Outlook for Agriculture

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November 5, 2007

World Economic Growth

- Asia, China, India growth remains very strong and is applying pressure on commodity/resource markets
- China has tightened monetary policy to reduce investment and slow the economy
- Europe’s growth has strengthened. ECB raised rates to control inflation. Recently held rates
- Japan continues to fight an aging population and rising oil costs
- Russia’s economy is benefiting from strong oil revenues
- US economic weakness slows world growth but is necessary to rebalance trade flows

<table>
<thead>
<tr>
<th>World Economic Growth</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.2%</td>
<td>3.7%</td>
<td>3.4%</td>
</tr>
<tr>
<td>OECD</td>
<td>2.5%</td>
<td>3.1%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Emerging Asia</td>
<td>8.7%</td>
<td>9.3%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Japan</td>
<td>1.9%</td>
<td>2.2%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Korea</td>
<td>4.0%</td>
<td>5.1%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Latin America</td>
<td>4.1%</td>
<td>5.0%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>6.1%</td>
<td>6.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Russia</td>
<td>6.4%</td>
<td>6.7%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Australia</td>
<td>2.8%</td>
<td>2.7%</td>
<td>2.8%</td>
</tr>
<tr>
<td>European Union</td>
<td>1.7%</td>
<td>2.8%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Canada</td>
<td>2.9%</td>
<td>2.7%</td>
<td>3.0%</td>
</tr>
<tr>
<td>United States</td>
<td>3.2%</td>
<td>3.3%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

This shows the US losing market share in the short term, but then recovering. Argentina expands market share as US loses.

Global soybean exports

- US loses market share, primarily to Brazil.

China emerges as major protein buyer

Meat exports continue to grow, but rate of growth slows

US Economy

- Consumer remained strong through 1stQtr @ 3.7%, but weakened significantly in the 2nd and 3rd Qtr.
- Residential (house) investment has declined by 17%
- Due to low interest rates (greed), we over invested in housing
- Inventory of unsold new and existing houses is impacting real estate values and consumers' ability to obtain funding from home equity to finance consumption. Will "wealth effect" impact food consumption?
- Some households are over-leveraged, many lack liquidity

Interest rates rise modestly over the near term
- Real rates become positive, returning to historical positive real return of 3% - 4%
- Yield curve steepens, lenders get paid for taking maturity risk
- After recovering from weakness caused by housing problems, economy recovers to near its potential of 3%. (driven by population and productivity growth)
- The dollar is expected to continue to lose value relative to trading partners until 2010.
- Current account slowly improves, but shows continued imbalance of trade.
U.S. Ag Situation

- Balance sheet is very strong due to rising land values and profitable operations
- Debt to assets low at 14%
- Return/Income on assets remains low at 3%, but real estate capital gains has raised overall returns to very strong levels vs. other assets. (ROE 13%) Attracts outside capital
- Government outlays have been significant:
  - $17B avg. in 2002-2006
  - are forecast to drop to $13B in 2007
- Government subsidies for ethanol @ 9 bgy = $4.5B

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- are forecast to drop to $13B in 2007
- Government subsidies for ethanol @ 9 bgy = $4.5B

Table 1 – Farm financial ratios indicating solvency and profitability, 2000 – 2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Debt to equity</th>
<th>Solvency</th>
<th>Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current income</td>
<td>Rates of return on assets from</td>
<td>Rates of return on equity from</td>
</tr>
<tr>
<td></td>
<td>equity &amp; capital</td>
<td>total</td>
<td>total</td>
</tr>
<tr>
<td>2000</td>
<td>14.76</td>
<td>1.99</td>
<td>5.12</td>
</tr>
<tr>
<td>2001</td>
<td>14.79</td>
<td>2.59</td>
<td>4.07</td>
</tr>
<tr>
<td>2002</td>
<td>14.99</td>
<td>2.51</td>
<td>4.07</td>
</tr>
<tr>
<td>2003</td>
<td>14.36</td>
<td>2.25</td>
<td>6.63</td>
</tr>
<tr>
<td>2004</td>
<td>13.79</td>
<td>3.40</td>
<td>11.35</td>
</tr>
</tbody>
</table>

Higher crude prices contributed to the increase in ethanol production capacity, as did the MTBE issue, as did government policy direction, and substantial subsidies. (Marketplace signals were magnified by government/political objectives)

Ethanol demand for corn has raised price of corn so government outlays for farm program support declines

**Figure 17**

Farmland values higher

<table>
<thead>
<tr>
<th>Year</th>
<th>Rates of return on assets from</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current income</td>
</tr>
<tr>
<td>2000</td>
<td>1.99</td>
</tr>
<tr>
<td>2001</td>
<td>2.59</td>
</tr>
<tr>
<td>2002</td>
<td>2.51</td>
</tr>
<tr>
<td>2003</td>
<td>2.25</td>
</tr>
<tr>
<td>2004</td>
<td>3.40</td>
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<table>
<thead>
<tr>
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<tr>
<td>2003</td>
<td>6.63</td>
</tr>
<tr>
<td>2004</td>
<td>11.35</td>
</tr>
</tbody>
</table>

**Figure 18**

Direct government payments

<table>
<thead>
<tr>
<th>Year</th>
<th>Total direct government payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0</td>
</tr>
<tr>
<td>1991</td>
<td>5</td>
</tr>
<tr>
<td>1992</td>
<td>10</td>
</tr>
<tr>
<td>1993</td>
<td>15</td>
</tr>
<tr>
<td>1994</td>
<td>20</td>
</tr>
<tr>
<td>1995</td>
<td>25</td>
</tr>
<tr>
<td>1996</td>
<td>30</td>
</tr>
<tr>
<td>1997</td>
<td>35</td>
</tr>
<tr>
<td>1998</td>
<td>40</td>
</tr>
<tr>
<td>1999</td>
<td>45</td>
</tr>
<tr>
<td>2000</td>
<td>50</td>
</tr>
<tr>
<td>2001</td>
<td>55</td>
</tr>
<tr>
<td>2002</td>
<td>60</td>
</tr>
<tr>
<td>2003</td>
<td>65</td>
</tr>
</tbody>
</table>

Absent ethanol, the 2007 Farm Bill would be extremely important.

**Figure 19**

Direct Government Payments as a Percent of Net Farm Income 1990-2003
Producers use a number of products whose price/value are energy related.

Farm Income Indicators 2003-2007

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross farm income</td>
<td>261</td>
<td>296</td>
<td>300</td>
<td>292</td>
<td>337</td>
<td>46</td>
</tr>
<tr>
<td>% Change</td>
<td>14%</td>
<td>1%</td>
<td>-3%</td>
<td>16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crops</td>
<td>110</td>
<td>114</td>
<td>116</td>
<td>120</td>
<td>136</td>
<td>16</td>
</tr>
<tr>
<td>Livestock and products</td>
<td>106</td>
<td>124</td>
<td>125</td>
<td>119</td>
<td>140</td>
<td>21</td>
</tr>
<tr>
<td>Government payments</td>
<td>17</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>16</td>
<td>-2</td>
</tr>
<tr>
<td>Farm-related income</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>Nonfarm income</td>
<td>15</td>
<td>17</td>
<td>19</td>
<td>21</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>Value of inventory adjustment</td>
<td>-2</td>
<td>11</td>
<td>-1</td>
<td>-2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Total production expenses</td>
<td>290</td>
<td>210</td>
<td>223</td>
<td>233</td>
<td>258</td>
<td>17</td>
</tr>
<tr>
<td>% Change</td>
<td>5%</td>
<td>6%</td>
<td>4%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NET FARM INCOME</td>
<td>60</td>
<td>86</td>
<td>77</td>
<td>58</td>
<td>87</td>
<td>28</td>
</tr>
</tbody>
</table>

Strong revenue growth is offset by rising production expense, so net farm income remains flat, but very good from a historical perspective.

Ag Situation

- No WTO agreement has been negotiated
- Market access for U.S. is proposed in exchange for reducing subsidies to US producers (we must export)
- Does not eliminate the need to be WTO compliant, i.e.:
  - Brazilian cotton case
  - Canada corn case
  - Brazilian challenge to corn/ethanol subsidy ??
- US vulnerable, but rising prices makes WTO challenges by our competitors more difficult

2007 Farm Bill:
- Budget deficit
- WTO
- Renewable energy focus
- Fruits and vegetables at the table (West)
- Consumer, environmental, conservation interests
- More groups with different objectives makes it difficult to make progress

Retail Gasoline Prices

Source: EIA
Ag Situation
- Demand for ethanol driven by:
  - price of crude
  - infrastructure capacity
  - composition of the US fleet of cars

Ag Situation
- Supply of ethanol driven by:
  - price of corn
  - price of dried distillers
  - blenders credit/government subsidy (.51 \times 2.8 = $1.43/\text{bushel})
  - ethanol plant capacity
  - transportation capacity

Ag Situation
- Ethanol is the external shock to US agriculture
- Ethanol driving the entire agricultural sector

U.S. Ethanol Biorefinery Locations

Ethanol
- In 2006 ethanol price was driven by its value added to gasoline: oxygenate supply < demand
- In 2007 ethanol price reflects supply > demand
- We believe blending capacity limits effective demand and will cause ethanol price to move to its variable cost of production

Ethanol
- When prices reach the variable cost of production, supply will be limited as ethanol grind is stopped such that supply = demand
- Ethanol blending capacity will increase over time, but infrastructure may take 18 months to build
- New capacity continues to come on stream, so prices may stay at VCP for 2-3 years
Ethanol Production Capacity and Demand

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity</th>
<th>Demand</th>
<th>Demand % of Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>5,747</td>
<td>6,276</td>
<td>(529) 109%</td>
</tr>
<tr>
<td>2007</td>
<td>8,400</td>
<td>7,400</td>
<td>1,000  88%</td>
</tr>
<tr>
<td>2008</td>
<td>11,900</td>
<td>10,100</td>
<td>1,800  85%</td>
</tr>
<tr>
<td>2009</td>
<td>13,000</td>
<td>12,100</td>
<td>900    93%</td>
</tr>
<tr>
<td>2010</td>
<td>13,500</td>
<td>14,100</td>
<td>(600) 104%</td>
</tr>
</tbody>
</table>

High Level Observations

- Ethanol demand for corn will cause crop prices to be strong for 2-3 years, even if ethanol production capacity slows dramatically.
- Livestock numbers will remain relatively constant as producers wait to see how the ethanol issue impacts the livestock industry.
- Potential exists for livestock industry to shrink 3-5%.
- Worst nightmare scenario = Drought.

What About Cellulosic Ethanol?

- Technology and cost are limiting factors.
- Current technology for cellulosic ethanol is the acid hydrolysis process.
- Capital costs are almost 4X that of dry mill ethanol.
- Operating costs are 50% above corn dry mill costs.
- Enzymatic process holds promise for lower costs, but is not yet commercialized.
- Cellulose ethanol may happen, but large scale production not likely before 2015.

What About Biodiesel?

- SBO is used for human consumption.
- Do not have excess supply of SBO.
- SBO prices above 30 cents makes biodiesel a challenge.
- We believe the US will have excess biodiesel capacity.

Figure 5

Corn use for ethanol production shows a larger expansion in 2007 projections.

Billion bushels

Crop year

Note USDA is expecting broilers per capita to flatten

Issues to consider:

- Corn in ethanol
  - 8 bg/2.8 = 2.857 B bushels current
  - 14 bg/2.8 = 5.000 B bushels 2015
  = Additional 19MM acre
- Corn economics
  - w/blender w/o blender
  - $70 oil = $4.00 $2.50
  - $50 oil = $3.00 $1.50
Issues to consider:

Livestock:
- Food market is global
  - Expect rising exports of meat
  - China, India, on demand front
  - Brazil, Argentina, on supply side
  - New Zealand on milk supply
- Feed cost is now driven by linkage of corn to energy value - competition for input
- Input costs become more volatile due to corn

Livestock:
- Industry size may see a 5% reduction
- Industry location
  - Some movement of cattle feedlots to western corn belt
  - Movement of hogs from Southeast to Midwest accelerated
- We do not see major changes in industry location
- We do see changes in the relative level of profitability of poultry, pork, and beef producers in different geographic locations

Issues to consider:

Livestock
- Past - exports were the shock absorber
- Future - ethanol plants will operate as long as they cover variable cost
- Livestock must compete with ethanol for grain - livestock becomes bigger shock absorber
- If livestock can not adjust rapidly, industry swings become greater - volatility
- Increased liquidity & solvency needed
- Livestock sector is likely to be more engaged in discussion/debate regarding next attempt to increase ethanol mandate level

Risk Management
- At higher price levels, the government does not provide a price “floor”
- Sales/price management results may differ widely from producer to producer
- Increased investment in crop production increases producer’s investment risk
- Crop insurance may be less available/less subsidized coming out of 2007 farm bill

Farm Structure
- Most farms do not have the financial leverage which caused so much of a problem in the 1980s
- Interest rates are unlikely to repeat 1980s unless the dollar would collapse - possible - but unlikely
- Most producers today own only a part of their operation. They cash rent/lease a good part of their acreage. While producers are less financially leveraged, they are more exposed to operational risks through cash rent
- Risk management skills very important

Transportation
- Ethanol production creates a problem: cannot ship by pipe line
  - Railroad ton miles increase from 90MM to 150MMT, or 65% over 10 years ...6.5% increase per year
  - Ethanol and dry distiller grains (27MM tons)
  - Rail congestion/rail car productivity/unit train infrastructure
- Changing economics are expected as railroads increase freight rates
Issues to consider:

- Consumer confidence has been strong
- Rising gasoline, food, interest rates may weaken consumer purchasing power
- Weak/lower real estate may impact confidence
- Will meat/protein demand remain strong?

Summary

- Agriculture is in excellent financial condition
- Ethanol has been an external shock, raising farm income and optimism in rural America
- Ethanol future remains uncertain as it is largely dependent upon government policy and subsidies
- Global demand for food appears strong and should strengthen as the dollar declines
- Asset values reflect rising income and continued growth of income
- Expectations are subject to change
- Let’s enjoy the “Good Times” and work to maintain a strong agricultural sector