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November 13, 2013

Has the Pendulum Swung on U.S. Agriculture?

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.
Has the Pendulum Swung on U.S. Agriculture?

2011 2012 2013 2014

$\text{?? BUST ??}$
Crop production has rebounded from 2012.

U.S. Crop Production

Source: USDA
Divergence between crop and livestock prices has narrowed.

Agricultural Commodity Prices

Index (September 2003 = 100)

- Corn
- Fed Cattle
- Feeder Cattle

Source: Commodity Research Bureau
Speculators have reversed positions.

Managed Money Positions
Net Long Futures Contracts

Index (January = 100)

Source: CFTC
Initially similar to 2012, expected harvest prices for corn have drifted lower.

December Corn Futures Price

Dollars per Bushel

Source: barchart.com, Iowa State University

* Assumes yield of 165 bu/acre, corn following corn
Corn was very expensive two months ago in the Plains.

**Corn Basis, 08-28-2013**

\[ \text{Basis} = \text{Cash Price} - \text{Nearby Futures Price} \]

CBT Sept Futures Price: $5.04

<table>
<thead>
<tr>
<th>$/Bushel</th>
<th>1.90</th>
<th>1.34</th>
<th>1.26</th>
<th>1.19</th>
<th>1.11</th>
<th>1.06</th>
<th>.96</th>
<th>.81</th>
<th>.67</th>
<th>.35</th>
</tr>
</thead>
</table>

[www.agmanager.info](http://www.agmanager.info)

K-State Research and Extension
Since August, corn cash prices have fallen dramatically.

Corn Basis, 10-30-2013
Basis = Cash Price - Nearby Futures Price

CBT Dec Futures Price: $4.37

$/Bushel
- .52
- .06
- .12
- .16
- .18
- .22
- .24
- .31
- .40
- .61
Crop sector profits are projected to fall in 2014.

Net Returns
(Returns less variable costs)

Source: USDA Agricultural Baseline Projections, various years
Livestock profits are projected to rise in 2014.

Feed Price Ratios

Source: USDA Agricultural Baseline Projections
Cattle herds have been shrinking, especially in drought-stricken areas.

Cattle and Hog Inventories

Source: USDA
Beef processors have struggled to maintain profitability.

**Beef Packer Margins**

- **Dollars per Head**
- **Source:** University of Missouri

**Pork Packer Margins**

- **Dollars per Head**
- **Source:** University of Missouri
Crop producers face many potential risks in 2014 and beyond.

- Farm Incomes
- Farmland Values
- Agricultural Exports
- Global Competition
- Energy Policy
- Farm Debt
- Interest Rates
Farm incomes are projected to drop sharply in 2014.

U.S. Real Net Farm Income

Billion Dollars (Constant 2012 Dollars)

Source: USDA
Farmland value gains have moderated some, but not much.

Non-Irrigated Cropland Value Gains

Source: Federal Reserve District Agricultural Credit Surveys (Chicago, Minneapolis, Kansas City, Dallas)
Note: Tenth District (in orange) numbers reflect Third Quarter Gains. All other districts reflect second quarter gains.
Three consecutive years of +20 percent gains in farmland.

Tenth District Farmland Value Gains

Percent change from the previous year

Source: Federal Reserve Bank of Kansas City
Is farmland overvalued?

Cropland Value-to-Cash Rent Ratios

Percent change from previous year

- **Iowa Cropland**
- **Kansas Non-irrigated Cropland**

Investors will spend $32 for every dollar of revenue. Implies a capitalization rate of 3.1%

Source: NASS, USDA and Iowa State University
What is driving farmland values?

Factors Contributing to the Value of Farmland

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percent of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate environment</td>
<td>16%</td>
</tr>
<tr>
<td>Overall wealth level of farm sector</td>
<td>32%</td>
</tr>
<tr>
<td>Lack of alternative investment options</td>
<td>20%</td>
</tr>
<tr>
<td>Expectation of net farm income for 2013</td>
<td>13%</td>
</tr>
<tr>
<td>Expectation of net farm income for 2014 or later</td>
<td>7%</td>
</tr>
<tr>
<td>Land-lease revenue from mineral rights</td>
<td>4%</td>
</tr>
<tr>
<td>Real estate tax policies</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Federal Reserve Bank of Kansas City, Agricultural Credit Survey
Will export demand from China drive growth?

U.S. Agricultural Exports

Billion Dollars

Source: USDA
Note: 2013 agricultural exports forecast based on year-to-date 2013 annual growth rate.
* China’s share of total U.S. agricultural exports in parentheses.
Will the U.S. remain the low-cost producer?

Global Corn, Soybean, and Wheat Expansion

Acreage Index (2000 = 100)

Percent

U.S. Share of World Acreage (Right Scale)
U.S. (Left Scale)
Brazil & Argentina (Left Scale)
China (Left Scale)
Black Sea Region* (Left Scale)

* Black Sea Region includes Russia, Ukraine, and Kazakhstan
Source: USDA
What will future Renewable Energy Policy look like?

**U.S. Gasoline Consumption, Ethanol Production, and Mandates**

Billion Gallons

- **Blend Wall***
- **Ethanol Production**
- **2015 Mandate**

Billion Gallons

Source: Energy Information Administration.

* 10% of gasoline consumption
** Ethanol Production is net of trade
How will investments and debt respond to income changes?

U.S. Farm Profits and Capital Investments per Farm

Source: USDA
Interest rates are still expected to rise.

Appropriate Pace of Policy Firming
Target Federal Funds Rate at Year-End

Source: Federal Reserve Board, Summary of Economic Projections, September 2013
Conclusions

- Better than expected crop yields drive corn prices lower.
  - Softer crop sector profits
  - Strengthening livestock and ethanol profit margins

- In the transition to lower crop prices, there are risks to U.S. agriculture, possibly beyond 2014.
  - Farm incomes, farmland values, export markets, global competition, ethanol, farm debt, and interest rates

- Crop insurance is not designed to protect against multi-year risk.
For More Information on The Midwestern Economy and Rural America

www.kansascityfed.org/omaha