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Agricultural Economic Update

The views expressed are those of the author and do not necessarily reflect the opinions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
Overview

• The farm economy appears to be softening.
  • Lower profit margins, and projected losses, are persisting in the crop sector.
  • Yet, livestock operations have been profitable.

• Understanding why crude oil prices have fallen is key to understanding agriculture’s economic environment.

• Farmland values have mostly remained steady, but also depend on the economic environment.
Crop prices remain low, while cattle prices may have reached a turning point.

U.S. Crop Prices

Dollars per bushel

U.S. Livestock Prices

Dollars per hundredweight

Sources:

Federal Reserve Bank of Kansas City – Omaha Branch
Regional, Public, Community Affairs Division
www.kansascityfed.org/omaha

Source: Wall Street Journal

Sources: Wall Street Journal
Ranchers have experienced perhaps their best year ever, as inventories turn up.

Cow-Calf Returns and Cattle Inventory

Source: Livestock Marketing Information Center (LMIC) and USDA
U.S. farm income, recently near record highs, is projected to drop again in 2015.

### U.S. Real Net Farm Income

<table>
<thead>
<tr>
<th>Year</th>
<th>Billion Dollars (Constant 2009 Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td></td>
</tr>
<tr>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
</tr>
</tbody>
</table>

Source: USDA

* Forecast for 2015.
Crop revenue has declined significantly since 2012, but costs have not yet adjusted.

U.S. Crop Cash Receipts and Input Costs

Percent change from 2007 levels

Source: USDA
Weaker cash flows and record feeder cattle prices have boosted farm loan volumes.

U.S. Non-Real Estate Farm Loan Volumes

Source: Federal Reserve Bank of Kansas City
Reduced farm income underlies sluggish income growth in crop-dependent states.

**U.S. Personal Income Growth by State**

2014 Q3

% change from previous year

- **0% to 1.0%**
- **1.1% to 2.0%**
- **2.1% to 3.0%**
- **3.1% to 4.0%**
- **4.1% to 5.0%**
- **5.1% to 6.0%**

Source: Bureau of Economic Analysis
Machinery sales have been hit particularly hard.

U.S. Combine and 4WD Tractor Sales

Cumulative Unit Sales

- 2012
- 2013
- 2014

Source: Association of Equipment Manufacturers
What is the potential effect of the drop in energy prices on U.S. agriculture?

U.S. Crude Oil and Gasoline Prices

Source: Wall Street Journal and EIA
Profitability of ethanol production has become less optimistic.

U.S. Ethanol Market Price Incentives

Market Prices Favor Ethanol Contraction

Market Prices Favor Ethanol Expansion
Why did oil prices fall?
Increased supply or less demand?
Increased global supply has primarily come from the U.S.

Global Production of Petroleum and Other Liquids

Source: Energy Information Administration
On the demand side, global economic growth faltered in 2014.

**Annual Real GDP Growth**

Source: Haver Analytics

Note: Numbers in parentheses indicate each region's share of global real GDP in PPP.
In the long-term, a rising population and expanding incomes are often cited as key demand factors for ag.

### World Population Projection

- **Billions**
  - **1950**
  - **1970**
  - **1990**
  - **2010**
  - **2030**
  - **2050**

### Size of the Middle Class

<table>
<thead>
<tr>
<th>Region</th>
<th>Millions of People</th>
<th>2009</th>
<th>Global Share</th>
<th>2030</th>
<th>Global Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>338</td>
<td>18%</td>
<td></td>
<td>322</td>
<td>7%</td>
</tr>
<tr>
<td>Europe</td>
<td>664</td>
<td>36%</td>
<td></td>
<td>680</td>
<td>14%</td>
</tr>
<tr>
<td>Central and South America</td>
<td>181</td>
<td>10%</td>
<td></td>
<td>313</td>
<td>6%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>525</td>
<td>28%</td>
<td></td>
<td>3,228</td>
<td>66%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>32</td>
<td>2%</td>
<td></td>
<td>107</td>
<td>2%</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>105</td>
<td>6%</td>
<td></td>
<td>234</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, International Database

Source: World Bank
In the near-term though, softer global economic growth raises questions about U.S. ag export strength.

U.S. Agricultural Exports

Billion Dollars (Constant 2009 Dollars)

Source: USDA

* China’s share of total U.S. agricultural exports in parentheses.
Will the U.S. stay competitive in global export markets?

Currency Exchange Rates

Index (Jan 2009 = 100)

Sources: FRB, IMF, Haver Analytics
The outlook for monetary policy depends crucially on the economic outlook.

The Fed’s Dual Mandate

Sustainable Economic Growth

Price Stability
Interest rates remain at historic lows, with more attention shifting to the timing of “liftoff.”

Fed Funds and 10-Year Treasury Rates

Source: Haver Analytics
The U.S. economic recovery has recently gained steam.
Steady job gains have helped push down the U.S. unemployment rate.

U.S. Non-farm Payroll Employment

Source: Bureau of Labor Statistics
Interest rates are still expected to move higher.

Appropriate Pace of Policy Firming

Target Federal Funds Rate at Year-End

Source: Federal Reserve Board, Summary of Economic Projections, December 2014
Note: Blue dots indicate FOMC participants, red dots indicate futures market expectations.
Farmland markets are watching interest rates carefully.
Farmland value gains have softened, but prices have largely remained steady.
Many analysts expect farmland values to soften/correct/drop.

Farmland Values and Potential Scenarios

Dollars per acre

Iowa Cropland Values
Iowa Capitalized Cropland Values

Source: USDA, Federal Reserve Bank of St. Louis, and author’s calculations.

Note: Iowa capitalized land values calculated as the Iowa cash rental rate divided by the 10-year Treasury Rate.
1: Capitalized = Actual. 2: Capitalized 15% less than actual. 3: Capitalized 30% less than actual.
Concluding Thoughts

- U.S. agriculture faces numerous risks in 2015.
  - Global economy
  - Exchange rates
  - Interest rates
  - Income statement / balance sheet
- Cash flow could soon start to become a more significant concern, especially if costs do not moderate.
- Maintaining **working capital** will be necessary, perhaps holding more than usual.
- Bankers need to know where their risks are.
“Responding to Future Food Demands”
July 14 – 15, 2015
Kansas City, MO