American Agriculture
Raising Food For Thought

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Monetary Policy and Food Prices

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Omaha Branch Executive
Federal Reserve Bank of Kansas City

The opinions expressed are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
The Committee also decided to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that economic conditions--including low rates of resource utilization and a subdued outlook for inflation over the medium run--are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.
The Balancing Act of Monetary Policy

Sustainable Economic Growth (Unemployment) vs. Price Stability (Inflation)
Market fundamentals drive ag prices. Monetary policy is an amplifier.

U.S. Corn Inventory and Farm Price

- Percent of annual use
- Dollars per bushel

Source: USDA
What are the Implications for Agriculture?

Agriculture’s “Golden Eras” emerged during low interest rate environments.

- Through a weak dollar, farm incomes surge in low interest rates environments.
- Farmland values boom as low interest rates boost the capitalization of farm incomes.

- The “Golden Eras” of agriculture
  - 1910s: low rates used to finance WWI
  - 1970s: low rates to stimulate growth
  - 2000s: low rates used to combat “Jobless Recoveries”
High farm incomes in low interest rate environments.

In 1900, only a few counties had land values with more than $1000 per acre.

Source: USDA
By the end of WWI, $2000 to $3000 per acre was common.

Real Farmland Values in 1920

Source: USDA
By the end of the Great Depression, land values were back to 1900 values.

Real Farmland Values in 1940

Source: USDA
By 1970s, productivity gains had boosted farmland values.

Real Farmland Values in 1969

Source: USDA
Farmland values surged in the 1970s.

Real Farmland Values in 1982

Source: USDA
Within 5 years, farmland values dropped back to 1969 levels.

Real Farmland Values in 1987

Source: USDA
Today, robust energy and agricultural prices spur cropland value gains.

Non-irrigated Cropland Values
(Percent change 2010:Q2 to 2011:Q2)

Source: Agricultural Finance Databook, Federal Reserve Bank of Kansas City
What are the Implications for Agriculture?

• The Benefits
  – Farm incomes are high
  – Farmland values boom

• The Costs
  – Food prices escalate, especially for the poor.
  – Depending on your perspective, food vs. fuel.
Soaring global food prices start to ease

World Food Prices

Index

Source: FAO of the United Nations
Yet, U.S. food prices continue to rise, especially for food consumed at home.
Why is there a difference between world and U.S. food price inflation?

Commodities account for a smaller share of processed foods.

<table>
<thead>
<tr>
<th>Farm share of U.S. food dollar</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef products</td>
<td>45 cents</td>
</tr>
<tr>
<td>Milk products</td>
<td>30 cents</td>
</tr>
<tr>
<td>Fruits and vegetables</td>
<td>25 to 28 cents</td>
</tr>
<tr>
<td>Bread</td>
<td>4 cents</td>
</tr>
<tr>
<td>Corn flakes</td>
<td>4 cents</td>
</tr>
<tr>
<td>Corn syrup</td>
<td>3 cents</td>
</tr>
</tbody>
</table>

Source: USDA

The U.S. Food Marketing Bill

<table>
<thead>
<tr>
<th>1960s to 1970s</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Farm value 33%</td>
<td>1) Labor 40%</td>
</tr>
<tr>
<td>2) Labor 29.5%</td>
<td>2) Farm value 16%</td>
</tr>
</tbody>
</table>

Source: USDA
Why is there a difference between world and U.S. food price inflation?

Wealthy nations eat more processed foods.

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita fast-food expenditures (2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>$492</td>
</tr>
<tr>
<td>Canada</td>
<td>$387</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$199</td>
</tr>
<tr>
<td>Japan</td>
<td>$108</td>
</tr>
<tr>
<td>Brazil</td>
<td>$26.3</td>
</tr>
<tr>
<td>China</td>
<td>$7.4</td>
</tr>
<tr>
<td>India</td>
<td>$4.3</td>
</tr>
</tbody>
</table>

Source: USDA and Euromonitor

Packaged Foods Share of Food Expenditures

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-income</td>
<td>52</td>
</tr>
<tr>
<td>Upper-middle</td>
<td>40</td>
</tr>
<tr>
<td>Lower-middle</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: USDA and Euromonitor
Rising food prices stress household budgets, especially the poor.

Poorest 20% in the U.S. spend 35% of household income on food.

Source: USDA
Food price inflation is projected to slow.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Food</td>
<td>3.5 to 4.5</td>
<td>2.5 to 3.5</td>
</tr>
<tr>
<td>Food away from home</td>
<td>3.0 to 4.0</td>
<td>2.0 to 3.0</td>
</tr>
<tr>
<td>Food at home</td>
<td>4.0 to 5.0</td>
<td>3.0 to 4.0</td>
</tr>
<tr>
<td>Meats</td>
<td>6.5 to 7.5</td>
<td>3.5 to 4.5</td>
</tr>
<tr>
<td>Dairy products</td>
<td>5.0 to 6.0</td>
<td>3.5 to 4.5</td>
</tr>
<tr>
<td>Fruits and vegetables</td>
<td>3.5 to 4.5</td>
<td>3.0 to 4.0</td>
</tr>
<tr>
<td>Sugars</td>
<td>2.5 to 3.5</td>
<td>2.0 to 3.0</td>
</tr>
<tr>
<td>Cereals</td>
<td>4.0 to 5.0</td>
<td>4.5 to 5.5</td>
</tr>
</tbody>
</table>

Source: USDA
Food vs. Fuel

What we know: Ethanol is based on mandates, tariffs, and subsidies.

Ethanol policy is being scrutinized again. Will the answers be different?

• What are the public benefits?
• Does it reduce our dependence on foreign oil?
• Is ethanol environmentally sustainable?
• Can we afford it?
• How long before advanced ethanol is viable?
• What is the impact on global food prices?
What are the Risks for Agriculture?

- Future inflation
  - Inflation rose in 2011
    - Headline CPI inflation: 3.9% over the past year.
    - Core CPI inflation: 2.0% over the past year.

- Yet, forecasts suggest slower inflation in 2012.
- Inflation expectations remain stable.

**Ultimately, velocity is the key to inflation.**
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 \( M \) up
chasing \( V \) up
too few goods \( Q \) down
The monetary base is not money supply.
Banks are holding monetary base in excess reserves.

When will inflation start?

Banks start lending
Consumers start spending
Businesses start investing

In short, if excess reserves fall before the Fed balance sheet.

Source: Federal Reserve Board of Governors
Conclusions

• Market fundamentals drive market prices, monetary policy is an amplifier.
• Agriculture’s “Golden Eras” emerged in low interest rate environments.
• Agriculture enjoys booming farm incomes and land values, but …
• Urban consumers bear the burden of higher food prices.
• Velocity will shape inflation in the future.

The key is bank lending, consumer spending, and business investment.