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>

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

Source: USDA NASS, Federal Reserve
Most Recent Observation: Jan. 2018

% of respondents

- Higher Farmland Prices
- Lower Farmland Prices
- Farmland Price Expectations, 12 months from now
The Current Farm Downturn versus the 1920s and 1980s Farm Crises: An Economic and Regulatory Comparison

Wendong Zhang, Kristine Tidgren

Agricultural Finance Review

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

### Average annual percent change in nominal values

<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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crises and Declines</th>
<th>Iowa Land</th>
<th>U.S. Gross Income</th>
<th>U.S. Net Income</th>
</tr>
</thead>
<tbody>
<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>
</tr>
</tbody>
</table>

### Average annual percent change in inflation-adjusted values

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<td>0.5%</td>
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<tr>
<td>1973-1981</td>
<td>9.6%</td>
<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>
</tbody>
</table>

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<tbody>
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<td>-5.8%</td>
<td>-2.0%</td>
<td>-1.3%</td>
</tr>
<tr>
<td>1981-1987</td>
<td>-15.0%</td>
<td>-2.4%</td>
<td>2.7%</td>
</tr>
<tr>
<td>2013-2017</td>
<td>-0.1%</td>
<td>-3.7%</td>
<td>-7.6%</td>
</tr>
</tbody>
</table>

Source: Zhang and Tidgren 2018 Ag Finance Review
Landowners tend to hold the farmland; and many don’t have debt.

<table>
<thead>
<tr>
<th>Years Owned by the same owner</th>
<th>% of Iowa Farmland</th>
</tr>
</thead>
<tbody>
<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>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</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](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 vs. Mortgage Payments ($/acre)

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

Source: Zhang and Tidgren 2018
Ag Finance Review
A corny tale

China imports a farm from Iowa

A slice of the Midwest outside Beijing

**Presentations**


Thank You!

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