The economy hit bottom in June 2009, with hesitant growth since then.
In December 2008, the Federal Open Market Committee lowered its Fed Funds rate target to a range from 0 to 0.25%.
Quantitative easing was necessary

![Chart showing the assets of the Federal Reserve over time](chart)

**Assets of the Federal Reserve**

- Billions of dollars

- **2007** - **2011**

- Term Asset-Backed Securities Loan Facility
- Maiden Lane II & III
- Central Bank Swaps
- AIG Support
- Commercial Paper Facility
- Term Auction Credit
- Securities Held Outright
Food price increases again rising faster than core inflation (less food and energy)

(Consumer price index, percent change from year ago)
Why is the Chicago Fed interested in Agriculture?

• Important portion of District economy
  – Wide geographic impact
  – “Backbone” of economy

• Leading farm states

• Food manufacturing
  – Jobs
  – Income

• Impact on commercial banks

• Response to stakeholders
7th District Agriculture Products (as % of U.S. total, 2010)

- Grain Corn
- Soybeans
- Hogs
- Eggs
- Milk Production
- Cattle
Why the interest in farmland values?

- Accounts for huge portion of sector asset value
- An indicator of agriculture’s health
- Affects collateral values & portfolio quality
- Impact on lending institutions
- A factor in the 1980’s farm crisis
Banks in 7th District Land Value and Credit Conditions Survey
Annual change in farmland values in Seventh Federal Reserve District
Year over year changes by quarter in farmland values in the Seventh Federal Reserve District
Index of Seventh District farmland values  
(1981=100)
Indices of Seventh District farmland values and USDA farm real estate (1981=100, adjusted by PCE)
Index of Seventh District Cash Rents
Nominal vs. Inflation Adjusted (1981=100)

Nominal

Inflation Adjusted

Farmland Price to Earnings Ratio for the Seventh District (1981=1)
7th District Earnings to Price Ratio (left axis, 1981=1) vs. Real Return on 10 Year Treasury Bonds
What factors affect farmland values?

- Expected net returns
- Interest rates
- Government programs
- Capital investment in structures
- Non-farm demand
- Inflation, lending policies, other investments, speculation, technology, trade, site characteristics, environmental issues
Corn production a bit smaller than last year

![Bar chart showing corn production in billion bushels from 1991/92 to 11/12. The production is as follows: 1991/92: 7.5 billion bushels, 1996/97: 9.5 billion bushels, 2001/02: 10.1 billion bushels, 2006/07: 11.8 billion bushels, 2011/12: 13.0 billion bushels.](chart.png)
Growth in industrial demand (especially for ethanol production) surpassed feed demand for corn.
Lower corn stocks and higher prices in 2010/11 and beyond

![Graph showing price per bushel and stocks/use ratio over time from 1991/92 to 11/12*]
U.S. ETHANOL BIOREFINERY LOCATIONS

Biorefineries (204)
Biorefineries under construction (9)

Source: Renewable Fuels Association, January 2011
Soybean production expected to be down...
Crushings are stalling while soybean exports have climbed in the last decade.
Prices moving higher as soybean constraints ease

<table>
<thead>
<tr>
<th>Year</th>
<th>Price per bushel</th>
<th>Stocks/use ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991/92</td>
<td>$14</td>
<td>3%</td>
</tr>
<tr>
<td>96/97</td>
<td>$11</td>
<td>14%</td>
</tr>
<tr>
<td>01/02</td>
<td>$8</td>
<td>8%</td>
</tr>
<tr>
<td>06/07</td>
<td>$10</td>
<td>9%</td>
</tr>
<tr>
<td>11/12*</td>
<td>$16</td>
<td>16%</td>
</tr>
</tbody>
</table>

Note: The graph shows the percentage increase in prices and stocks/use ratio over the years.
Real Crop Prices

($/bushel, adjusted by CPI-U for January 2008)
7th District Crop Yield Indexes
(1964=100)
U.S. agricultural output, inputs, and total factor productivity (TFP) (1948=100)
Housing market tanked and bounced along bottom

Housing starts
(thousands of units, 3-month moving average, SAAR)

Home mortgage rate
(percent, effective rate for all loans closed)
Building Permits for Single-family Houses in Chicago Collar Counties
(not seasonally adjusted)
Financial indicators for the farm sector

- Net farm income
- Farm program spending
- Farm balance sheet
- Interest rates are still relatively low
- Credit conditions improved in recent years
  - Fewer loan renewals and extensions
  - Less than 2% of agricultural loans with “major” or “severe” repayment problems
Real net farm income boosted by direct government payments to farmers, but the regional impact varies.
Farm operator household income, by size of farm, 2008

Source: Agricultural Resource Management Survey, ERS and NASS, USDA.
Real growth in farm sector assets and equity until the recession, as debt remained more level.
Farm financial ratios improved following the ‘80s crisis
Interest rates charged on new farm loans in the Seventh Federal Reserve District

Farm operating

Farm real estate
Index of agricultural loan demand for the Seventh Federal Reserve District (excluding real estate)
Index of funds availability for the Seventh Federal Reserve District
Index of agricultural loan repayment rates for the Seventh Federal Reserve District
Global Trade in Action

9.1% of U.S. Exports in 2009 were Food and Agricultural Products
Value of agricultural exports surging again
The dollar’s exchange value peaked in 2002, before falling below earlier range

(Real Broad Trade-Weighted Exchange Value of the US$)
{March 1973=100}
Supporting factors for farmland values?

1. Higher expected stream of farm income
2. Productivity and yield trends
3. Mix of investors has broadened
   (more diversifiers; fewer recreational buyers)
4. Off-farm income growth is uncertain
5. Government payments are lower, but strong support for crop insurance persists
6. Low interest rates for agriculture
7. Limited availability of farmland
8. Opportunism
Where do farmland values go next?

• Supply of farmland (limited)

• Demand for farmland (strong)

• Farmland values increasing rapidly

• Uncertain future, but it’s not the 1980’s

• Fundamentals favor further increases in farmland values, although not as rapidly
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