Presentation by:
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“A Global Perspective on Agriculture: Transitioning to a New Normal?”
USDA Agriculture Outlook Forum 2013
Assessing the future requires understanding what has driven the past and sorting out the transitional elements from the underlying structural drivers.
Commodity Markets Will Continue to Seek a New Normal as Economic Turmoil Subsides

Agriculture commodity index (2005=100)

Data source: World bank

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Long Term USDA Projections of Net Cash Income Indicate a New Plateau

Net Farm Cash Income

Assumes current farm bill and too little volatility!

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Five Years of Economic and Political Turmoil Will Give Way to A New Environment

The last five years 2008-2012:
Global financial crisis (Lehman)
Recessions/rising fiscal deficits
Massive liquidity infusion/near-zero interest rates / weak U.S. dollar.
Rapid growth in emerging markets and rising middle class.
Rising energy prices
Rapid growth in biofuels linking ag commodities to oil. Investor funds diverted to commodities
Multi-year weather related crop shortfalls and low grain stocks.

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Fragile Global Economy Driven by China / Emerging Markets; Euro / U.S. Are Risks

Percent change in annual world growth (purchasing-power parity rates)

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Central Banks Have Added $5-7 Trillion to Balance Sheets Relative to Economies

Federal Reserve (U.S.)
- 2007 levels: 6.1%
- 2012 levels: 19.2%

European Central Bank
- 2007 levels: 10.3%
- 2012 levels: 24.1%

Bank of England
- 2007 levels: 5.4%
- 2012 levels: 26.9%

Bank of Japan
- 2007 levels: 19.3%
- 2012 levels: 33.7%

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Export Markets Played Key Role in 1970-80; Exports and Bio-Fuels in 2002-12

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
# U.S. Grains, Meats & Dairy Exports Focused on Asia: Markets That Rely on U.S. / European Growth

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Percent of U.S. production exported (3 year avg.)</th>
<th>U.S. export destinations (top 7) (5 year average)</th>
<th>Top 7 as percent of total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total grains and oilseeds</td>
<td>24%</td>
<td>Japan, Nigeria, Mexico, Egypt, Philippines, S. Korea, Iraq</td>
<td>52%</td>
</tr>
<tr>
<td>Wheat</td>
<td>53%</td>
<td>Japan, Nigeria, Mexico, S. Korea, Egypt, Taiwan, S. Korea, China</td>
<td>76%</td>
</tr>
<tr>
<td>Corn</td>
<td>13%</td>
<td>Japan, Mexico, S. Korea, Taiwan, Egypt, Canada, China</td>
<td>85%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>45%</td>
<td>China*, Mexico, Japan, Taiwan, Indonesia, Germany, Egypt</td>
<td>84%</td>
</tr>
<tr>
<td>Cotton</td>
<td>76%</td>
<td>China*, Turkey, Mexico, Viet Nam, Taiwan, Indonesia, Thailand</td>
<td>84%</td>
</tr>
<tr>
<td>Rice</td>
<td>16%</td>
<td>Mexico, Japan, Canada, Haiti, Saudi Arabia, S. Korea, Jordan</td>
<td>66%</td>
</tr>
<tr>
<td>Total meat</td>
<td>17%</td>
<td>Japan, Mexico, Canada, China*, S. Korea, Russia, Australia</td>
<td>89%</td>
</tr>
<tr>
<td>Pork</td>
<td>23%</td>
<td>Japan, Mexico, Canada, China*, S. Korea, Russia, Australia</td>
<td>89%</td>
</tr>
<tr>
<td>Beef</td>
<td>10%</td>
<td>Canada, Mexico, Japan, S. Korea, China*, Russia, Taiwan</td>
<td>83%</td>
</tr>
<tr>
<td>Broilers</td>
<td>19%</td>
<td>Russia, China*, Canada, Mexico, Cuba, Angola, Taiwan</td>
<td>58%</td>
</tr>
<tr>
<td>Turkeys</td>
<td>13%</td>
<td>Mexico, China*, Canada, Dominican, Taiwan, Panama, Guatemala</td>
<td>81%</td>
</tr>
<tr>
<td>Total dairy</td>
<td>17%</td>
<td>Mexico, Canada, China*, Japan, Philippines, Indonesia, S. Korea</td>
<td>62%</td>
</tr>
<tr>
<td>Total Ag Trade</td>
<td></td>
<td>Asia, N. America, EU-27, M. East, S. America, N. Africa, Caribbean</td>
<td>92%</td>
</tr>
</tbody>
</table>

* China and Hong Kong

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
China and India will account for 70% of the increase in the middle class from 2000-2030. Their “ability to pay” will set global market prices!

- Income growth (source?)
- Market access (protectionism)
- Political decisions (inward?)

But it is not a straight line growth path!!! Significant volatility will prevail around the growth path!
Ethanol Now Consumes Around 5 billion Bushels of Corn!

Ethanol

Feed and residual

Exports

DDG’s

Food, seed & industrial

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Commodity Linkages to Oil are Function of Renewable Fuels and Market Speculation

Index (average 2000=100)

Brent crude oil  Soybean oil  Corn

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Rising and Volatile Oil Prices Have Been Part of Every Commodity Realignment

Dollars per barrel; spot price quarterly average

- Yon Kipper war and Arab oil embargo
- Iranian revolution and Iran-Iraq war in 1980.
- Iran invasion of Iraq in 1990
- Financial crisis recession
- September 11, 2001 terrorist attacks

Sharply rising global demand for oil to fuel U.S. and Asian growth.

Deflator is producer price index for all commodities

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Global Acreage Increased by 42 Million Acres But Weather Has Limited Production

- Acreage harvested
  - U.S. .....2011 & 2012: +3%
  - FSU ......2010 & 2012
  - S. America .. 2008 & 2011

- Production*
  - World: +7%
  - Foreign: +13%

Major crop shortfalls
- U.S. .....2011 & 2012
- FSU ......2010 & 2012
- S. America .. 2008 & 2011

* includes wheat, coarse grains and soybeans

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Value of U.S. Dollar Increased in 2012 Largely Against Euro and Yen; Weaker Against Asia

Indexes of major currencies/US$ (March 1973=100)

- Dollar declined by 25% after floating in 1973!
- A surge as Europe melted!
- From August 2011 ............... +6 %
- From 1997-03 average .... -27%

* Currencies weighted by relative market importance to total U.S. trade.

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Japan’s Dramatic Currency Realignment Could Trigger Competitive Devaluations

Indexes of currencies/US$ with January 1999=100

Currency changes
Feb 2012 to Feb 2013

Japan -18%
China +1%
Euro +2%
S. Korea +3%

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
# Five Years of Economic and Political Turmoil Will Give Way to A New Environment

## The last five years 2008-2012:
- Global financial crisis (Lehman)
- Recessions/rising fiscal deficits
- Massive liquidity infusion/near-zero interest rates / weak U.S. dollar.
- Rapid growth in emerging markets and rising middle class.
- Rising energy prices
- Rapid growth in biofuels linking ag commodities to oil. Investor funds diverted to commodities
- Multi-year weather related crop shortfalls and low grain stocks.

## The next five years 2013-2017:
- Sovereign debt/solvency issues
- Subdued growth/fiscal austerity
- Declining liquidity /rising interest rates as growth rate recovers./ U.S dollar weak against Asian markets
- Tempered growth in emerging markets; rising middle class
- New energy paradigm; prices ?
- Peaking in biofuels growth; ag commodities reducing link to oil. Investor funds exiting commodities.
- Grain stock rebuilding? (weather); catalyst to finding new normal!

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**Chart source:** Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
American Taxpayer Relief Act of 2012 Reduces Deficit If Sequestration Occurs; Debt Rises

Deficit in billion dollars

Assumptions:
✓ phase-out in Iraq/ Afghanistan
✓ American Taxpayer Relief Act of 2012
✓ Sequestration

Source: Congressional Budget Office (February, 2013), BEA and Treasury Department and forecast

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Energy Policy Transitions Could Be Major Wildcard for Agriculture Going Forward

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
South American Crops, Global Economy and 2013 U.S. Crops Shape Realignment

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Continued Low Global Grain Stocks Will Drive 2013 Marketplace

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Global Soybean Stocks Rely on Record S. American Crop

Million metric tons of soybeans

Stocks-to-use percentage

Ending stocks

Stocks-to-use

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
## Large Planted Acreages Will Boosts 2013 Production Potential

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corn</strong></td>
<td>86.4</td>
<td>88.2</td>
<td>91.9</td>
<td>97.2</td>
<td>98 - 100</td>
</tr>
<tr>
<td><strong>Soybeans</strong></td>
<td>77.5</td>
<td>77.4</td>
<td>75.0</td>
<td>77.2</td>
<td>78 - 79</td>
</tr>
<tr>
<td><strong>Wheat</strong></td>
<td>59.2</td>
<td>53.6</td>
<td>54.4</td>
<td>55.7</td>
<td>56 - 58</td>
</tr>
<tr>
<td><strong>Upland Cotton</strong></td>
<td>9.0</td>
<td>11.0</td>
<td>14.7</td>
<td>12.3</td>
<td>10 - 11</td>
</tr>
<tr>
<td><strong>7 other crops</strong></td>
<td>20.7</td>
<td>20.4</td>
<td>17.0</td>
<td>20.7</td>
<td>19 - 21</td>
</tr>
<tr>
<td><strong>Hay harvested</strong></td>
<td>59.8</td>
<td>59.8</td>
<td>55.7</td>
<td>56.3</td>
<td>58 - 60</td>
</tr>
<tr>
<td><strong>All crops</strong></td>
<td>312.3</td>
<td>312.0</td>
<td>307.4</td>
<td>318.4</td>
<td>318 - 320</td>
</tr>
<tr>
<td><strong>CRP</strong></td>
<td>33.7</td>
<td>31.3</td>
<td>31.1</td>
<td>29.5</td>
<td>27 - 28</td>
</tr>
</tbody>
</table>

* barley, oats, sorghum, rice, sunflowers, peanuts and canola
** adjusted for double cropping

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Continuing Drought Concerns Limit Optimism
Protein and Dairy Sectors Realigning and Trying to Bridge to 2013/14 Crops

Feed Costs:
- Low stocks
- Rising price volatility
- Yield/weather issues
- Ethanol

Export Reliance:
- Emerging markets
- Disease (FMD)
- U.S. $ rebound
- Rising competition
- Trade disputes

Are balance Sheets Strong Enough?  
(Hope is not a strategy for feed costs!)
Liquidation Phase of Cattle Cycle
Signaling Less Beef Output

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Protein Complex Cautious in Face of Weak Economy and High Feed Costs

Billion pounds

<table>
<thead>
<tr>
<th></th>
<th>Change in 2012</th>
<th>Change in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broilers</td>
<td>-0.4</td>
<td>+0 to +1%</td>
</tr>
<tr>
<td>Beef</td>
<td>-1</td>
<td>-3 to -4%</td>
</tr>
<tr>
<td>Pork</td>
<td>+2</td>
<td>+1 to 2%</td>
</tr>
</tbody>
</table>

Percent change in total meat output

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3.2%</td>
<td>1.3%</td>
<td>0.7%</td>
<td>0.2%</td>
<td>-1 to +1</td>
</tr>
</tbody>
</table>

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Rising Crop Prices and Lagging Livestock and Dairy Prices Imply Needed Realignment

Index (1990-92=100)

Sector is operating at higher price and cost levels with greater volatility … more working capital to play, less leverage permitted and more emphasis on well-defined risk management policies!

Prices received: crops

Prices paid*

Prices received: livestock

*Prices paid commodities & services, interest, taxes and wage rates

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Price Volatility and Risk Management Will Remain; Timely Rain Markets

<table>
<thead>
<tr>
<th></th>
<th>Corn</th>
<th>Soybeans</th>
<th>Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>Low</td>
<td>High</td>
<td>Range</td>
</tr>
<tr>
<td>2007</td>
<td>3.09</td>
<td>4.57</td>
<td>1.48</td>
</tr>
<tr>
<td>2008</td>
<td>3.06</td>
<td>7.65</td>
<td>4.60</td>
</tr>
<tr>
<td>2009</td>
<td>3.02</td>
<td>4.50</td>
<td>1.48</td>
</tr>
<tr>
<td>2010</td>
<td>3.24</td>
<td>6.30</td>
<td>3.06</td>
</tr>
<tr>
<td>2011</td>
<td>5.72</td>
<td>8.00</td>
<td>2.28</td>
</tr>
<tr>
<td>2012</td>
<td>5.51</td>
<td>8.44</td>
<td>2.93</td>
</tr>
<tr>
<td>2008-12</td>
<td>4.11</td>
<td>6.98</td>
<td>2.87</td>
</tr>
</tbody>
</table>

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Farm Bill Shifts May Moderate Downside But Production Increases Will Fuel Transition

Net Farm Cash Income

Billion dollars

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
Farm Debt Leveraging Has Not Followed Land Prices Higher

Chart source: Knowledge Exchange Division, CoBank, ACB (confidential and proprietary)
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