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Agriculture Outlook

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.
Setting the stage: The U.S. economy continues to advance slowly.

U.S. Real GDP Growth

Percent change from year ago

Change from previous quarter
Change from year ago

Calculations based on BEA and Blue Chip Forecast September 2013
Underlying the modest growth is a shift in market performance.

**Booming sectors plateau in 2012**
- Commodities
- Exports
- Manufacturing

**The Wildcards**
- Investment
- Government

**A Rebound in Household Spending**
- Housing
- Consumer Spending
In general, commodity prices have been falling.

Commodity Price Index

Source: Commodity Research Bureau
Income growth in the Central Plains is heavily reliant on commodity markets.

Difference between Per Capita Income Growth in Tenth Federal Reserve District and U.S.

Calculations based on BEA data
Are commodities driving a transition in U.S. agriculture?
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.

Feed Price Ratios

Source: USDA Agricultural Baseline Projections
Corn and crude oil production is ramping up.

U.S. Corn Inventories and Crude Oil Production

Source: USDA and EIA Short-Term Energy Outlook
Initially similar to 2012, expected corn prices have drifted lower.

Source: barchart.com, Iowa State University

* Assumes yield of 165 bu/acre, corn following corn
Livestock profitability has been poor, particularly in the cattle sector.

U.S. Livestock Prices and Breakeven Costs

Source: USDA and Iowa State University
Drought has remained a concern in the Western Plains.

U.S. Drought Monitor
September 24, 2013
Valid 7 a.m. EDT

Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional

Drought Impact Types:

Rainfall

Delineates dominant impacts

S = Short-Term, typically <6 months
(e.g. agriculture, grasslands)
L = Long-Term, typically >6 months
(e.g. hydrology, ecology)

The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/

Released Thursday, September 26, 2013
Author: Brad Rippey, U.S. Department of Agriculture
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**

<table>
<thead>
<tr>
<th>Year</th>
<th>Dollars per Head</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2012</td>
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</tr>
<tr>
<td>2013</td>
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10 Year Average: 155

**Pork Packer Margins**

<table>
<thead>
<tr>
<th>Year</th>
<th>Dollars per Head</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
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</tr>
<tr>
<td>2013</td>
<td>170</td>
</tr>
</tbody>
</table>

10 Year Average: 175

Source: University of Missouri
Could the transition in agriculture lead to a bust?
There are many potential risks.

- Farm Incomes
- Farmland Values
- Agricultural Exports
- Global Competition
- Energy Policy
- Farm Debt
- Interest Rates

Federal Reserve Bank of Kansas City – Omaha Branch
Regional, Public, Community Affairs Division

www.kansascityfed.org/omaha
Farm incomes are projected to drop sharply in 2014.

U.S. Real Net Farm Income

Billion Dollars (Constant 2012 Dollars)

Source: USDA
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
Will export demand from China strengthen?

U.S. Agricultural Exports

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. lose market share?

Global Corn, Soybean, and Wheat Expansion

Acreage Index (2000 = 100) vs. 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

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

-Thousand Dollars (2005 Dollars)

Net Returns to Farm Operators
(Left Scale)

Farm Capital Expenditures
(Right Scale)

Source: USDA
What would higher interest rates mean for agriculture?

Federal Reserve Balance Sheet: Assets

Billion Dollars

- Fed Agency Debt MBS Purchases
- Liquidity to Key Credit Markets
- Lending to Financial Institutions
- Long Term Treasury Purchases
- Traditional Security Holdings

Source: Federal Reserve Board of Governors
Conclusions

- Modest economic recovery continues, but in transition.
- Commodities drive a transition in U.S. agriculture.
  - Softer crop sector profits
  - Strengthening livestock profits, but cattle a concern
- In the transition, there are risks to U.S. agriculture, possibly beyond 2014.
  - Farm incomes, farmland values, export markets, global competition, ethanol, farm debt, and interest rates
- Working capital is key in managing through a downturn.
For More Information
on
The Midwestern Economy and Rural America

www.kansascityfed.org/omaha