dec. 1, ‘03 (–$0.0625 /bu)
  - Sell June 16, ‘03 – Buy back Dec. 1, ’03 (–$0.05 /bu)

- **Buying CBOT JULY 2004 Corn Futures**
  - Buy Dec. 1, ‘03 – Sell back July 1, ’04 (+$0.0175 /bu)
  - Buy March 1, ‘04 – Sell back July 1, ‘04 (–$0.51 /bu)

---

**2003 CBOT DEC Corn Futures**

December 11, 2002 – December 12, 2003

- March 3 – Dec. 1 Hedge: –$0.06 /bu
- June 16 – Dec. 1 Hedge: –$0.15 /bu

Breakeven Hedges

Small Losses
Mixed Results
Breakeven to Losses
Buying Back July Futures

Hedging CBOT DEC 2004 Corn Futures
- Sell March 1, ‘04 – Buy back Dec. 1, ‘04 (+$1.05 /bu)
- Sell June 15, ‘04 – Buy back Dec. 1, ‘04 (+$0.9375 /bu)

Buying CBOT JULY 2005 Corn Futures
- Buy Dec. 1, ‘04 – Sell back July 1, ‘05 (–$0.02 /bu)
- Buy March 1, ‘05 – Sell back July 1, ‘05 (–$0.1025 /bu)

Profitable Hedges

Unprofitable to Buy Back July Futures
**Corn Futures Pricing: 2005/2006**

- **Hedging CBOT DEC 2005 Corn Futures**
  - Sell March 1, ‘05 – Buy back Dec. 1, ‘05 (+$0.50 /bu)
  - Sell June 15, ‘05 – Buy back Dec. 1, ’05 (+$0.55 /bu)

- **Buying CBOT JULY 2006 Corn Futures**
  - Buy Dec. 1, ‘05 – Sell back July 3, ‘06 (+$0.15 /bu)
  - Buy March 1, ‘06 – Sell back July 3, ‘06 (–$0.09 /bu)

**2005 CBOT DEC Corn Futures**

- December 13, 2004 – December 14, 2005
  - March 1 – Dec. 1 Hedge: +$0.51 /bu
  - June 15 – Dec. 1 Hedge: +$0.55 /bu

**Profitable Hedges**

**2006 CBOT July Corn Futures**

  - Dec. 1 – July 3 Long: +$0.15 /bu
  - March 1 – July 3 Long: –$0.09 /bu

**Mixed Results**

Both Losses & Positive Results

**Corn Futures Pricing: 2006/2007**

- **Hedging CBOT DEC 2006 Corn Futures**
  - Sell March 1, ‘06 – Buy back Dec. 1, ‘06 (–$0.50 /bu)
  - Sell June 15, ‘06 – Buy back Dec. 1, ’06 (–$0.55 /bu)

- **Buying CBOT JULY 2007 Corn Futures**
  - Buy Dec. 1, ‘06 – Sell back July 2, ‘07 (–$0.37 /bu)
  - Buy March 1, ‘09 – Sell back July 2, ‘07 (–$0.78 /bu)
2006 CBOT DEC Corn Futures
December 13, 2005 – December 14, 2006

Unprofitable Hedges

March 1 – Dec. 1 Hedge: –$1.12 /bu
June 15 – Dec. 1 Hedge: –$1.15 /bu

2007 CBOT July Corn Futures
July 12, 2006 – July 13, 2007

March 1 – July 2 Long: –$0.78 /bu
Dec. 1 – July 2 Long: –$0.37 /bu

Corn Futures Pricing: 2007/2008

Hedging CBOT DEC 2007 Corn Futures
- Sell March 1, ‘07 – Buy back Dec. 3, ’07 (+$0.2725 /bu)
- Sell June 15, ‘07 – Buy back Dec. 3, ’07 (+$0.3825 /bu)

Buying CBOT JULY 2008 Corn Futures
- Buy Dec. 1, ‘07 – Sell July 1, ’08 (+$2.9625 /bu)
- Buy March 3, ‘07 – Sell July 1, ’08 (+$1.4125 /bu)

2007 CBOT DEC Corn Futures
December 18, 2006 – December 14, 2007

March 1 – Dec. 3 Hedge: +$0.27 /bu
June 15 – Dec. 3 Hedge: +$0.38 /bu

Profitable Hedges
2008 CBOT July Corn Futures

Profitable to Buy Back July Futures

March 3 – July 1 Long: +$1.41 /bu
Dec. 3 – July 1 Long: +$2.96 /bu

2008 CBOT DEC Corn Futures
December 17, 2007 – December 12, 2008

Profitable Hedges

June 16 – Dec. 2 Hedge: +$4.32 /bu
March 3 – Dec. 2 Hedge: +$2.43 /bu

2009 CBOT July Corn Futures
February 27, 2008 – February 28, 2009

Results???? (Stay Tuned!)
DEC Corn Hedging Performance 1998-2008


$ per bushel

March 1 - Dec 1 Year June 15 - Dec 1

July Corn Long Position Performance 1999-2008


$ per bushel

Dec 1 - July 1 Year March 1 - July 1

Questions???

Daniel M. O’Brien, Ph.D.
K-State Extension Agricultural Economics:
www.AgManager.info