Land values and interest rates: will Iowa farms sink or swim?

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2018 ICM

Farm sector assets, inflation adjusted, 1970-2018F

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).
Data as of August 30, 2018.
In recent years, U.S. farm real estate appreciation has slowed following a decline in U.S. net cash farm income.

Average per-acre value of farm real estate (S2016) and NCFI per acre (S2016) are shown in the graph. The graph illustrates the trend from 1980 through 2018, with notes indicating that NCFI stands for net cash farm income. Data are expressed in real (inflation-adjusted) 2016 dollars using the Gross Domestic Product deflator. Farm real estate values include the value of land and structures on the land. The data source is the Federal Reserve Bank of Chicago, with updates as of November 9, 2018.

Interest Rates on Farm Real Estate Loans (% at end of quarter) - VII District

The interest rates are shown from 1980 to 2018, with a note indicating the 2nd Quarter 2018 rate of 5.28%. The data source is the Federal Reserve Bank of Chicago, updated as of November 9, 2018.
Economic Fundamentals driving Land Values

Land Values = Localized Net Income
Universal Interest Rate

- Higher Income, higher Land Value
- Lower Interest Rate, higher Land Value
Iowa Farmland Value ($/Acre)

Source: Iowa Land Value Portal
https://www.card.iastate.edu/land-value/graphs/
Farmland values and Net Farm Income (cash) in Iowa

Sources: Iowa Land Value Portal & Ag Decision Maker File C1-10

Why haven’t land values declined further? → Limited Supply

Sources: Kansas City FED, Ag Credit Survey. Feb 2018
Worsening Credit Conditions for Ag Banks: Higher Loan-to-Deposit Ratio

Source: Federal Reserve Bank of Chicago.
Updated Nov 15, 2018
Ag Banks face Repayment issues

Source: Federal Reserve Bank of Chicago. Updated Nov 15, 2018

Interest Rates on Farm Real Estate Loans (% at end of quarter)

Source: Federal Reserve Bank of Chicago. Updated Nov 15, 2018
Economic Fundamentals

Lower Local Farm Income ➔ Lower Land Values
Higher Univ. Interest Rate ➔ Lower Value of Farm Assets ➔ Less Equity ➔ Lower Solvency

Source: Chicago FED. Ag. Letter. Nov 2018
FARMLAND FOR SALE JUMPS UP 21%  
LANDOWNERS DECIDING NOW IS THE TIME TO SELL.

By Betsy Freese  
11/27/2018

Randy Dickhut, Senior VP of Real Estate Operations, Farmers National Company:

these are just delayed sales. The auction session may not have generated a bid above the reserve price,

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USDA Long Term Projections  
(published Feb 2018)

Net cash income  
Net farm income (accrual)

Billion dollars (nominal)

2018 2020 2022 2024 2026
Returns Over Variable Costs for U.S. Corn and Soybeans (Oct’ 18)

Projected Interest Rates (USDA, Oct 2018)
What if land values go lower and interest rates higher?

• Operator Landowners with Cash Flow problems:
  ➢ Lower collateral to cover cash gaps
  ➢ Choose to sell some land?
  ➢ Forced land sales?
  ➢ Cut equity losses and exit farming?

• Operator Landowners with “Old cash”:
  ➢ More attractive Financial investments
  ➢ Expand farm operation? → years to retirement
  ➢ Cut equity losses and exit farming?

What if land values go lower and interest rates higher?

• Non-operating Landowners:
  ➢ Higher interest rates = Higher opportunity costs
  ➢ Asking for higher cash rents?
  ➢ Sell now or wait until next cycle?

• Tenants:
  ➢ Fewer rented acres?
  ➢ Exiting farmers?
  ➢ Lower rents?
What if land values go lower and interest rates higher?

- **Investors:**
  Less interest in farmland? (2017: 23% of purchases by investors in 10th FED District)

What can happen in Iowa?

2 Case Studies

Joe Early Purchase vs. John Recent Purchase

Both farms:

- 650 acres
- 50% corn; 50% beans on Owned land
- ISU Cost of Production per Acre
- Average Iowa yields
- Land Costs on Owned acres: 0.5% Land Value
- Sell all crop in 1 marketing year
Joe Early Purchase

Owned:
• Purchased 400 acres in 2003: $2,275 per acre
• Cost: $910,000
• 20-year loan; 6% interest rate; 20% down

Rented:
• 250 acres: 100 on Corn; 50 on Beans

John Recent Purchase

Until 2012:
• Owned 160 acres debt free
• Rented 490 acres: 300 acres Corn, 190 acres Beans

2013 onwards:
• In 2013 purchased 240 acres, $8,716 per acre
• Cost: $2.09 million
• 20-year loan; 4.5% interest rate; 20% down
• 250 acres rent: 100 Corn; 50 Beans
• Total Owned 400 acres; Total Rented 250 acres
Net Revenue from Corn/Beans for Joe Early Purchase

Thousands

-Net Revenue Corn Onwed - Net Revenue Corn Rented
-Net Revenue Soy Onwed - Net Revenue Soy Rented
Total NFI

Farm Cash Flow for JEP

Cash Flow =
Net Revenue from C/S
- RE interest – RE principal
+ Depreciation

Thousands

Net Revenue from C/S RE int Net Farm Cash Flow
Net Revenue from Enterprises: JEP vs JRP

Net Revenue JEP

Net Revenue JRP

Farm Cash Flow for JRP

Cash Flow =
Net Revenue from C/S
– RE interest – RE principal
+ Depreciation
Land Equity: JEP vs JRP

- JEP:
  - Cash flow OK
  - Losses in Rented Acres offset by profits in owned acres
  - Recent decline NFI, but plenty of Equity

- JRP:
  - Not able to cash-flow for several years
  - Lost $410,000 in Equity
  - Any operating profit goes to pay for loan
  - How long can it last? Off-farm income?
  - Sell 40 acres to inject liquidity? and then?
Average Farm Profitability in Iowa: ROA, ROE, Operating profit margin ratio

- Operating profit margin ratio
- Rate of return on farm assets
- Rate of return on farm equity

Source: Iowa Farm Costs and Returns. Ag Decision Maker File C1-10. Various years.
Farm Liquidity 2014 - 2017

Current Ratio Analysis (N=220)

- Vulnerable (CR≤1.3)
- Normal (1.3<CR≤2)
- Strong (CR>2)

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<thead>
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<th>Year</th>
<th>Vulnerable</th>
<th>Normal</th>
<th>Strong</th>
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<tr>
<td>Dec-14</td>
<td>44.5%</td>
<td>39.1%</td>
<td>32.7%</td>
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<tr>
<td>Dec-15</td>
<td>22.3%</td>
<td>18.6%</td>
<td>22.3%</td>
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<tr>
<td>Dec-16</td>
<td>33.2%</td>
<td>62.3%</td>
<td>46.4%</td>
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<tr>
<td>Dec-17</td>
<td>38.6%</td>
<td>38.6%</td>
<td>43.0%</td>
</tr>
</tbody>
</table>

Source: A. Plastina’s calculations based on IFBA data

Farm Solvency 2014-2017

Debt to Asset Ratio Analysis (N=220)

- Vulnerable (DTA>0.6)
- Normal (0.3<DTA≤0.6)
- Strong (DTA≤0.3)

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<td>26.8%</td>
<td>29.5%</td>
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Source: A. Plastina’s calculations based on IFBA data
% of Farms (Owned & Rented) with Weak Liquidity or Solvency

![Bar chart showing the percentage of farms with weak solvency, liquidity, or both, with data from Dec-16 and Dec-17.](chart)

Assumptions

2018-2023:

- Land Values drop 5% each year
- Cash rents drop $5 per year
- Other costs increase 2% per year
- Yields unchanged at 2018 levels (high)
- Corn price $3.65; Soy price $9.10

Source: A. Plastina’s calculations based on IFBA data

N=580 farms
Net Revenue from Corn/Beans: JEP vs JRP

Net Cash Flow: JEP vs JRP
JEarlyP:
• Stable NFI
• Able to cash flow
• Equity loss

JRecentP:
• Stable NFI
• Able to cash flow, but barely
• Equity loss
How is Iowa Farmland Financed?

Source: Iowa Farmland Ownership and Tenure Survey 1982-2017: A Thirty-five Year Perspective

Percentage of Iowa Farmland by Anticipated Transfer Method

Source: Iowa Farmland Ownership and Tenure Survey 1982-2017: A Thirty-five Year Perspective
Percent of Owners Who Anticipate Land Transfer in Next Five Years, 2017

- Yes: 13%
- No: 35%
- Already in trust: 26%
- NA, not going to transfer land: 11%
- Don’t know/refuse to answer: 15%

Source: Iowa Farmland Ownership and Tenure Survey 1982-2017: A Thirty-five Year Perspective

...Some farms will sink, but most will swim; painful anyway

- Weak solvency and liquidity: 1 out of 5 mid-sized commercial farms
- Likely to see some farmers exit farming:
  - Liquidity strapped
  - Highly leveraged
- Some farms will shed rented acres
- Some farms with strong solvency and liquidity will buy land, add rented acres
- Overall: painful, but not massive crisis
- Particularly, if farmers have a well structured cash flow budget → discuss options with lenders ASAP
Additional Resources

**ISU Farm Financial Associates:**
- Help producers organize and analyze financial information; evaluate alternatives
- Free of charge

**Iowa Concern Hotline:**
- 24/7 Phone Support: 1-800-447-1985

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**Thank you for your attention**

**What questions do you have?**

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