Feed Price Outlook

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Monthly Corn Prices Since 1998

$/bu

0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00

Monthly Soymeal Prices Since 1998

$/cwt
Dairy Feed Costs ($/cwt)

$/cwt

Jan-98  Jun-98  Nov-98  Apr-99  Sept-99  Feb-00  Jul-00  Dec-00  May-01  Oct-01  Mar-02  Aug-02  Jan-03  Jun-03  Nov-03  Apr-04  Sept-04  Feb-05  Jul-05  Dec-05  May-06  Oct-06  Mar-07  Aug-07  Jan-08  Jun-08  Nov-08  Apr-09  Sept-09  Feb-10  Jul-10  Dec-10
Initial Observations

• Margins determine profitability, not feed costs alone

• Milk prices tend to follow feed costs with some time lag
What will happen to feed costs?

• Carry-out corn stocks estimated at only 730 million bushels (5% stocks to use ratio)

• Corn price will depend primarily on size of U.S. crop and gasoline prices

• Ethanol policy will also play a role
What if ..... ?

• We get a bumper crop?
• Drought from southwest moves into Corn Belt?
• Gasoline prices fall dramatically?
• Ethanol policy changes?
Equally Likely 2011 U.S. Corn Yields

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Yield (bu/ac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster</td>
<td>130</td>
</tr>
<tr>
<td>Repeat of 2010</td>
<td>150</td>
</tr>
<tr>
<td>Trend yield</td>
<td>165</td>
</tr>
<tr>
<td>Good crop</td>
<td>175</td>
</tr>
<tr>
<td>Bumper crop</td>
<td>185</td>
</tr>
</tbody>
</table>
Impact of Yield on Average 2011 Corn Price

Avg price = $5.12/bu

New crop futures > $6.00/bu

bu/ac

135  156  166  174  181
Predicting Corn Prices Using Prices of Ethanol and Natural Gas
How Much of the Corn Price Increase is due to Ethanol?

• Study estimated what corn prices would have been from 2006 to 2009 if
  – Ethanol subsidies eliminated Dec 31, 2004
  – Ethanol production capped at 2004 levels

Historical Corn Prices

<table>
<thead>
<tr>
<th>Year</th>
<th>Price/BU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$2.00</td>
</tr>
<tr>
<td>2006</td>
<td>$3.00</td>
</tr>
<tr>
<td>2007</td>
<td>$4.00</td>
</tr>
<tr>
<td>2008</td>
<td>$4.00</td>
</tr>
<tr>
<td>2009</td>
<td>$3.50</td>
</tr>
</tbody>
</table>
Comparing Actual Prices to "No-Subsidy" Prices

Average Impact of Subsidies: $0.14/bushel
Comparing Actual Prices to "Ethanol-Capped" Prices

Average Impact of Ethanol:
$0.60/bushel
Causes of Higher Corn Prices Since 2004

- Subsidy-Based Ethanol Expansion
- Market-Based Ethanol Expansion
- Non-Ethanol Forces

$/bu

2005 2006 2007 2008 2009

2005 2006 2007 2008 2009
Impact of Ethanol Policy on Future Corn Prices

• Simulated corn prices for the 2011/12 marketing year under different policy alternatives
  – Eliminate tax credit
  – Eliminate tax credit and mandate
Impact of Corn Yields and Ethanol Policy on 2011/12 Corn Prices

- Current ethanol policy
- Eliminate tax credit
- Eliminate mandate and tax credit
Wrap-Up

• Corn price volatility seems here to stay

• Ethanol policy’s biggest impact is when corn is in short supply
  – Exacerbates impacts of poor yields

• Corn prices likely to remain high so long as they are tied to gasoline prices
  – Could cap ethanol production to remove tie