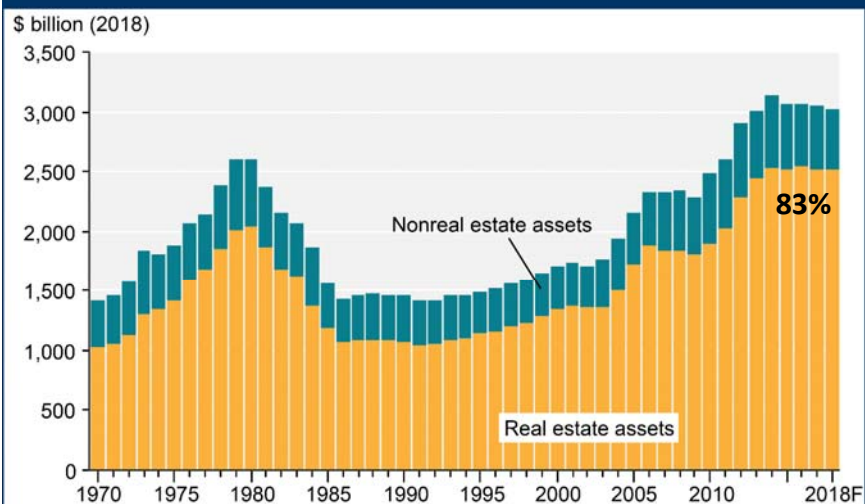


Land values and interest rates: will Iowa farms sink or swim?

Dr. Alejandro Plastina
Assistant Professor, Economics
2018 ICM

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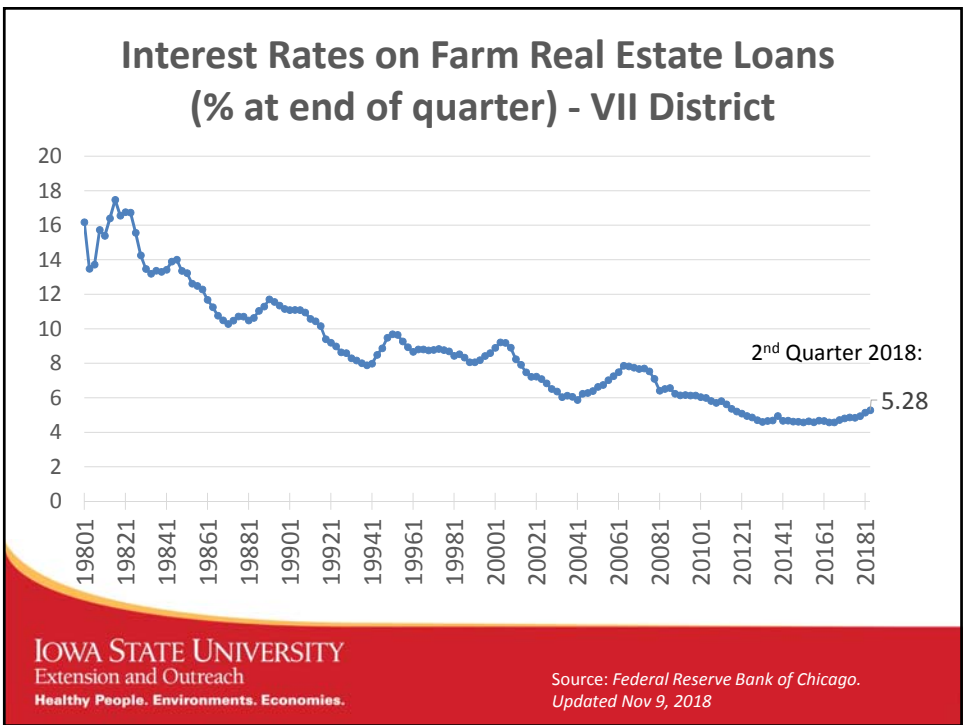
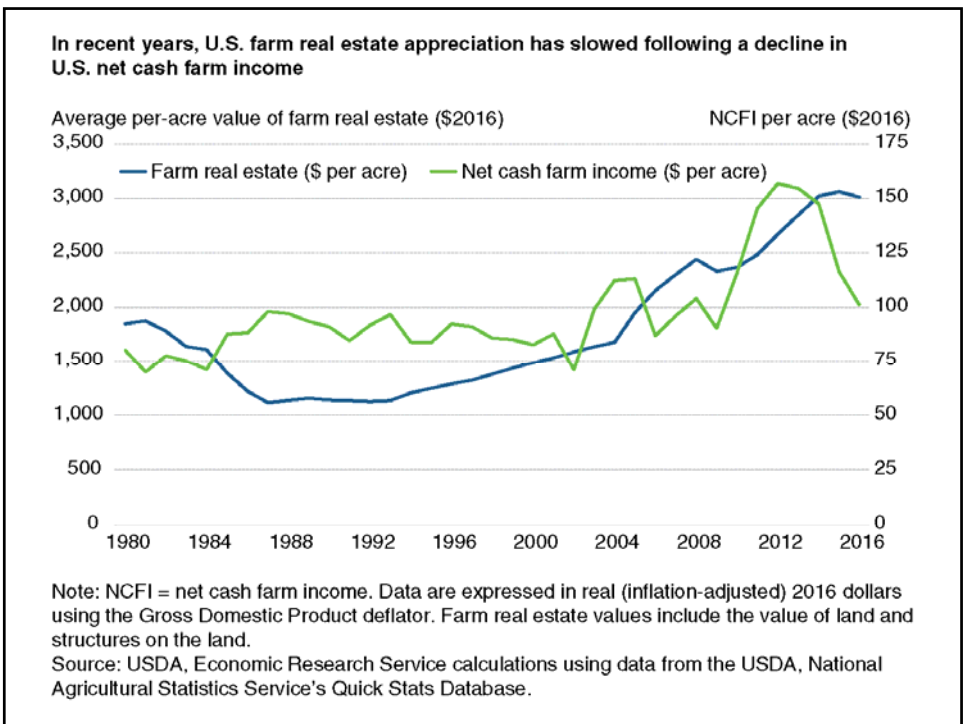
Farm sector assets, inflation adjusted, 1970-2018F



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).

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Data as of August 30, 2018.

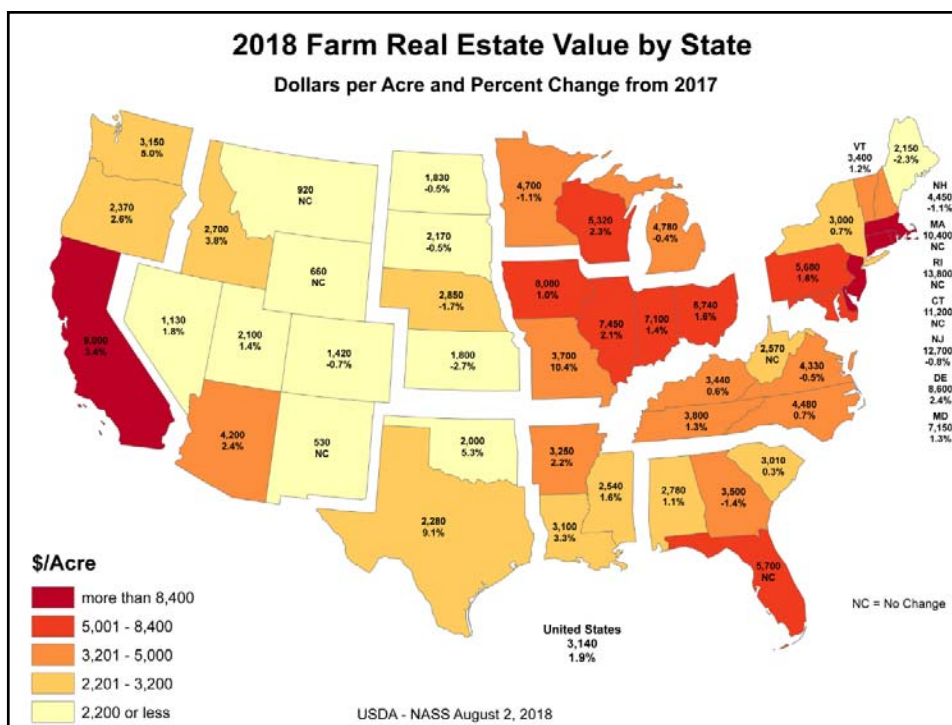


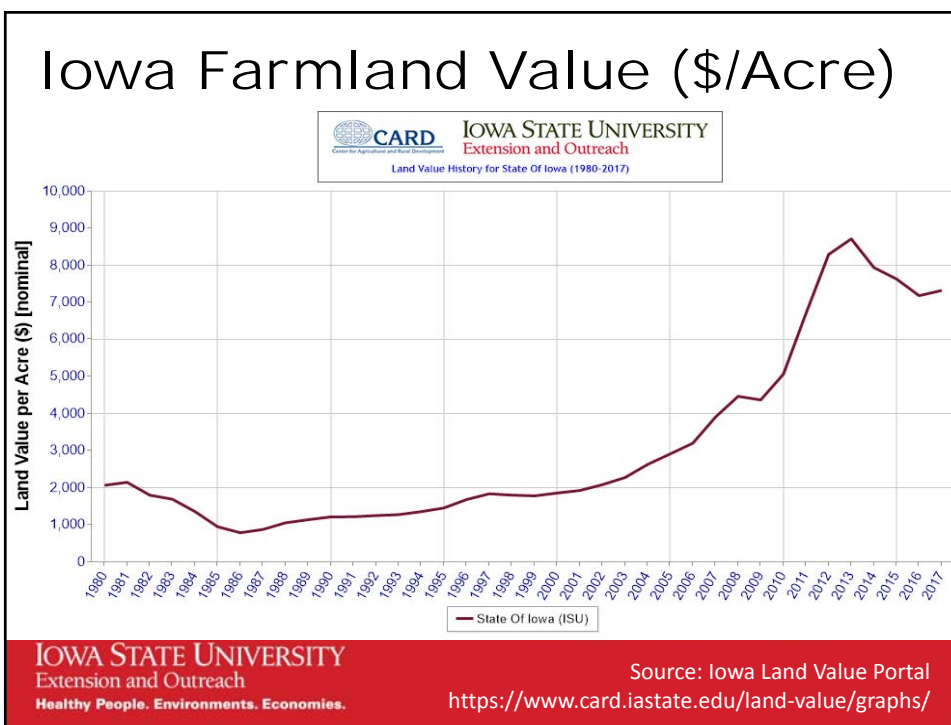
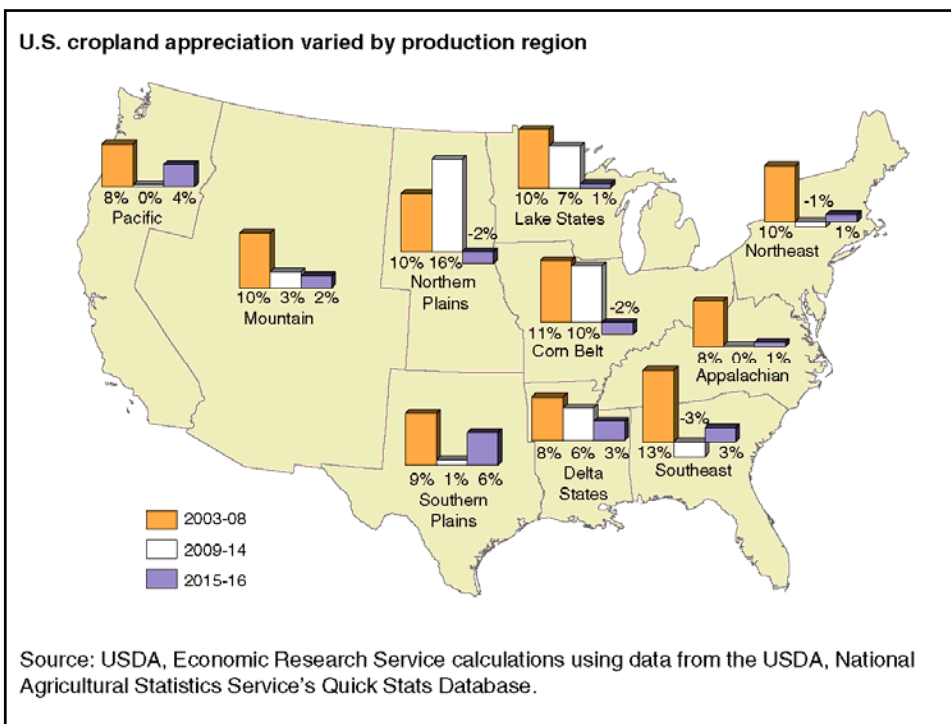
Economic Fundamentals driving Land Values

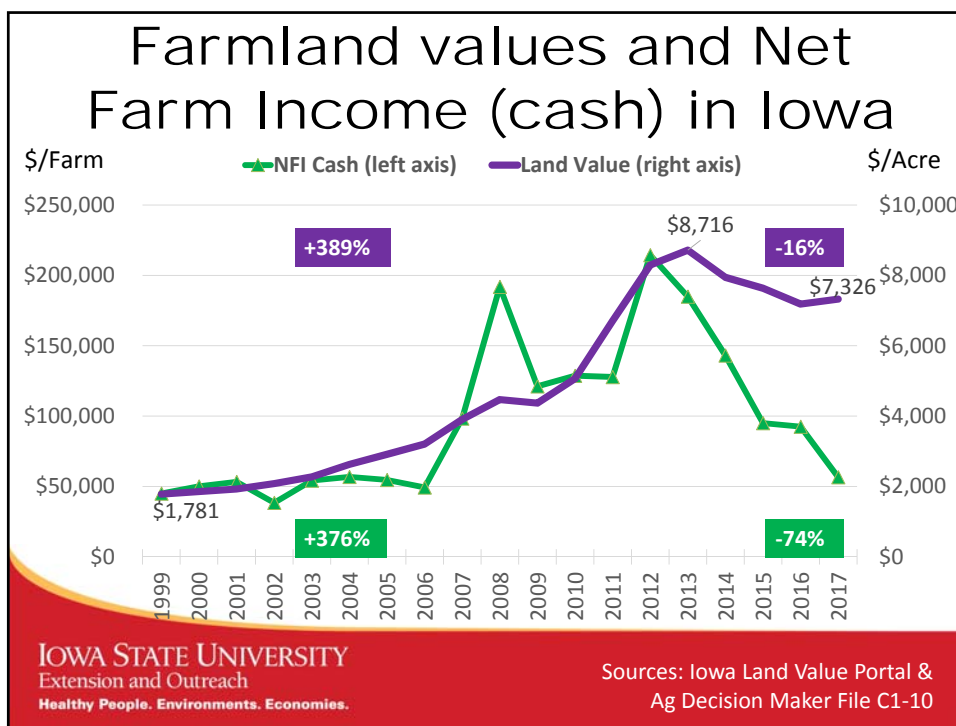
$$\text{Land Values} = \frac{\text{Localized Net Income}}{\text{Universal Interest Rate}}$$

- Higher Income, higher Land Value
- Lower Interest Rate, higher Land Value

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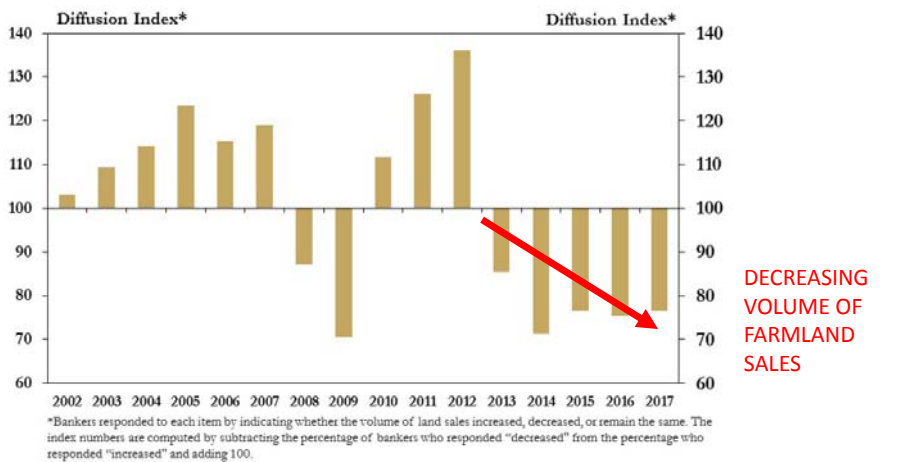




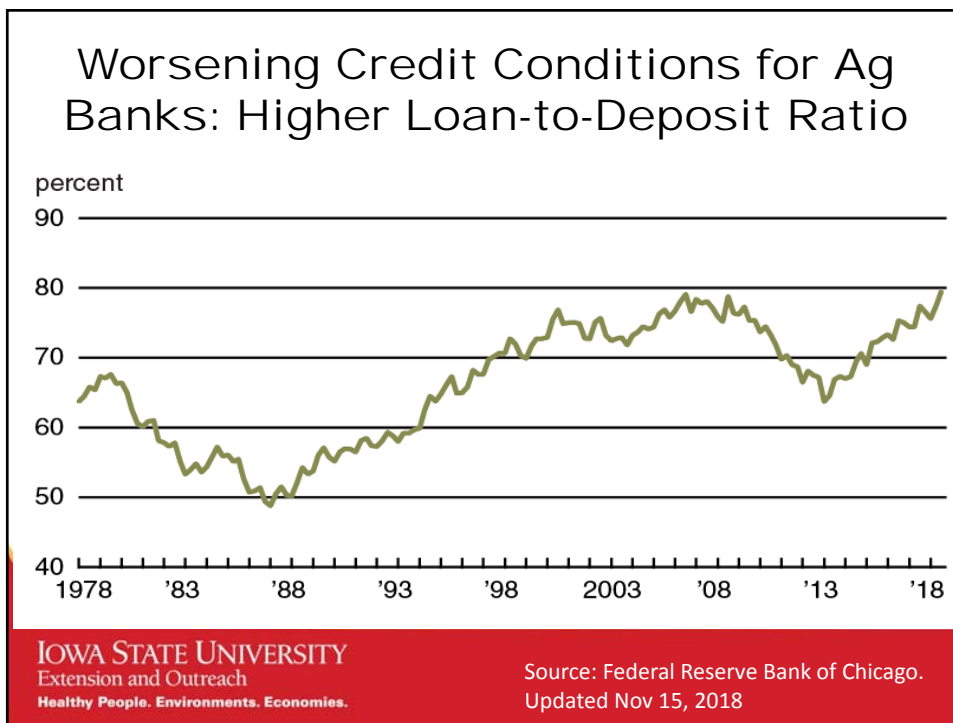
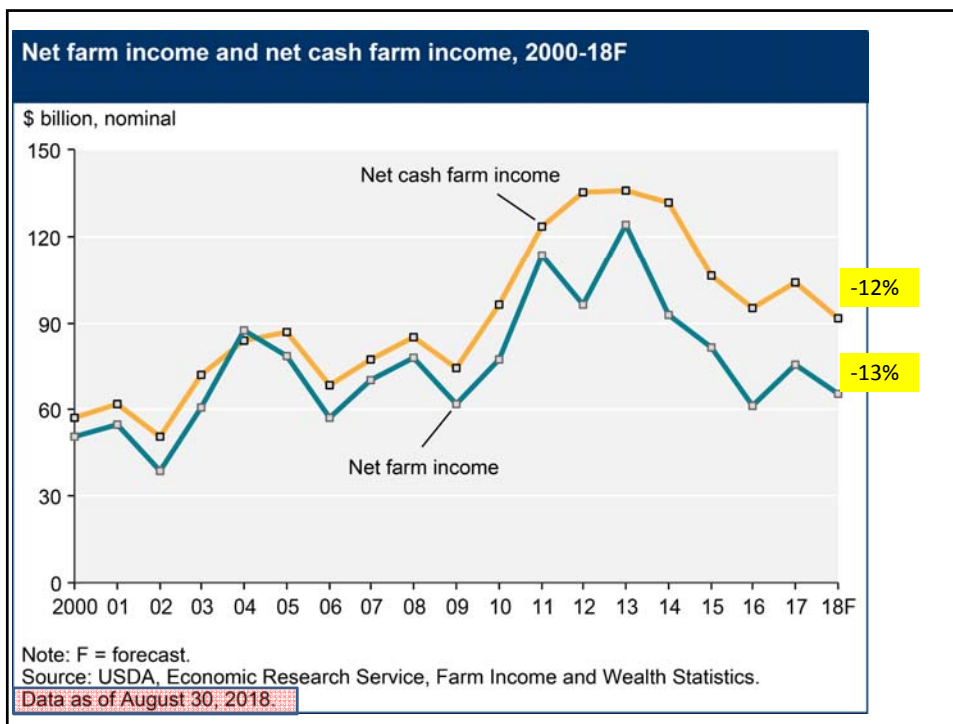


Why haven't land values declined further?

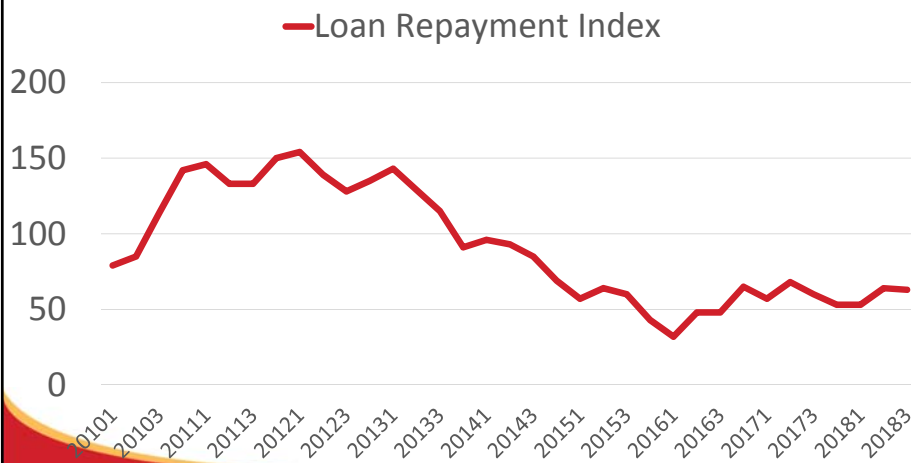
→ Limited Supply



Sources: Kansas City FED, Ag Credit Survey. Feb 2018



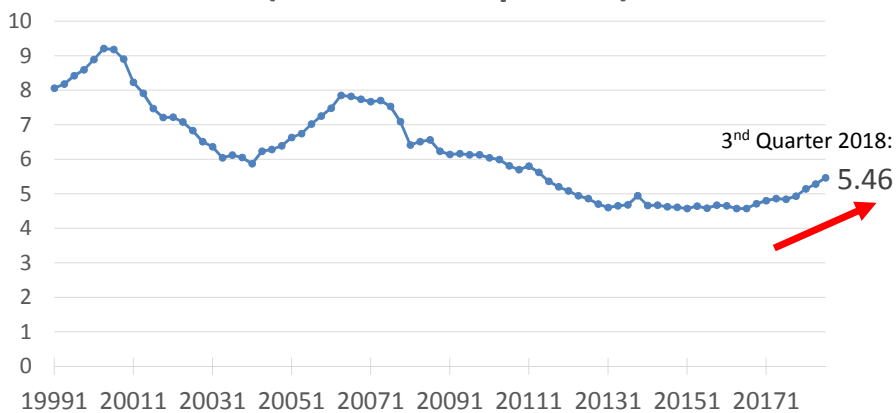
Ag Banks face Repayment issues



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

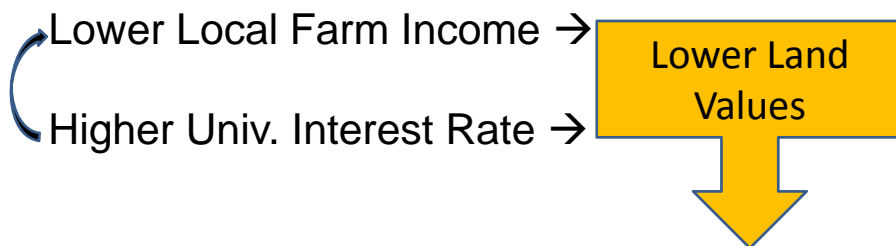
Interest Rates on Farm Real Estate Loans (% at end of quarter)



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

Economic Fundamentals



Lower Value of Farm Assets
 → Less Equity
 → Lower Solvency

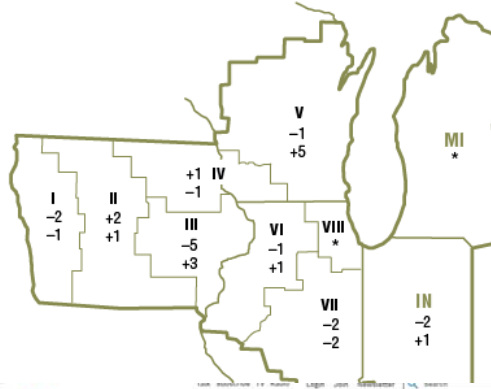
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Percent change in dollar value of "good" farmland

Top: July 1, 2018 to October 1, 2018

Bottom: October 1, 2017 to October 1, 2018

	July 1, 2018 to October 1, 2018	October 1, 2017 to October 1, 2018
Illinois	-1	-1
Indiana	-2	+1
Iowa	-1	+1
Michigan	*	*
Wisconsin	-1	+4
Seventh District	-1	+1



Source: Chicago FED. AgLetter. Nov 2018

MARKETING
 Survey: Corn Belt Land Values Fall in Third Quarter
 FEDERAL RESERVE CITES MORE SUPPLY, LOWER FARM PRICES, AND TIGHTER CREDIT.
 By Successful Farming Staff
 11/27/2018
 Farmland values in the Corn Belt are slightly lower now than mid-year, according to the Chicago Federal Reserve. Don't be surprised if that trend continues.

MARKETING
 Farmland for Sale Jumps Up 21%
 LANDOWNERS DECIDING NOW IS THE TIME TO SELL.
 By Betsy Friesse
 11/27/2018
 The amount of land that Farmers National Company, Omaha, Nebraska, has listed for sale is up 21% compared with last year at this time, reports the company.

FARMLAND FOR SALE JUMPS UP 21%

LANDOWNERS DECIDING NOW IS THE TIME TO SELL.

By **Betsy Freese**
11/27/2018

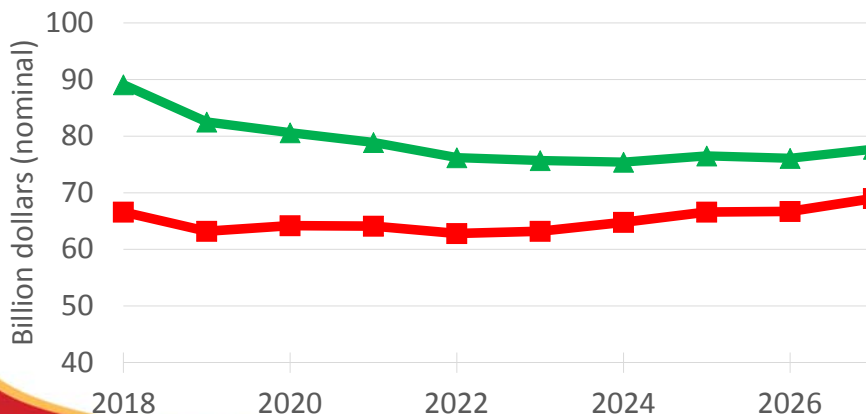
Randy Dickhut, Senior VP of Real Estate Operations,
Farmers National Company:

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

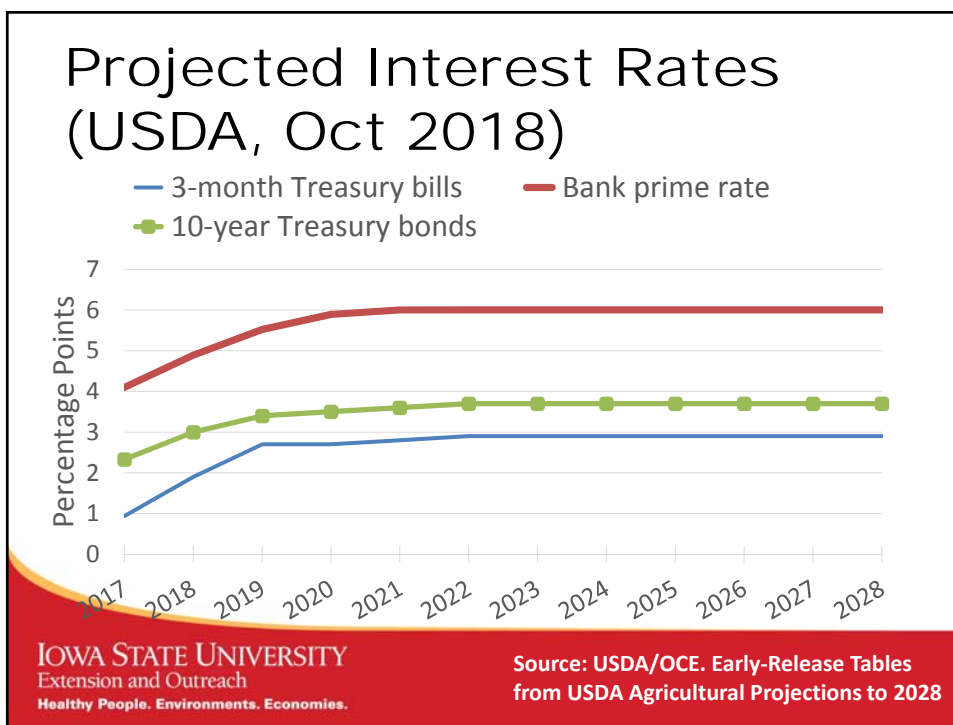
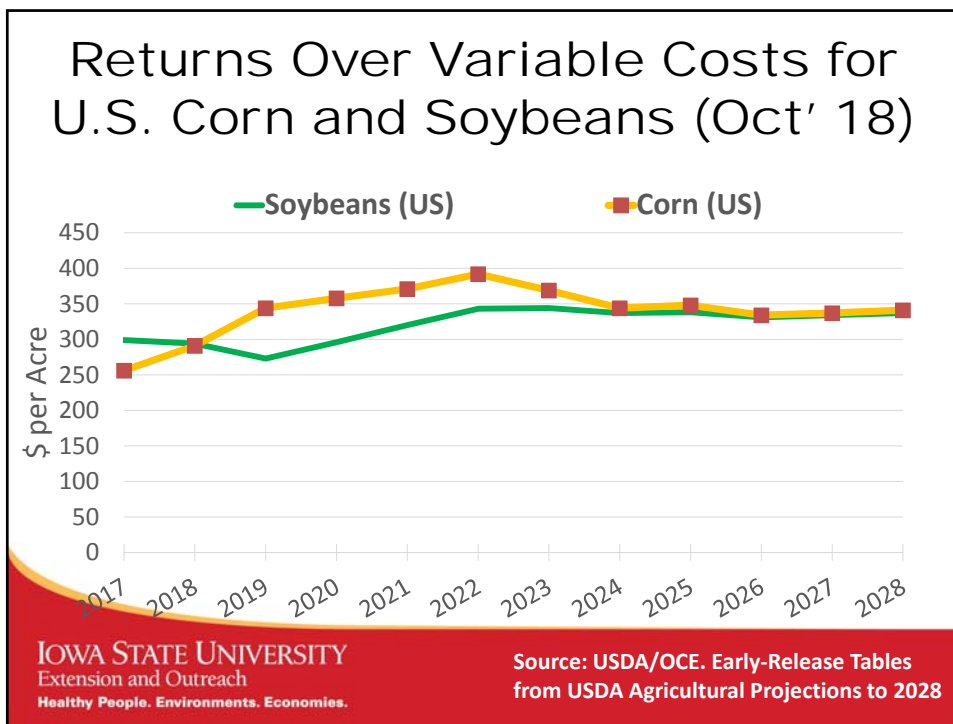
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USDA Long Term Projections (published Feb 2018)

▲ Net cash income ■ Net farm income (accrual)



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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?

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What if land values go lower and interest rates higher?

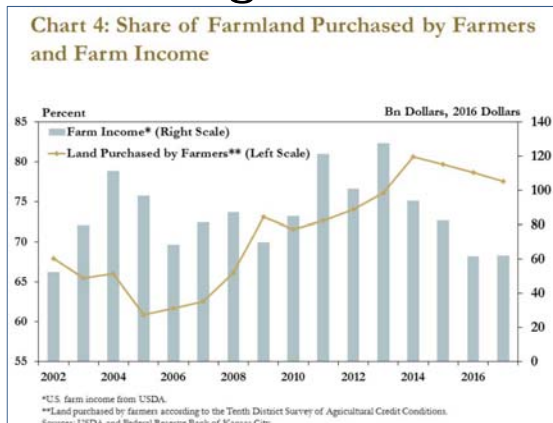
- **Non-operating Landowners:**
 - Higher interest rates = Higher opportunity costs
 - Asking for higher cash rents?
 - Sell now or wait until next cycle?
- **Tenants:**
 - Fewer rented acres?
 - Exiting farmers?
 - Lower rents?

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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)



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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

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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

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John Recent Purchase

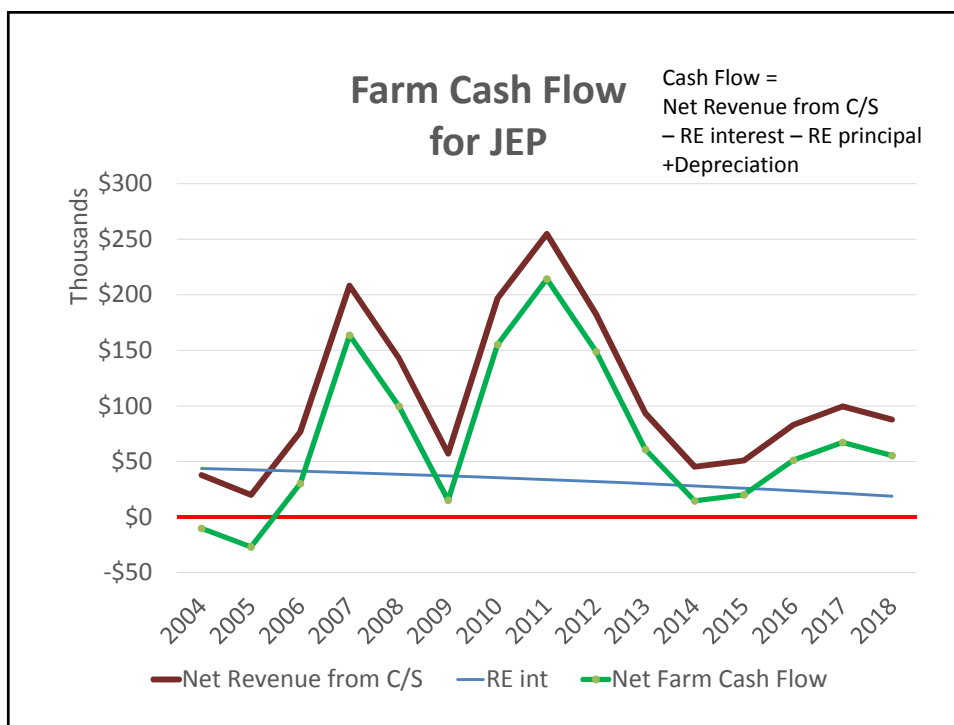
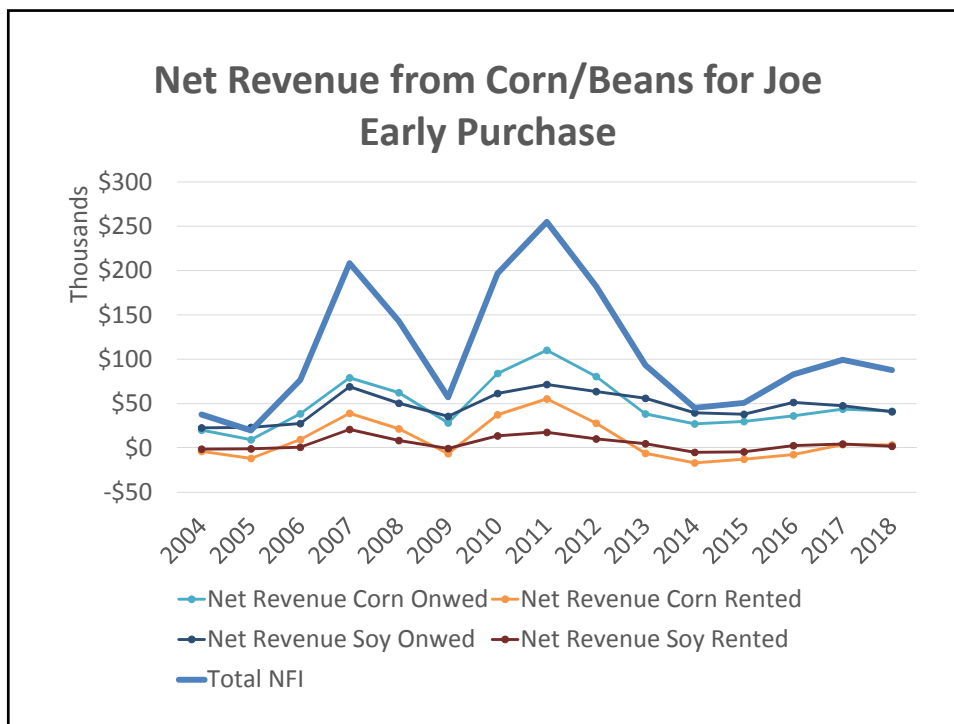
Until 2012:

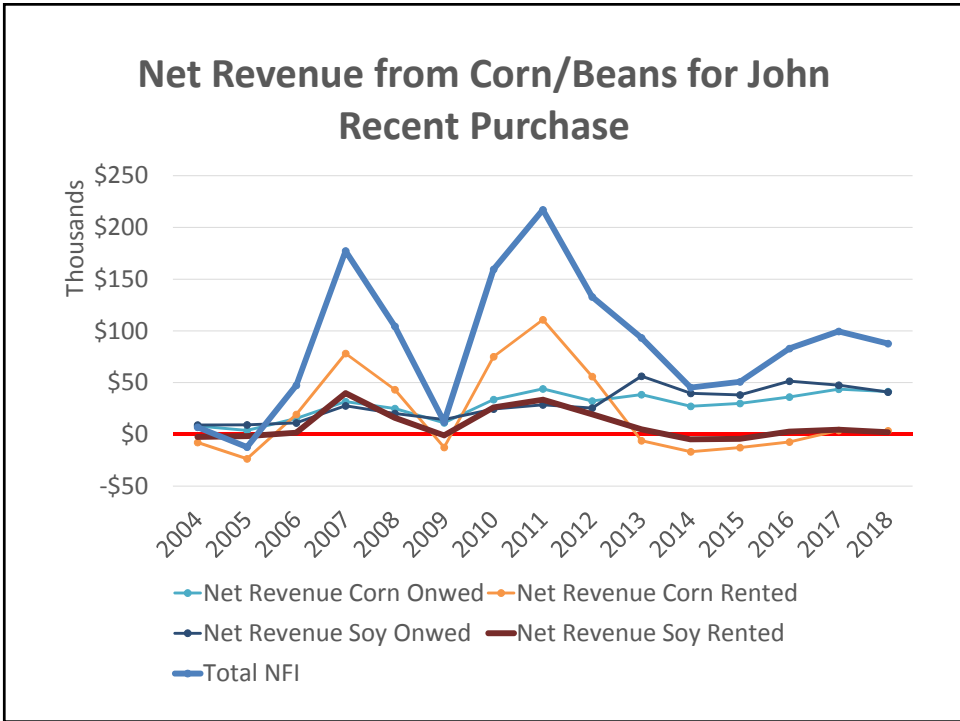
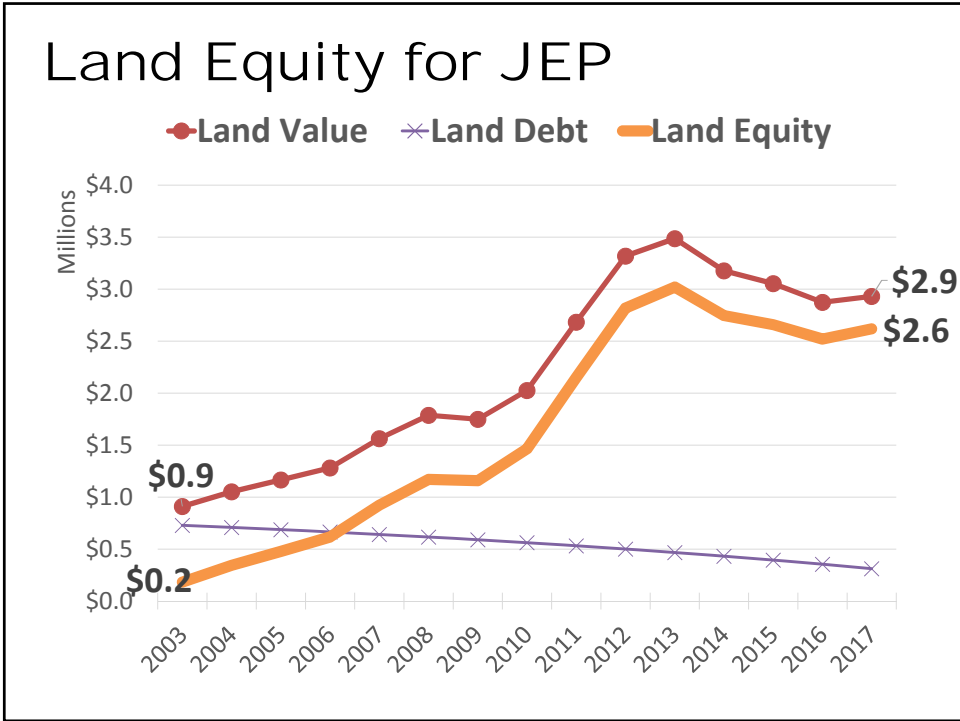
- Owned 160 acres debt free
- Rented 490 acres: 300 acres Corn, 190 acres Beans

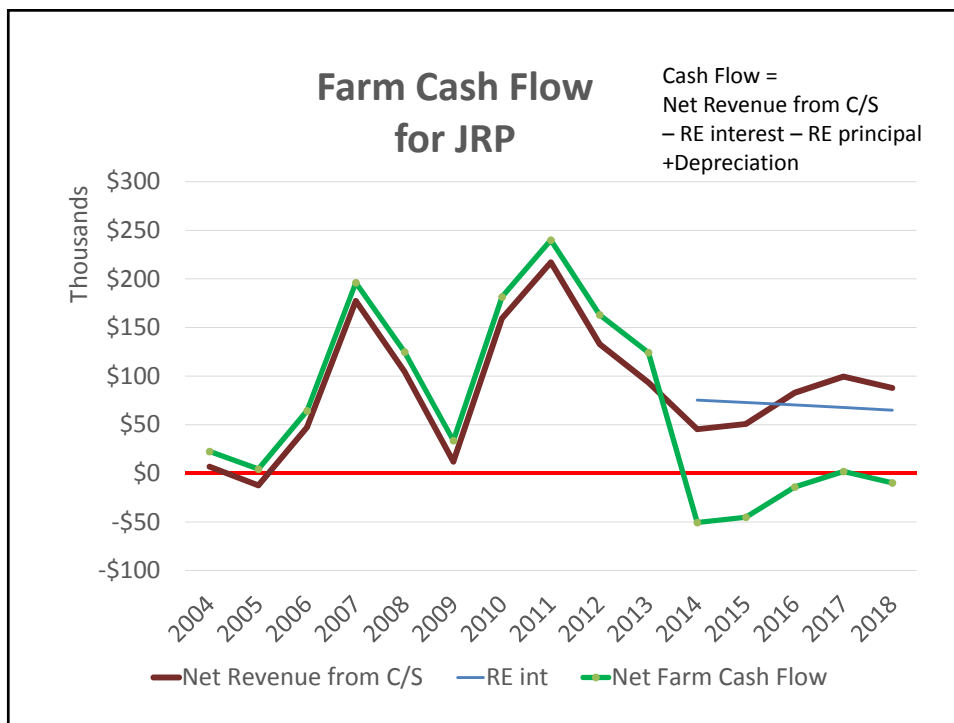
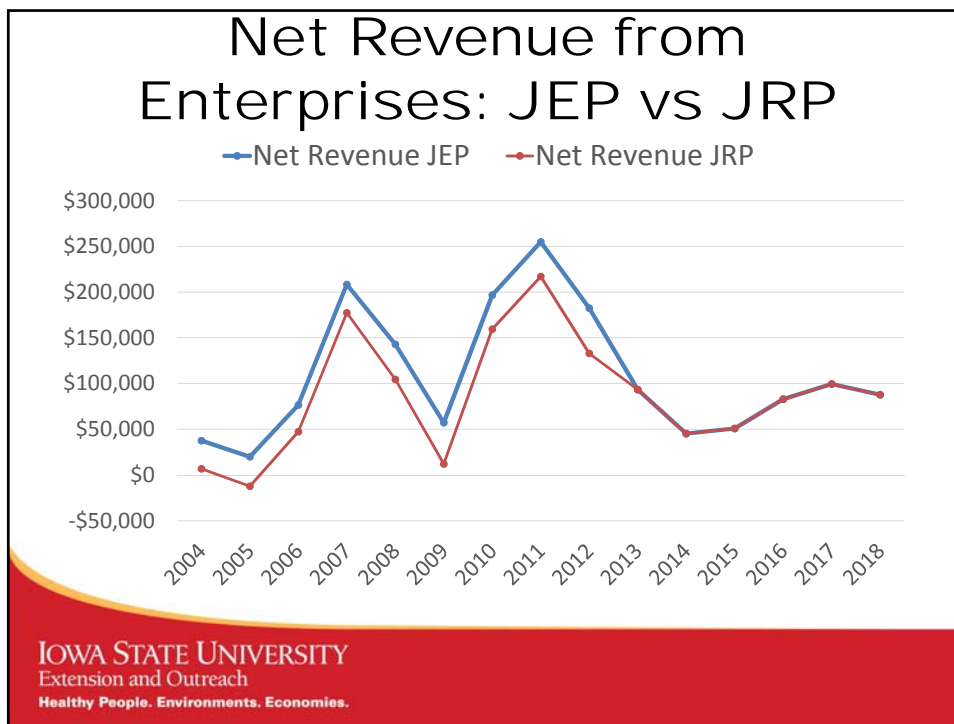
2013 onwards:

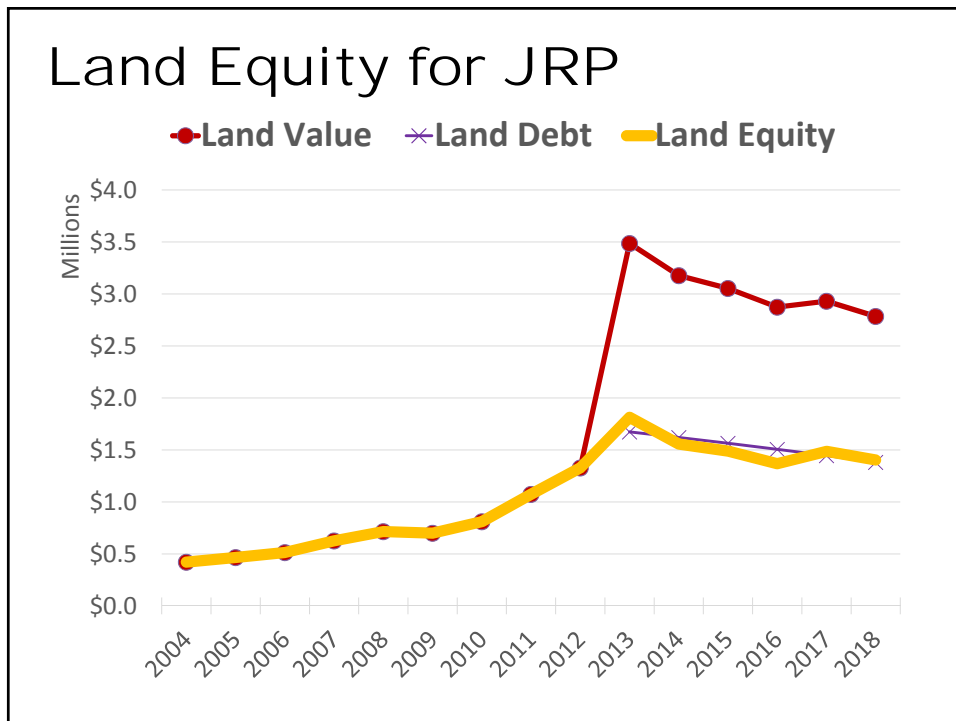
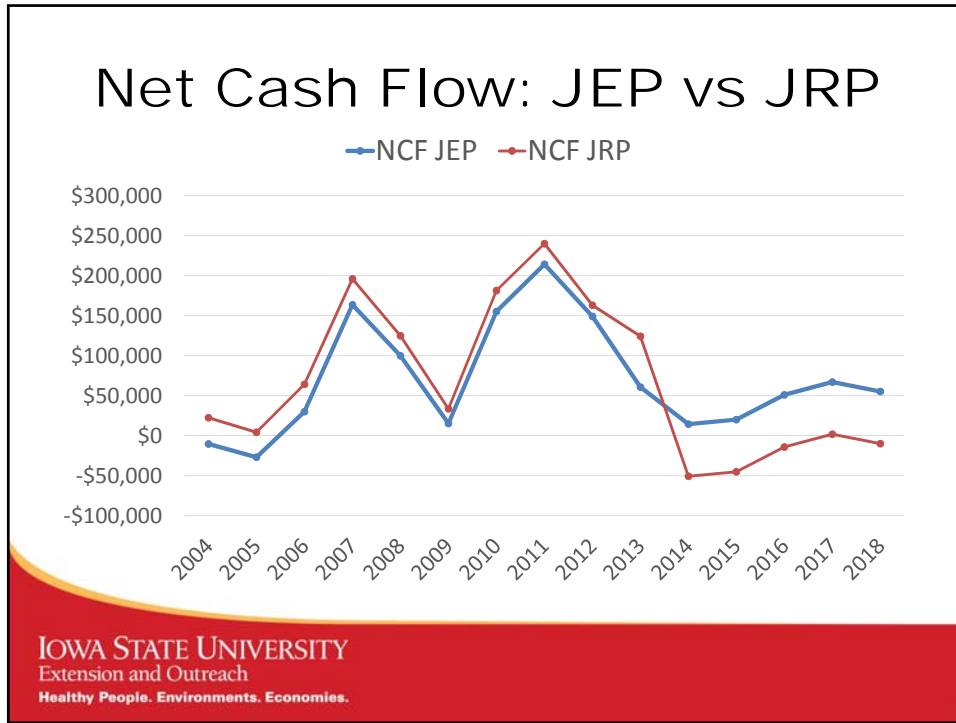
- In 2013 purchased 240 acres, \$8,716 per acre
- Cost: \$ 2.09 million
- 20-year loan; 4.5% interest rate; 20% down
- 250 acres rent: 100 Corn; 50 Beans
- Total Owned 400 acres; Total Rented 250 acres

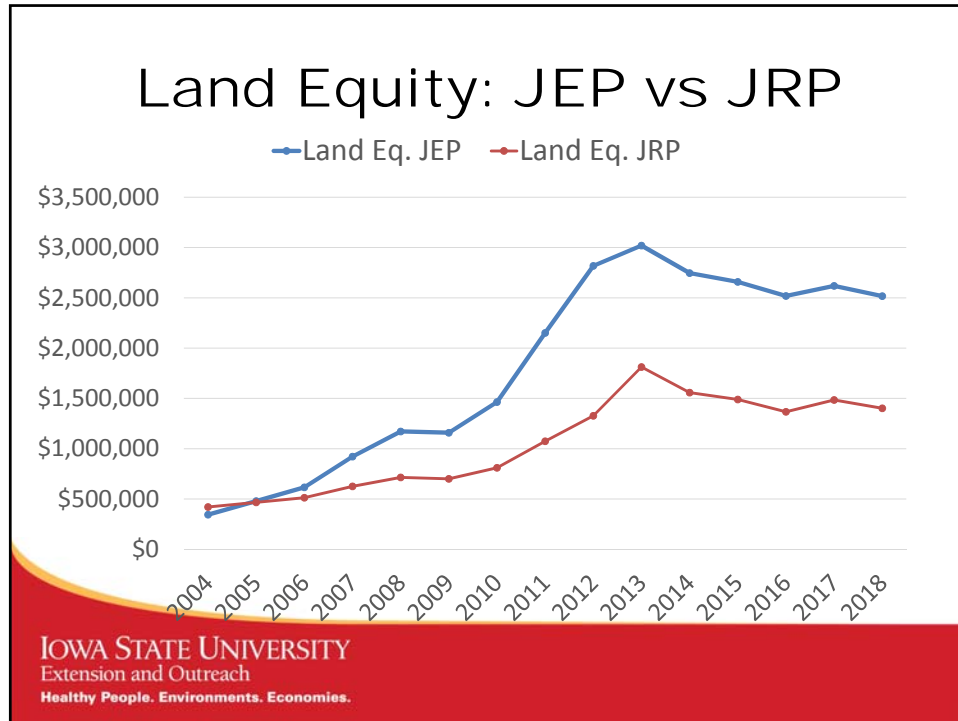
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JEarlyP vs. JRecentP

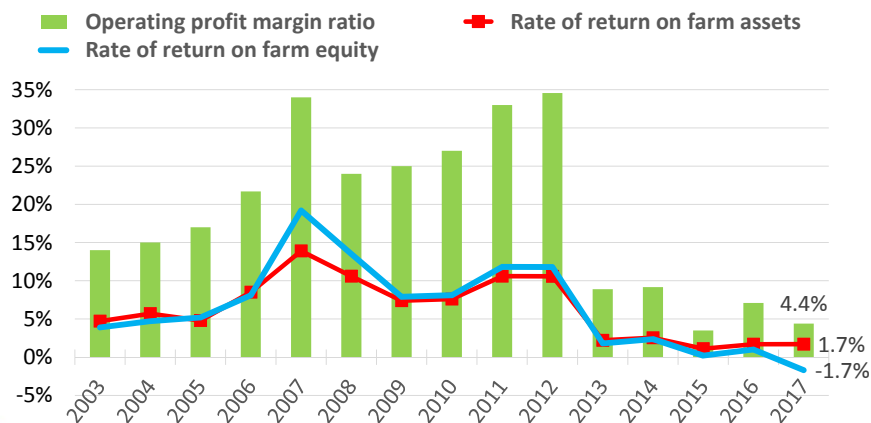
JEarlyP:

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

JRecentP:

- 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

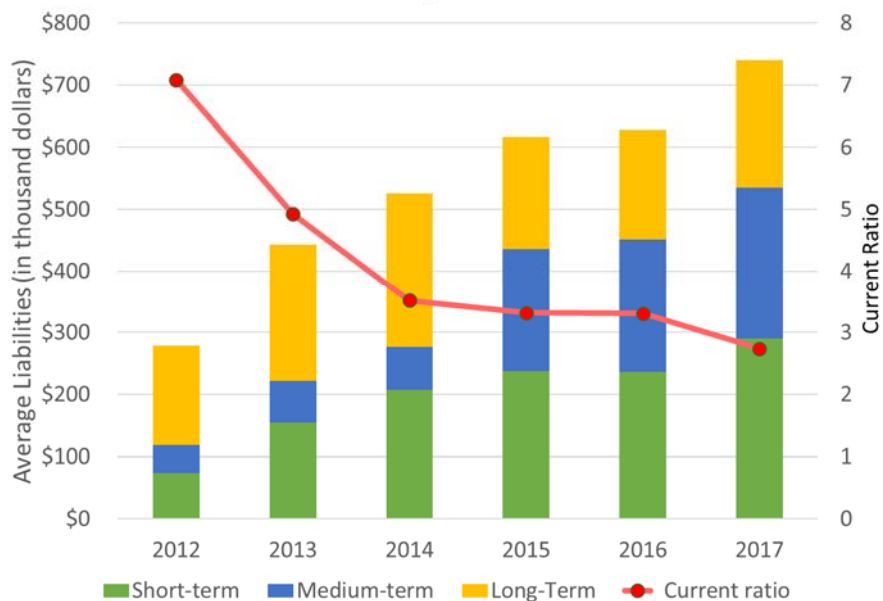


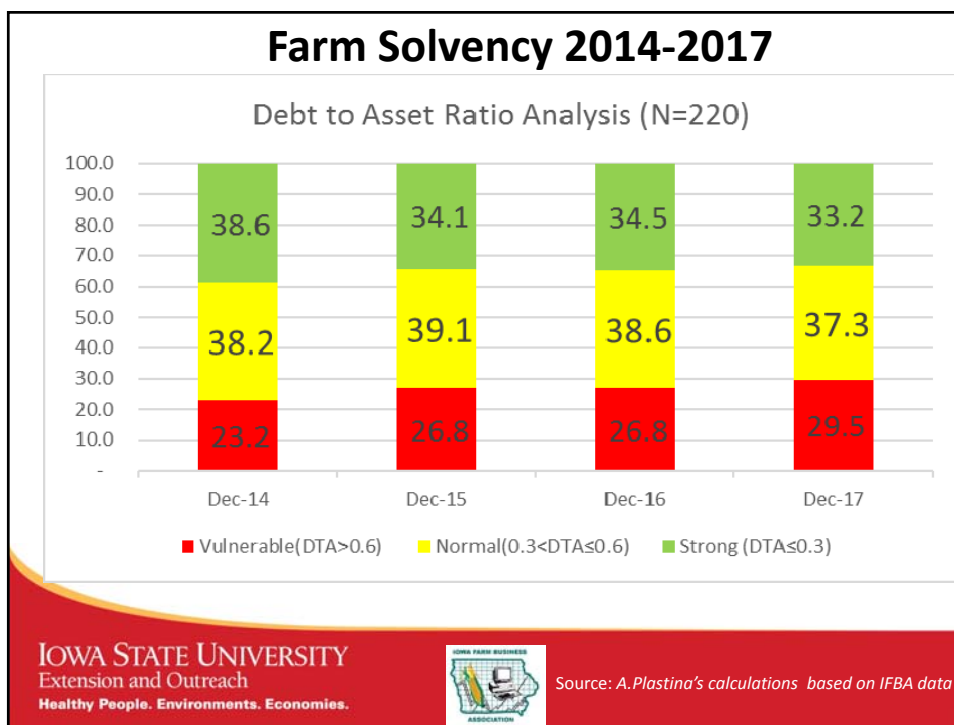
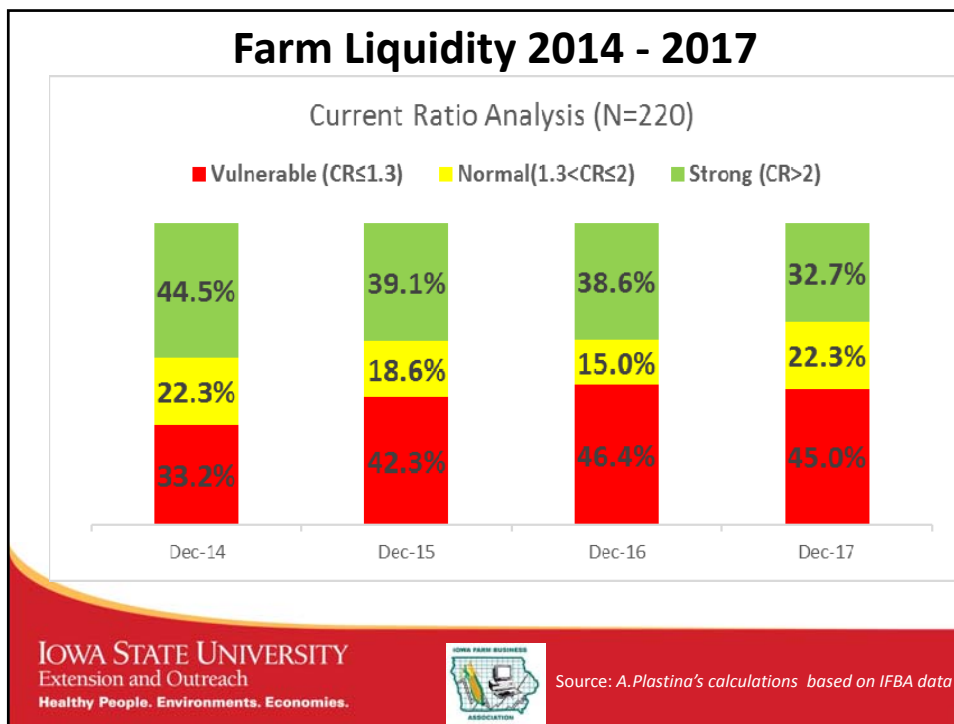
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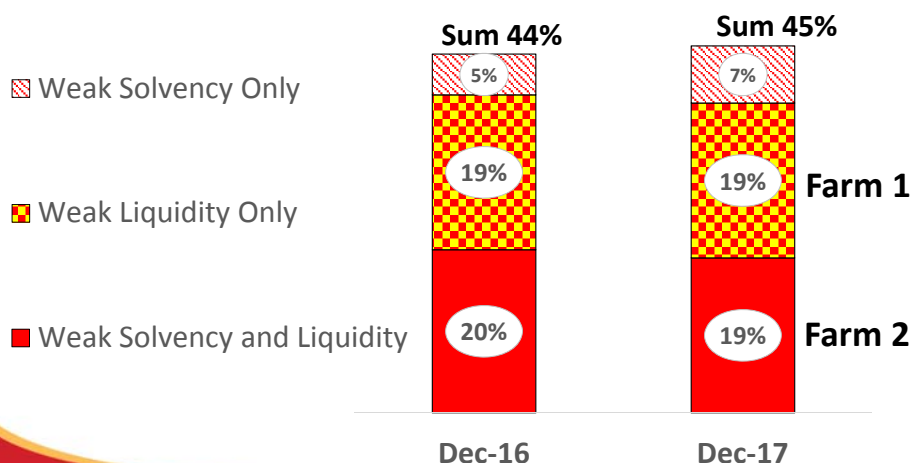
Source: Iowa Farm Costs and Returns.
Ag Decision Maker File C1-10. Various years.

Current Ratio and Average Liabilities of Iowa Farms





% of Farms (Owned & Rented) with Weak Liquidity or Solvency



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Source: A. Plastina's calculations based on IFBA data
N=580 farms

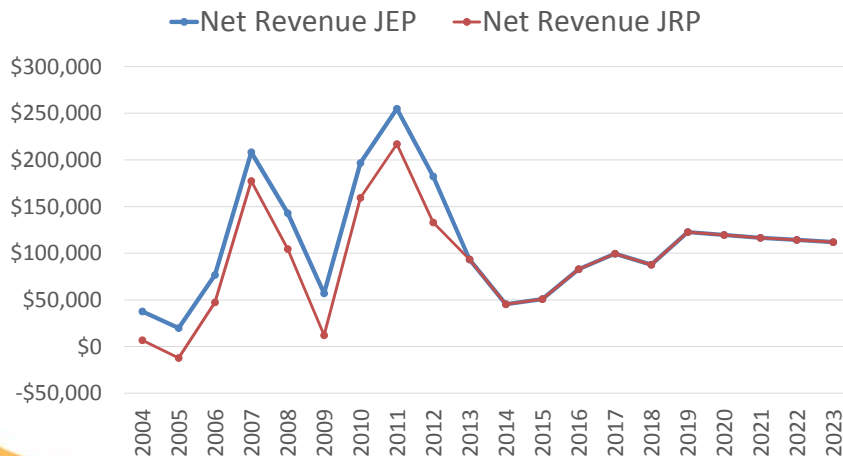
Assumptions

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

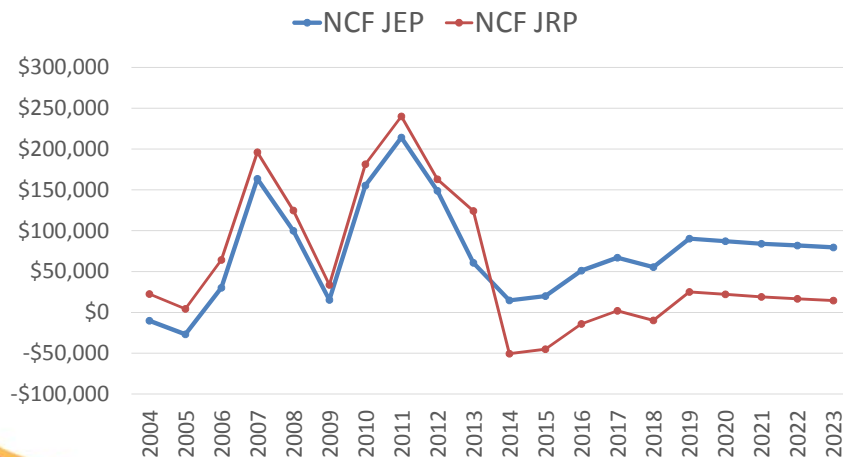
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Net Revenue from Corn/Beans: JEP vs JRP

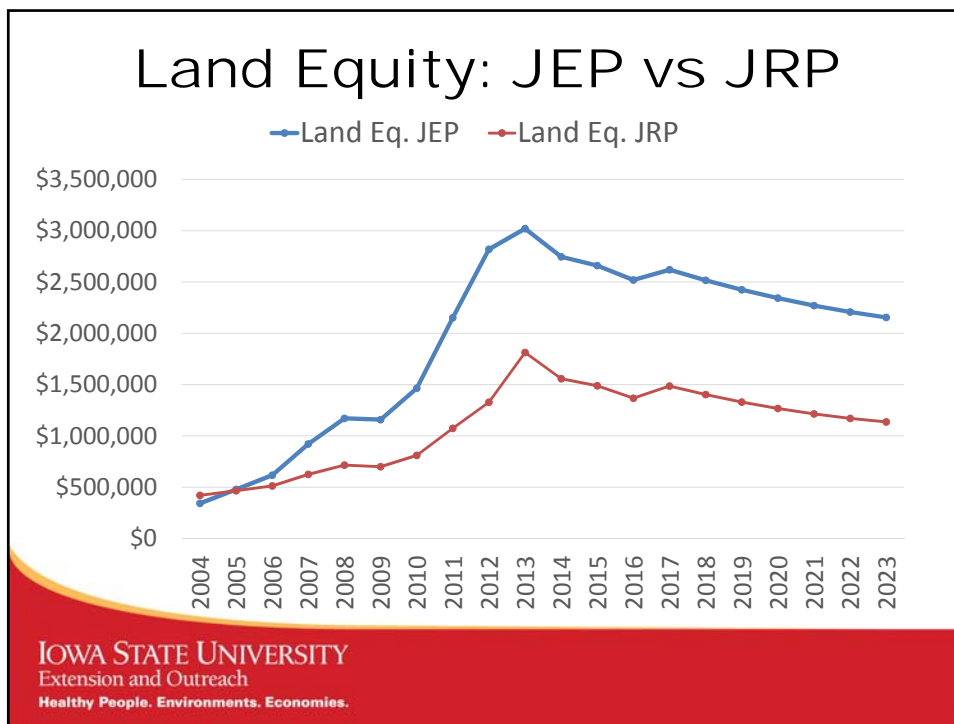


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Net Cash Flow: JEP vs JRP



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JEarlyP:

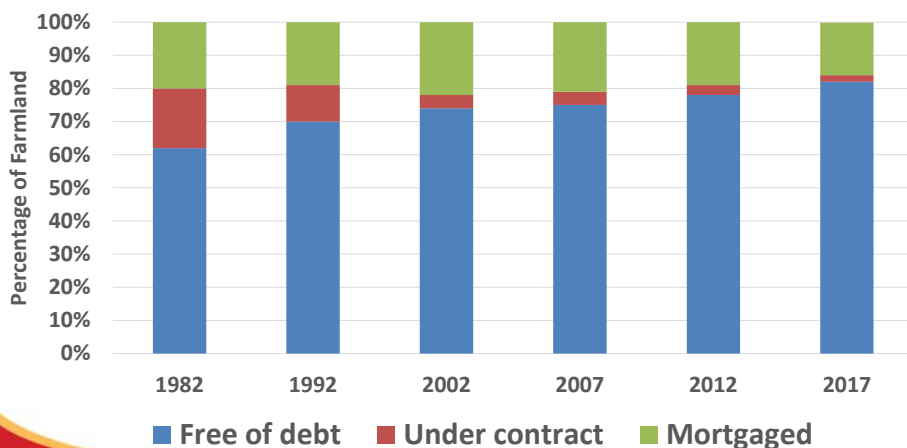
- Stable NFI
- Able to cash flow
- Equity loss

JRecentP:

- Stable NFI
- Able to cash flow, but barely
- Equity loss

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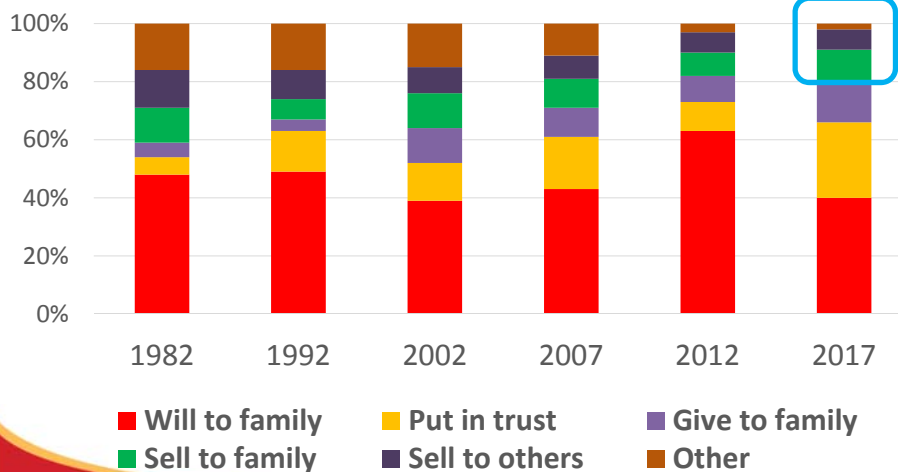
How is Iowa Farmland Financed?



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

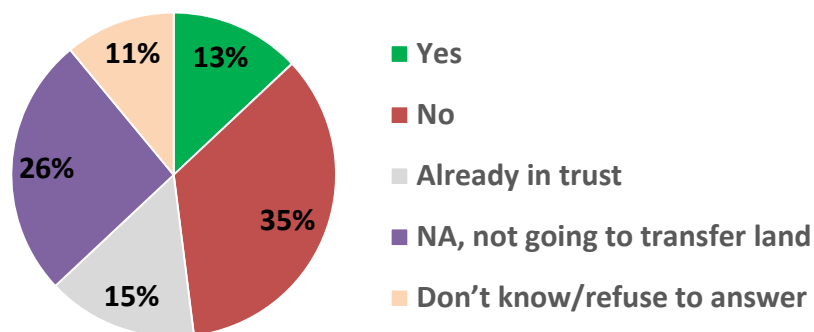
Percentage of Iowa Farmland by Anticipated Transfer Method



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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



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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

Associate Contact Information

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Mark Olsen 318 N. Fulton St. Newell, IA 50568 (712) 660-1597 mtolsen@iastate.edu	John E. Jensen 1414 Hobert St. Knoxville, IA 50138 (641) 842-5325 jejensen@windstream.net
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Newell, IA 50568
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Thank you for your attention

What questions do you have?

Alejandro Plastina

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plastina@iastate.edu

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