Update on US Land Values and Cash Rents

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2018 USDA Agricultural Outlook Forum
Feb 22, 2018, Washington, DC
A Quick Introduction: Dr. Wendong Zhang

- Grown up in a rural county in NE China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ in 2015 from Ohio State
- 2012 summer intern at USDA-ERS on farm economy and farmland values
- Research and extension interests:
  - land value/ownership [www.card.iastate.edu/farmland/]
  - agriculture and the environment
ISU China Ag center [www.card.iastate.edu/china]
Why Care About Farmland Market?

Note: F = forecast. The GDP chain-type price index is used to convert the nominal (current-dollar) statistics to real (inflation adjusted) amounts (2018=100).
Percent change in dollar value of “good” farmland

*Top:* October 1, 2017 to January 1, 2018
*Bottom:* January 1, 2017 to January 1, 2018

<table>
<thead>
<tr>
<th>State</th>
<th>October 1, 2017 to January 1, 2018</th>
<th>January 1, 2017 to January 1, 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>0</td>
<td>-1</td>
</tr>
<tr>
<td>Indiana</td>
<td>-2</td>
<td>+2</td>
</tr>
<tr>
<td>Iowa</td>
<td>0</td>
<td>+3</td>
</tr>
<tr>
<td>Michigan</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>+2</td>
<td>+2</td>
</tr>
<tr>
<td>Seventh District</td>
<td>0</td>
<td>+1</td>
</tr>
</tbody>
</table>

**Federal Reserve Bank of Chicago**

*AgLetter:* February 2018

By David Oppedahl
Farmland Markets Provide Support Amid a Weak Ag Economy

Chart 1: Tenth District Farmland Values

Percent change from the previous year *

- Nonirrigated
- Irrigated
- Ranchland

* Percent changes are calculated using responses only from those banks reporting in both the past and the current quarters.
USDA NASS June Area Survey
June 2016 to June 2017

Ag Real Estate Values: + 2.3%;
Cropland Values: No change;
Pasture Values: +1.5%
Stabilization in all US farmland markets

USDA NASS June Area Survey
June 2016 to June 2017

Ag Real Estate Values: + 2.3%;
Cropland Values: No change;
Pasture Values: +1.5%
The “temporary break” in continued declines results from **limited land supply**

*Bankers responded to each item by indicating whether the volume of land sales increased, decreased, or remain the same. The index numbers are computed by subtracting the percentage of bankers who responded “decreased” from the percentage who responded “increased” and adding 100.*

**Chart 3: Volume of Farmland Sales**
Economic Fundamentals that drive land value haven’t improved much

Land Value = localized net income / universal interest rate
The U.S. Department of Agriculture’s Economic Research Service (ERS) indicated on Wednesday that, “Net farm income, a broad measure of profits, is forecast to decrease $4.3 billion (6.7 percent) to $59.5 billion in 2018, which would be the lowest level in nominal terms since 2006.”
Long-term interest rate expectations
What the Fed Reserve thinks the interest rate should be

December 2017
Left: Cash Rent Per Acre 1994-2017
Right: Cap Rate (Rent/Value) vs. CMT 10 Rate

Cash Rent Per Acre ($/acre)

- Illinois
- Indiana
- Iowa
- US

Cap Rate or Interest Rate (%)

- I-States Avg. Rent/Value ratio
- US rent/value ratio
- June CMT10Rate

Source: USDA NASS, Federal Reserve
The Current Farm Downturn versus the 1920s and 1980s Farm Crises: An Economic and Regulatory Comparison

Wendong Zhang, Kristine Tidgren

Farm Crises and this downturn

Source: USDA-NASS; Ag Census, Iowa Farmland Value Portal
No Farm Crisis Reason 1: Strong, Real Income Accumulation 2003-2013

<table>
<thead>
<tr>
<th>Golden Eras</th>
<th>Iowa Land</th>
<th>U.S. Gross Income</th>
<th>U.S. Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910-1920</td>
<td>9.3%</td>
<td>9.0%</td>
<td>8.4%</td>
</tr>
<tr>
<td>1973-1981</td>
<td>19.5%</td>
<td>9.8%</td>
<td>5.3%</td>
</tr>
<tr>
<td>2003-2013</td>
<td>13.7%</td>
<td>7.1%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Crises and Declines</td>
<td>Iowa Land</td>
<td>U.S. Gross Income</td>
<td>U.S. Net Income</td>
</tr>
<tr>
<td>1921-1933</td>
<td>-8.9%</td>
<td>-4.7%</td>
<td>-3.6%</td>
</tr>
<tr>
<td>1981-1987</td>
<td>-14.0%</td>
<td>2.1%</td>
<td>7.3%</td>
</tr>
<tr>
<td>2013-2017</td>
<td>1.1%</td>
<td>-2.4%</td>
<td>-6.4%</td>
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<td>0.7%</td>
<td>-3.4%</td>
</tr>
<tr>
<td>2003-2013</td>
<td>11.0%</td>
<td>4.5%</td>
<td>8.2%</td>
</tr>
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<td>Crises and Declines</td>
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<td>2.7%</td>
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<td>2013-2017</td>
<td>-0.1%</td>
<td>-3.7%</td>
<td>-7.6%</td>
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</tbody>
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Source: Zhang and Tidgren 2018 Ag Finance Review
Landowners tend to hold the farmland; and many don’t have debt

<table>
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<th>Years Owned by the same owner</th>
<th>% of Iowa Farmland</th>
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<tr>
<td>&lt;10 years</td>
<td>24%</td>
</tr>
<tr>
<td>10-20 Years</td>
<td>21%</td>
</tr>
<tr>
<td>20-30 Years</td>
<td>19%</td>
</tr>
<tr>
<td>30-40 Years</td>
<td>15%</td>
</tr>
<tr>
<td>&gt; 40 Years</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 3.5: Finance method as a percent of farmland

<table>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Free of debt</td>
<td>62%*</td>
<td>70%*</td>
<td>74%</td>
<td>75%</td>
<td>78%</td>
</tr>
<tr>
<td>Under contract</td>
<td>18%*</td>
<td>11%*</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Mortgaged</td>
<td>20%</td>
<td>19%</td>
<td>22%*</td>
<td>21%*</td>
<td>19%</td>
</tr>
</tbody>
</table>

* Indicates significant differences relative to the 2012 survey at the 5 percent level

Source: 2012 Iowa Farmland Ownership and Tenure Survey; 2017 Survey results will be released this spring
No Farm Crisis Reason 2: Historically low interest rates, despite recent hikes

Source: http://www.multpl.com/10-year-treasury-rate
No Farm Crisis Reason 3: Prudence in Ag Lenders/Regulators

• Cash-Flow Based Loan Practice; More stringent underwriting practice
  – Before 1987: loan to value ratio is 85%
  – 1987-2008: loan to value ratio is 65%
  – After 2008: use cash-flow method for collateral ($4 corn, $10 bean) and 50% of cash flow value

• Increased capitalization requirements for banks

• Ag credit shifts to more diversified institutional lenders

Source: Zhang and Tidgren 2018 Ag Finance Review
Annual Mortgage Payments vs. Cash Rents for Iowa Farmland Loan

Cash Rent or Mortgage Payments ($/acre)


Cash Rent 20-yr PMT 30-yr PMT 15-yr PMT

Source: Zhang and Tidgren 2018
Ag Finance Review
Iowa Farmland Value Portal

#ISUIlandvalue

http://bit.ly/LandResults2017
A corny tale

China imports a farm from Iowa

A slice of the Midwest outside Beijing

Presentations


Thank You!

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