Main themes for 2016

1. The macroeconomy is weighing on trade, but there are reasons for optimism.
2. Record crop harvests have led to stock building and downward pressure on prices.
3. Farm income and farmland values are adjusting.
World GDP growth slows, compared to last year’s projections, most notably in China

Source: USDA.
Falling prices for primary inputs

Source: Eikon/Datastream, USDA-OCE.
U.S. GDP growth and real ag trade-weighted exchange rate up through 2017

% change

2010 = 100

Data: USDA-OCE.
Dollar has appreciated against currencies of its customers, especially in 2015

Dollar has appreciated against competitor currencies, especially in 2014 and 2015

The price of soybeans in dollars and reais

US$ per bushel

R$ per bushel

Price in Brazilian reais (right axis)

Price in US dollars (left axis)

Source: USDA – AMS.
Median household income growth rises more rapidly for farm households

Data: USDA-ERS.
Domestic consumption of agricultural products

Source: OECD Producer and Consumer Support Estimates database, using USDA production and consumption data.
Ag Trade Outlook
Decline in agricultural exports expected in 2016 --- China share falls in value

Source: USDA. Data are fiscal year.
China imports to rise, but more slowly than last year: soybeans up, grains down, cotton down

Combined imports of grains, soybeans, and cotton.

Last year's projection

This year's projection

Source: USDA.
Projections for Brazil’s exports for corn and soybeans both increase from last year

Million metric tons

Exports of soybeans and corn

This year’s projection

Last year’s projection

Source: USDA.
Global trade growth is expected to continue

Million metric tons

Soybeans and products

Wheat

Coarse Grains

Source: USDA.
Expanding U.S. ag exports through FTAs

*TPP partners include Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam.

*TTIP partner is EU-28.

Exports $133 billion
Imports $113.5 billion
Total $246.5 billion

U.S. Ag Trade

U.S. exports $57.2 billion
U.S. imports $58.1 billion

TPP* Ag Trade

Total TPP-11 trade $403 billion

TTIP* Ag Trade

Total EU trade $291 billion

Source: USDA, European Commission. CY2014/2015 trade data.
FTAs help level the playing field – Japan beef

Change from Baseline (2012-14 avg.)

- **US**: $26.5 mil.
- **Australia**: $105.9 mil.
- **ROW**: $2.3 mil.

Change from baseline (JAEPA)

- **US**: $131.52 mil.
- **Australia**: $17.7 mil.
- **ROW**: $-88.5 mil.

Source: USDA-ERS.
U.S. Ag Exports, 2014

Cuba

$286.4 million

- Corn
- Soybean Meal
- Poultry
- Other

Dominican Republic

$1.29 billion

- Wheat
- Soybean Meal
- Beef
- Poultry
- Condiments
- Tobacco
- Eggs
- Pork
- Dairy
- Other

Data: USDA.
Outlook for Crops
Global production outstripping consumption

Source: USDA-OCE.
Global ending stocks edge up

Source: USDA.
China policies build stocks

Percent of Global Stocks

Source: USDA, PSD database
Corn, wheat, and soybean prices soften, but still above 2000-2003 average

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>3.1</td>
<td>7.2</td>
<td>7.8</td>
<td>6.9</td>
<td>6.0</td>
<td>5.0</td>
<td>4.20</td>
</tr>
<tr>
<td>Corn</td>
<td>2.1</td>
<td>6.2</td>
<td>6.9</td>
<td>4.5</td>
<td>3.7</td>
<td>3.6</td>
<td>3.45</td>
</tr>
<tr>
<td>Soybeans</td>
<td>5.5</td>
<td>12.5</td>
<td>14.4</td>
<td>13.0</td>
<td>10.1</td>
<td>8.8</td>
<td>8.50</td>
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<tr>
<td>Upland Cotton</td>
<td>46.5</td>
<td>88.3</td>
<td>72.5</td>
<td>77.9</td>
<td>61.3</td>
<td>59.5</td>
<td>58.0</td>
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<tr>
<td>All Rice</td>
<td>5.6</td>
<td>14.5</td>
<td>15.1</td>
<td>16.3</td>
<td>13.3</td>
<td>12.9</td>
<td>12.90</td>
</tr>
</tbody>
</table>

Source: USDA-NASS, OCE.

Red denotes record high.
Last year’s prices point towards a fall in area

Price Index (2004 = 100) vs Million Aces Planted

8-crop index of lagged real area-weighted prices (left axis)

8-crop planted acres (right axis)

Cropland area expected to remain high in 2016, but down again from last year

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</thead>
<tbody>
<tr>
<td>Corn</td>
<td>91.9</td>
<td>97.3</td>
<td>95.4</td>
<td>90.6</td>
<td>88.0</td>
<td>90.0</td>
<td>2.3%</td>
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<tr>
<td>Soybeans</td>
<td>75.0</td>
<td>77.2</td>
<td>76.8</td>
<td>83.3</td>
<td>82.7</td>
<td>82.5</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Wheat</td>
<td>54.3</td>
<td>55.3</td>
<td>56.2</td>
<td>56.8</td>
<td>54.6</td>
<td>51.0</td>
<td>-6.7%</td>
</tr>
<tr>
<td>All cotton</td>
<td>14.7</td>
<td>12.3</td>
<td>10.4</td>
<td>11.0</td>
<td>8.6</td>
<td>9.4</td>
<td>9.6%</td>
</tr>
<tr>
<td>M. feedgrains</td>
<td>10.4</td>
<td>12.6</td>
<td>14.6</td>
<td>12.9</td>
<td>15.1</td>
<td>13.4</td>
<td>9.1%</td>
</tr>
<tr>
<td>Rice</td>
<td>2.7</td>
<td>2.7</td>
<td>2.5</td>
<td>3.0</td>
<td>2.6</td>
<td>2.8</td>
<td>7.1%</td>
</tr>
<tr>
<td><strong>Total 8 crops</strong></td>
<td>249.0</td>
<td>257.4</td>
<td>255.9</td>
<td>257.6</td>
<td>251.6</td>
<td>249.1</td>
<td>-1.0%</td>
</tr>
<tr>
<td><strong>CRP</strong></td>
<td>31.1</td>
<td>29.5</td>
<td>26.8</td>
<td>25.5</td>
<td>24.2</td>
<td>23.7</td>
<td>-2.1%</td>
</tr>
<tr>
<td><strong>8 crops + CRP</strong></td>
<td>280.2</td>
<td>286.9</td>
<td>282.8</td>
<td>283.2</td>
<td>275.8</td>
<td>272.8</td>
<td>-1.1%</td>
</tr>
</tbody>
</table>

Source: USDA-OCE.

¹All cotton, includes both upland and ELS cotton.
Outlook for Livestock and Dairy
Beef, pork, and poultry production higher in 2016

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</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>26.2</td>
<td>25.9</td>
<td>25.7</td>
<td>24.3</td>
<td>23.7</td>
<td>24.6</td>
<td>3.8</td>
</tr>
<tr>
<td>Pork</td>
<td>22.8</td>
<td>23.3</td>
<td>23.2</td>
<td>22.8</td>
<td>24.5</td>
<td>25.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Broilers</td>
<td>37.2</td>
<td>37.0</td>
<td>37.8</td>
<td>38.6</td>
<td>40.0</td>
<td>41.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>92.8</td>
<td>93.0</td>
<td>93.3</td>
<td>92.2</td>
<td>94.6</td>
<td>97.4</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Billion Pounds

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</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>196.3</td>
<td>200.6</td>
<td>201.2</td>
<td>206.0</td>
<td>208.5</td>
<td>211.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Source: USDA.

Data in red denote record levels.
Herd rebuilding continues

Source: USDA-NASS.
Meat exports expected to increase

Source: USDA-OCE.
Dairy exports reflect continued demand weakness and large global supplies

Source: USDA.
HPAI mortality approached 50 million birds

Source: USDA-APHIS
Cattle, Hog, dairy, and broiler prices expected to come down from 2015

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<tr>
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</thead>
<tbody>
<tr>
<td>Dollars per cwt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steers</td>
<td>114.7</td>
<td>122.9</td>
<td>125.9</td>
<td>154.6</td>
<td>148.1</td>
<td>137.3</td>
<td>-7.3</td>
</tr>
<tr>
<td>Hogs</td>
<td>66.1</td>
<td>60.9</td>
<td>64.1</td>
<td>76.0</td>
<td>50.2</td>
<td>47.3</td>
<td>-5.9</td>
</tr>
<tr>
<td>Broilers</td>
<td>79.9</td>
<td>86.6</td>
<td>99.7</td>
<td>104.9</td>
<td>90.5</td>
<td>87.5</td>
<td>-3.3</td>
</tr>
<tr>
<td>Milk</td>
<td>20.1</td>
<td>18.5</td>
<td>20.1</td>
<td>24.0</td>
<td>17.1</td>
<td>15.7</td>
<td>-8.4</td>
</tr>
</tbody>
</table>

Source: USDA-OCE. Prices in red denote record levels.
Outlook for the Farm Sector

http://www.hoosieragtoday.com/indiana-cash-rent-up-3-per-acre-in-2014/
Net farm income is down, but debt-to-asset ratio remains low

Data: USDA-ERS.
### Illinois case shows crop budgets tightening

<table>
<thead>
<tr>
<th></th>
<th>Corn After Soybeans</th>
<th>Soybeans After Corn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fertilizers and pesticides</strong></td>
<td>$190.00</td>
<td>$75.00</td>
</tr>
<tr>
<td><strong>Seed</strong></td>
<td>$122.00</td>
<td>$76.00</td>
</tr>
<tr>
<td><strong>Crop insurance and other direct costs</strong></td>
<td>$55.00</td>
<td>$23.00</td>
</tr>
<tr>
<td><strong>Machinery and power</strong></td>
<td>$124.00</td>
<td>$113.00</td>
</tr>
<tr>
<td><strong>Total non-land costs</strong></td>
<td>$558.00</td>
<td>$348.00</td>
</tr>
<tr>
<td><strong>Yield</strong></td>
<td>201.00</td>
<td>58.00</td>
</tr>
<tr>
<td><strong>Price</strong></td>
<td>$3.45</td>
<td>$8.50</td>
</tr>
<tr>
<td><strong>ARC-CO</strong></td>
<td>$30.00</td>
<td>$30.00</td>
</tr>
<tr>
<td><strong>Crop Revenue</strong></td>
<td>$723.45</td>
<td>$523.00</td>
</tr>
<tr>
<td><strong>Revenue to cover rent and salary</strong></td>
<td><strong>$165.45</strong></td>
<td><strong>$175.00</strong></td>
</tr>
<tr>
<td><strong>Cash Rent for Illinois</strong></td>
<td>$228</td>
<td>$228</td>
</tr>
</tbody>
</table>

Source: USDA-NASS, Univ. of Illinois.
Farm debt continues to increase at commercial banks

Source: Kauffman, Cowley, and Clark (2016)
Data: Federal Reserve Board of Governors.
Delinquency rates on farm loans fall

Source: Kauffman, Cowley, and Clark (2016)
Data: Federal Reserve Board of Governors.
Land values flatten, falling in some areas

Y-o-Y % change

Data: 7th district and Iowa, Chicago Federal Reserve; and Ranchland, K.C. Federal Reserve
Capitalized land value still far above actuals

Data: USDA-NASS, St. Louis Fed.
ARC-CO 2014 payment rates for corn minus 2008 Direct Payment rates reflect effects of yield variations on revenue

Source: USDA-FSA.
Crop insurance continues to play a critical role in farmers’ risk management plans

<table>
<thead>
<tr>
<th>2015 Crop</th>
<th>Percent of Planted Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAT</td>
</tr>
<tr>
<td>Corn</td>
<td>3%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>3%</td>
</tr>
<tr>
<td>Wheat</td>
<td>4%</td>
</tr>
<tr>
<td>Cotton</td>
<td>6%</td>
</tr>
<tr>
<td>Rice</td>
<td>17%</td>
</tr>
<tr>
<td>Potatoes</td>
<td>42%</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>4%</td>
</tr>
<tr>
<td>Peanuts</td>
<td>9%</td>
</tr>
<tr>
<td>Barley</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: RMA
Outlook for Food Prices
Food CPI remains low

ERS forecast: 2.0-3.0% for 2016

Data: BLS.
Meat price inflation falls 15 points y-o-y

Year-over-Year Change (%)

Cereal and Baked Goods

Meats

F&V

Data: BLS.
Productivity growth continues long rise

1998 = 1  Index of change in output

- MILK per COW
- PIGS per Litter
- CORN (BU / ACRE)
- TOMATOES (TONS / ACRE)
- POTATOES (CWT / ACRE)

Data: USDA-NASS.