Rural economies held up better during the “Great Recession”.

U.S. Employment by Metropolitan Status

Index (2007:Q4 = 100)

Source: USDA
Rising farm incomes spur capital spending.

U.S. Real Net Farm Income and Agricultural Equipment Sales

Percent change from year ago

Source: USDA and Association of Equipment Manufacturers
Note: 2011 Agricultural Equipment Sales are YTD through March
Good Quality (Non-irrigated) Farmland Values
(Percent change fourth quarter 2009 to fourth quarter 2010)

Source: Federal Reserve District Surveys (Chicago, Minneapolis, Kansas City, Dallas)
Does Everyone Win With Higher Commodity Prices?
Poorer nations and low-income populations struggle under high food prices.

Food Share of Household Expenditure by Country, 2009

- Pakistan: 45.7%
- Algeria: 43.9%
- Jordan: 40.9%
- Egypt: 38.8%
- China: 34.9%
- India: 32.4%
- Brazil: 24.6%
- Japan: 14.6%
- Germany: 11.4%
- Canada: 9.2%
- U.S.: 6.9%

Source: USDA
Dairy producers struggle with profits.

Net Returns to Milk Production

Dollars per hundredweight

Source: USDA
Despite higher incomes, farm loan delinquencies rose to their highest levels since the 1980s.

Delinquent Farm Loans Held by Insured Commercial Banks

Source: Agricultural Finance Databook, Federal Reserve Bank of Kansas City
Economic Gains Strengthen
Consumer spending rises further.

U.S. Monthly Retail and Food Sales

Billion dollars

Source: U.S. Census Bureau
First-time home buyers tax credits end and housing remains sluggish.

U.S. Existing Home Sales and Single-Family Housing Starts

Percent change from previous year (3 month moving average)

Source: Census Bureau
Business investment strengthens for equipment and software.

U.S. Non-residential Investment

Source: Census Bureau
U.S. exports have strengthened and the dollar has weakened.

Source: Bureau of Economic Analysis and Federal Reserve
Economic growth is expected to strengthen.

U.S. Real GDP Growth

Percent change from fourth quarter of previous year to fourth quarter of year indicated

Source: Bureau of Economic Analysis and Federal Reserve Board of Governors
Have Inflation Risks Changed?
The Federal Reserve has expanded the monetary base.
Inflation is based on money and velocity.

**Quantity Theory of Money**

\[ \text{Price} = \frac{\text{Money} \times \text{Velocity}}{\text{Quantity}} \]

**Definition of Inflation:**

Too much money \( M \uparrow \)

chasing \( V \uparrow \)

too few goods \( Q \downarrow \)
What Shapes Velocity?

- Bank Lending
- Consumer Spending
- Business Investment
When will excess reserves begin to decline?

Excess Reserves of Depository Institutions

<table>
<thead>
<tr>
<th>Jan-08</th>
<th>Jan-09</th>
<th>Jan-10</th>
<th>Jan-11</th>
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<td>1,600</td>
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</tbody>
</table>

Billion dollars

Source: Federal Reserve Board of Governors

Commercial Banks

Lend Money into the Economy

Hold Money in Excess Reserves at the Federal Reserve
Consumers prices are rising, especially for food and energy.

Source: Bureau of Economic Analysis
Labor markets need to strengthen further for additional “chasing”.

Nonfarm Employment Change and Unemployment Rate

Source: Bureau of Labor Statistics
The Lesson of the “Great Recession”: Rising Demand Lifts All Boats
Will Stronger Exports Drive Profits Higher?

U.S. Dairy Exports

Source: USDA
U.S. food spending has rebounded.

Retail Sales at Grocery Stores and Restaurants

Percent change from previous year

Source: USDA
What are the Risks for Agriculture?
Risk #1:
The Best Cure for High Prices is High Prices

Farmers Always Produce Themselves Out of Prosperity

- 2011: U.S. Acres Planted to Corn Up 4.3%
- 2020: U.S. Corn Yields Up 17 Percent

How Quickly Could Farm Incomes Fall?

- 2013: Average Annual Corn Price is $4.10
- 2013: Net returns above variable costs for corn fall 40% below today’s levels.

Source: USDA
Risk #2: Soaring Global Food and Energy Prices

World Food Prices and U.S. Gasoline Prices

Index (2002 to 2004 average = 100)

Source: Food and Agricultural Organization of the United Nations and Energy Information Administration
Risk #3: Higher interest rates slow the Chinese economy.

China’s Inflation and Interest Rates

Percent

Percent change from year ago

Percent

Interest Rate on One Year Deposits (Left Scale)

Consumer Price Inflation: 12-month (Right Scale)
Risk #4: Agriculture Faces Huge Interest Rate Risk.

Capitalized Land Values = \frac{\text{Expected Incomes}}{\text{Expected Discount Rates}}

- Farm Incomes Rise with Lower Interest Rates
- Discount Rates Fall with Lower Interest Rates

What Happens to Farmland Values Under Higher Interest Rates?
Could farmland values experience a correction?

Capitalized Revenues from Corn Production

Dollars per acre

Dollars per bushel

- Capitalized Value at 7% capitalization rate and 200 bushel yield
- Estimated Eastern Nebraska Irrigated Cropland Value

29% 43% 57%

Federal Reserve Bank of Kansas City – Omaha Branch
Regional, Public, Community Affairs Division
Risk #5: How much debt do farmers really have?

Growth in Farm Real Estate and Non-Real Estate Debt (2009 to 2010)

Percent change from previous year

Source: USDA, Agricultural Finance Databook, Federal Farm Credit Banks
Risk #6: Will middle-aged residents return to rural America?

Today’s 40 year olds were teenagers in the 1980s. What is their memory of rural America?

Source: Federal Reserve Bank of Kansas City
Conclusions

- Rural America fared better during the recession and recovery.
- Crop incomes are booming and farmers are buying tractors, land, and more.
- Economic growth and inflations have risen recently.
- Despite a stronger recovery, headwinds remains.
- New opportunities are emerging with stronger demand.
- Agriculture continues to face volatile markets.

*Low leverage ratios and strong working capital are the best way to manage through volatile times.*
For More Information on Agricultural and Rural Economies

www.kansascityfed.org