

Update on US Land Values and Cash Rents

Wendong Zhang

Assistant Professor, Economics and Center for Agricultural and Rural Development, Iowa State University

wdzhang@iastate.edu

515-294-2536

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:

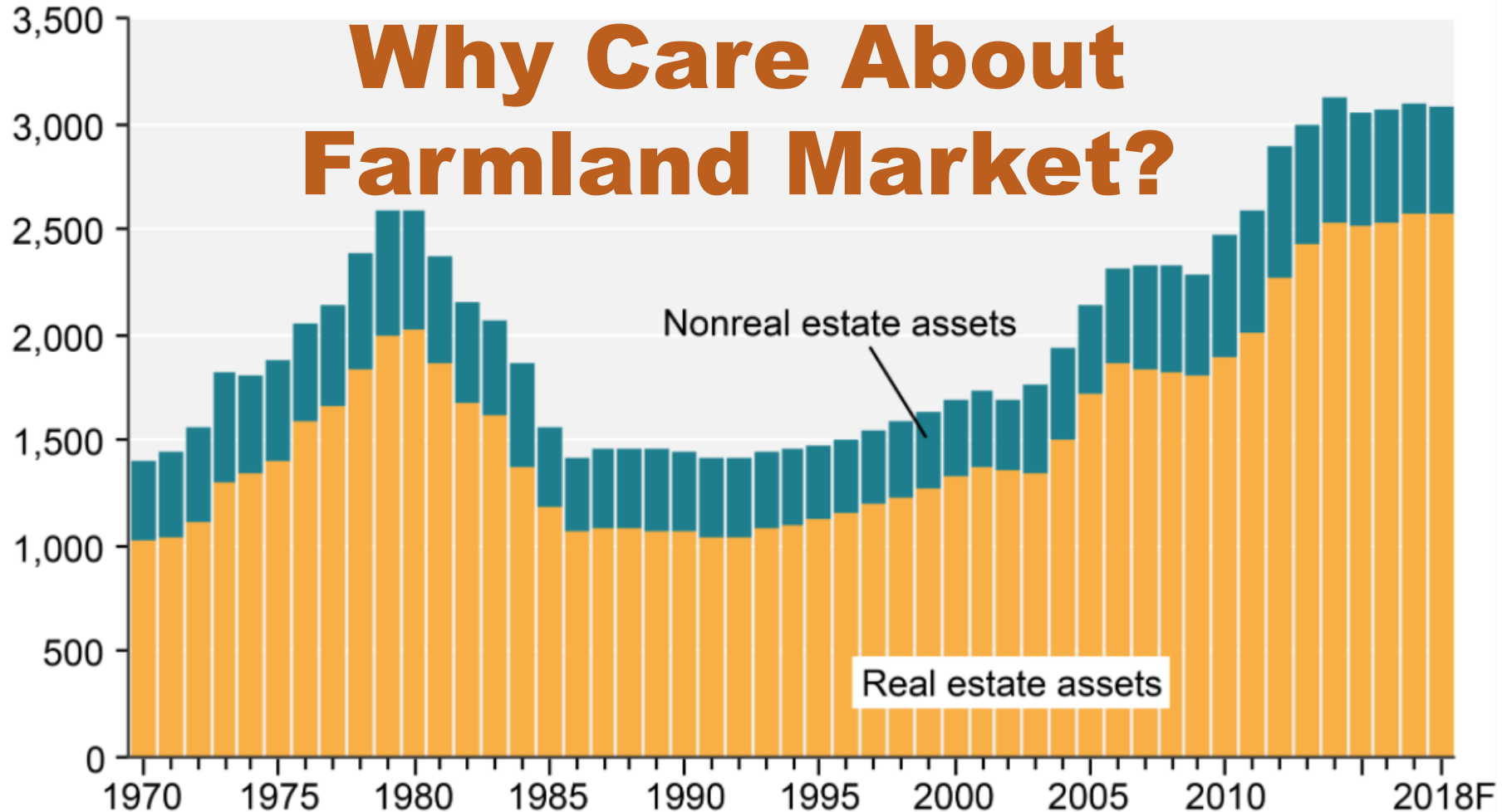
land value/ownership [www.card.iastate.edu/farmland/agriculture and the environment](http://www.card.iastate.edu/farmland/agriculture_and_the_environment)

ISU China Ag center www.card.iastate.edu/china

Farm sector assets, inflation adjusted, 1970-2018F

\$ billion (2018)

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).

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

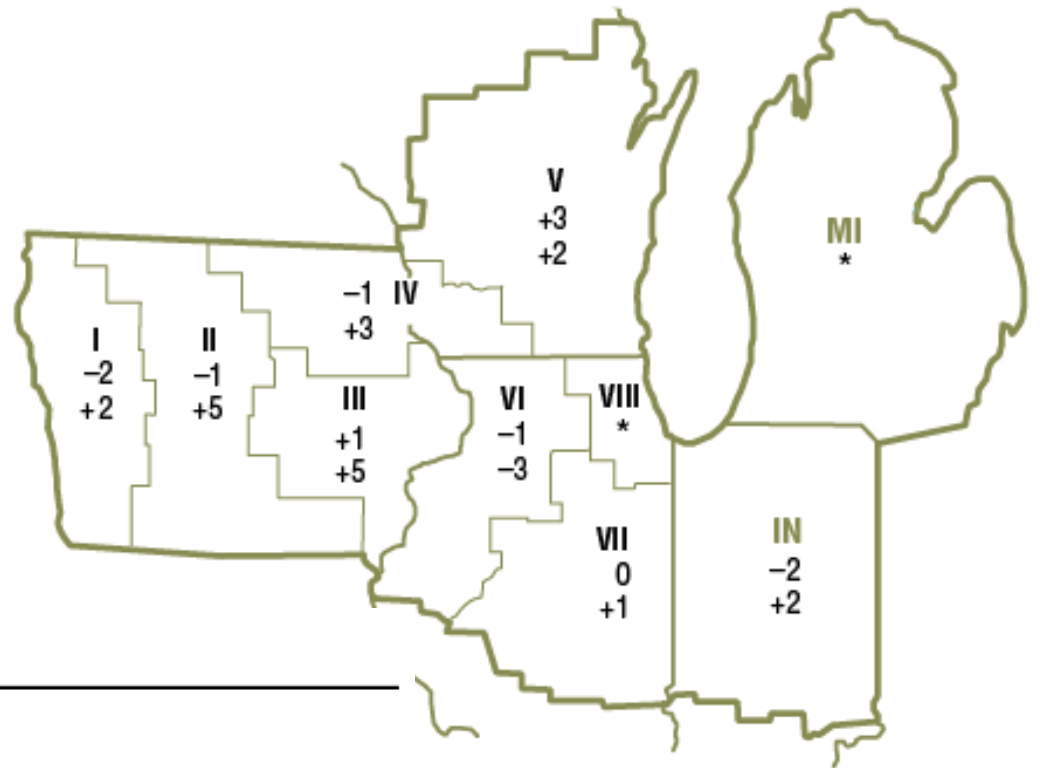
Data as of February 7, 2018.

Percent change in dollar value of "good" farmland

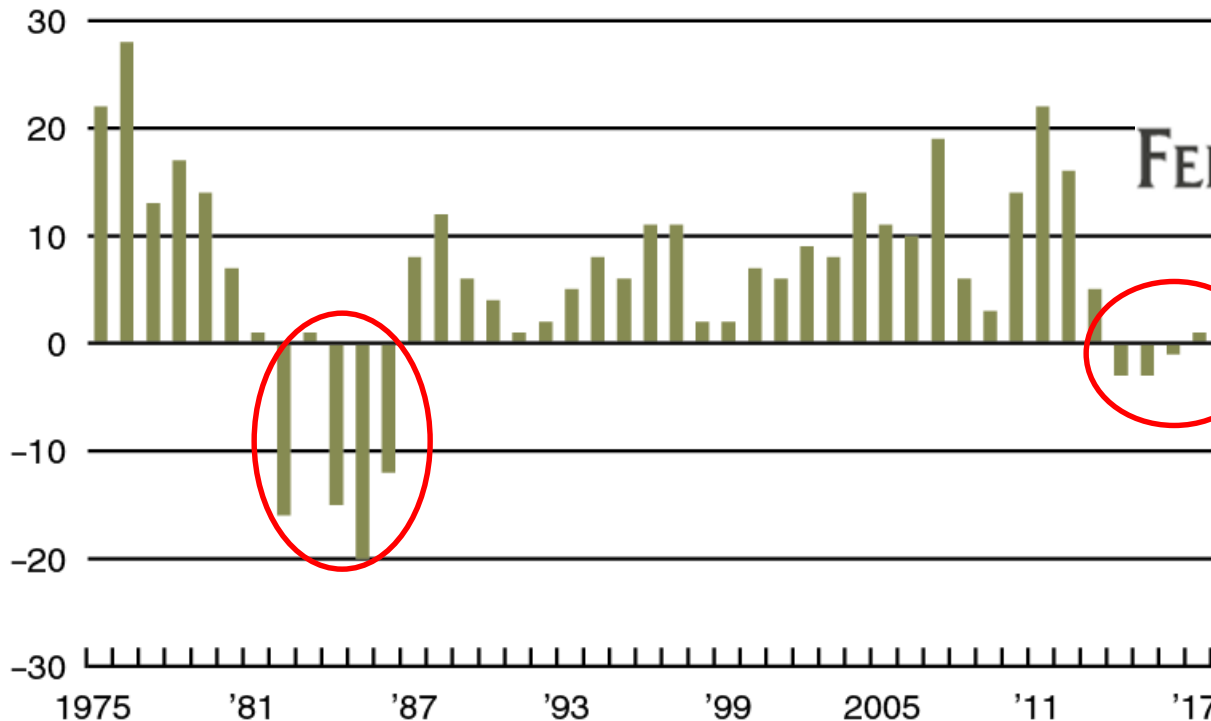
Top: October 1, 2017 to January 1, 2018

Bottom: January 1, 2017 to January 1, 2018

	October 1, 2017 to January 1, 2018	January 1, 2017 to January 1, 2018
Illinois	0	-1
Indiana	-2	+2
Iowa	0	+3
Michigan	*	*
Wisconsin	+2	+2
Seventh District	0	+1



percent



FEDERAL RESERVE BANK
of CHICAGO

AgLetter: February 2018

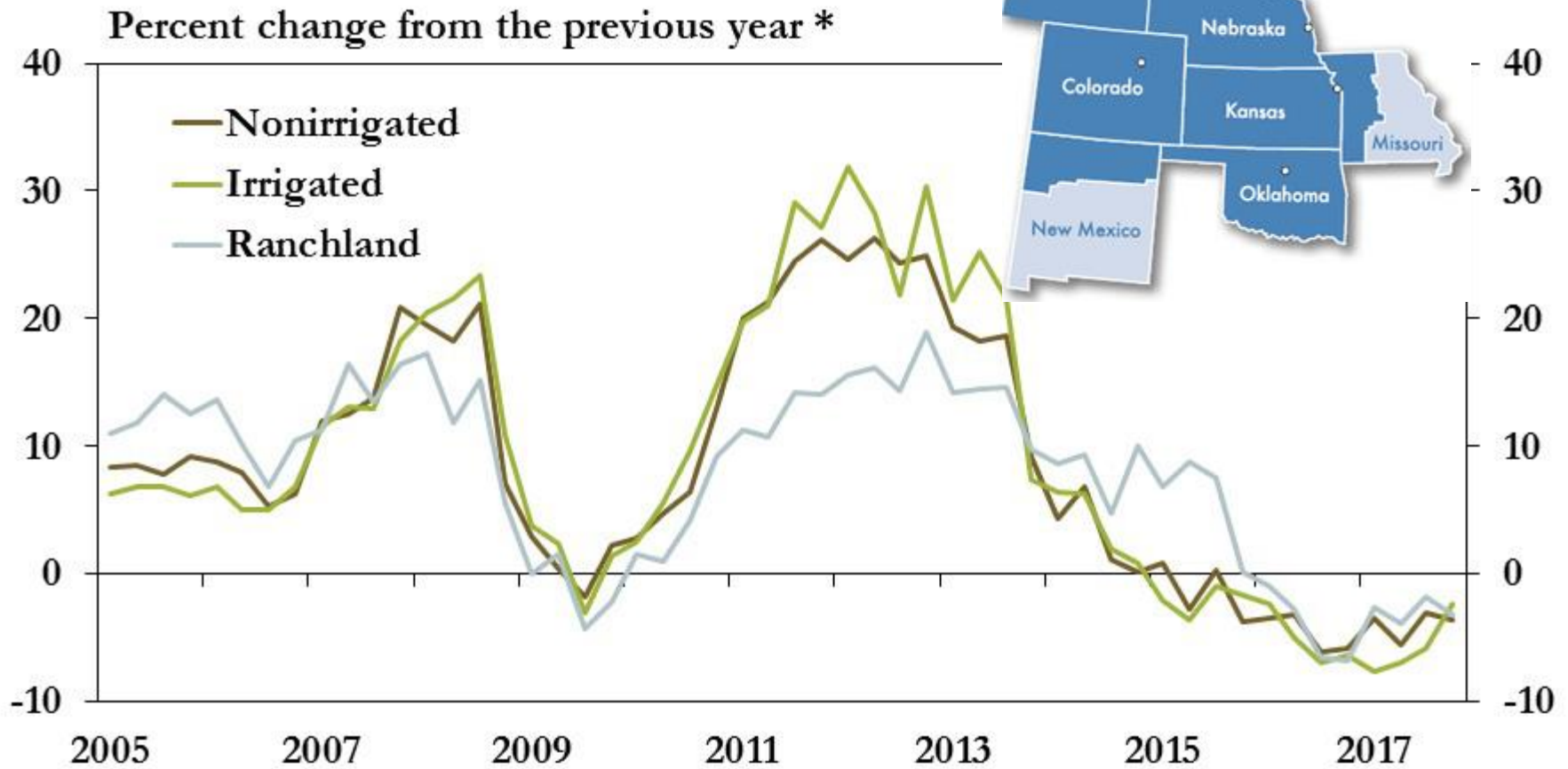
By David Oppedahl

Farmland Markets Provide Support Amid a Weak Ag Economy



Chart 1: Tenth District Farmland Values

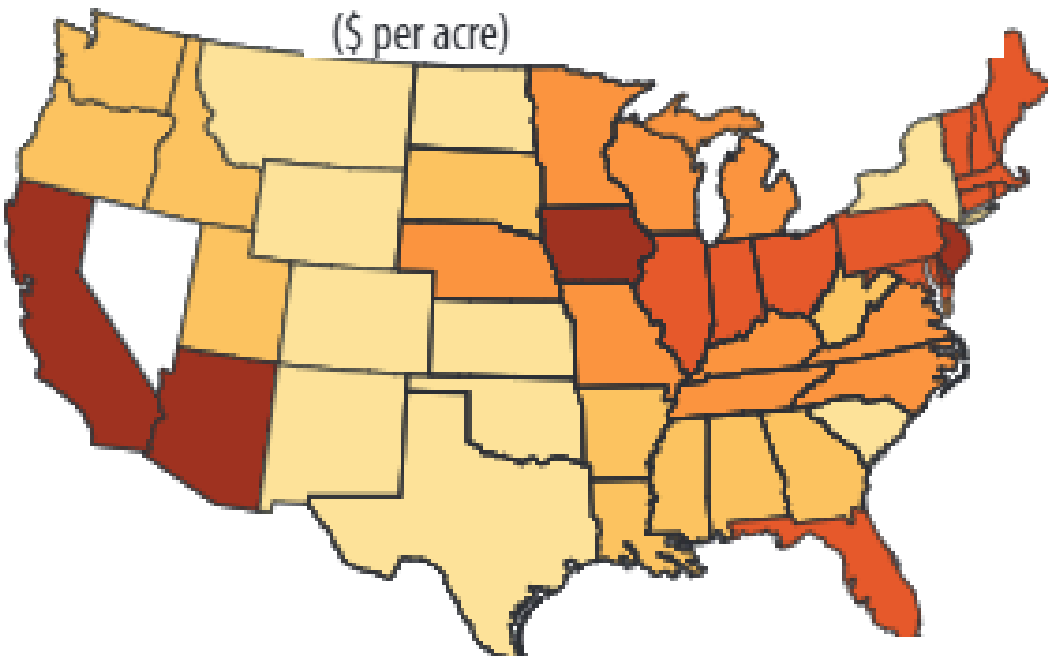
kcFED *Ag Credit SURVEY* FEBRUARY 15, 2018



* Percent changes are calculated using responses only from those banks reporting in both the past and the current quarters.

Fig. 2. Cropland Value by State, 2017

(\$ per acre)



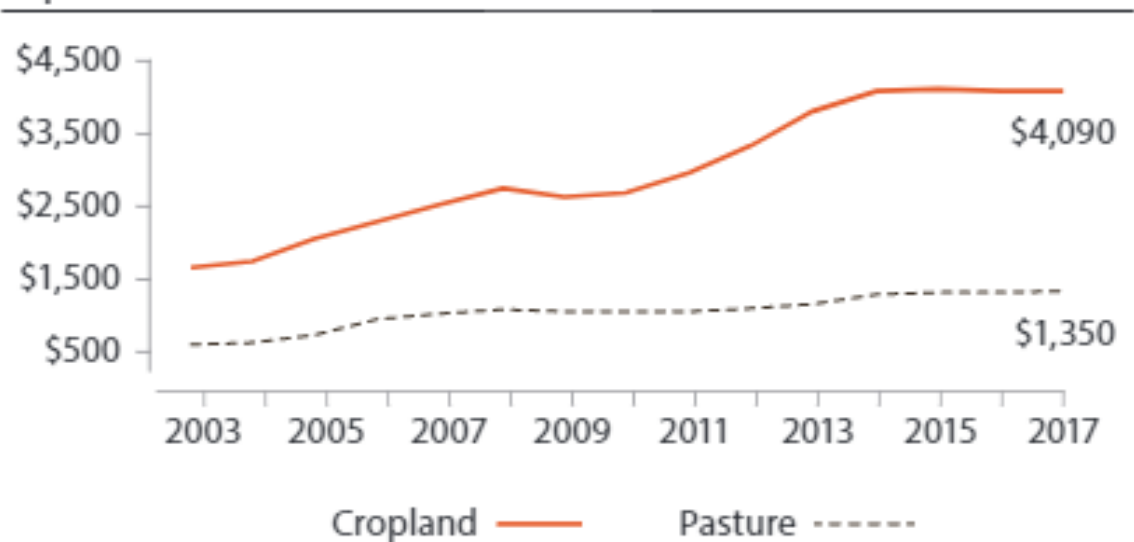
- >\$8,000
- \$5,701–\$8,000
- \$3,601–\$5,700
- \$2,601–\$3,600
- <\$2,601
- Not published

**USDA NASS June Area Survey
June 2016 to June 2017**

**Ag Real Estate Values: + 2.3%;
Cropland Values: No change;
Pasture Values: +1.5%**

Fig. 1. Value of U.S. Cropland and Pasture, 2003–2017

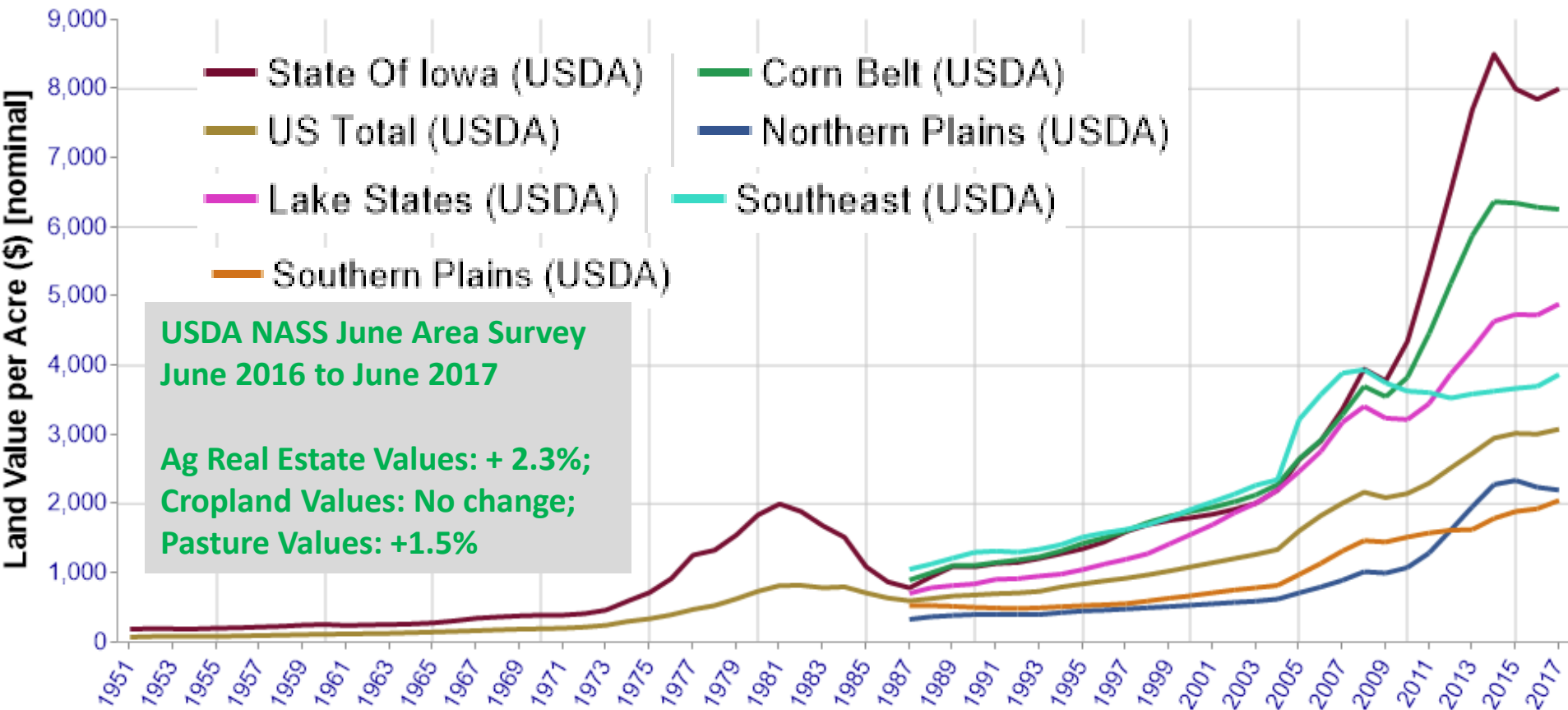
(\$ per acre)



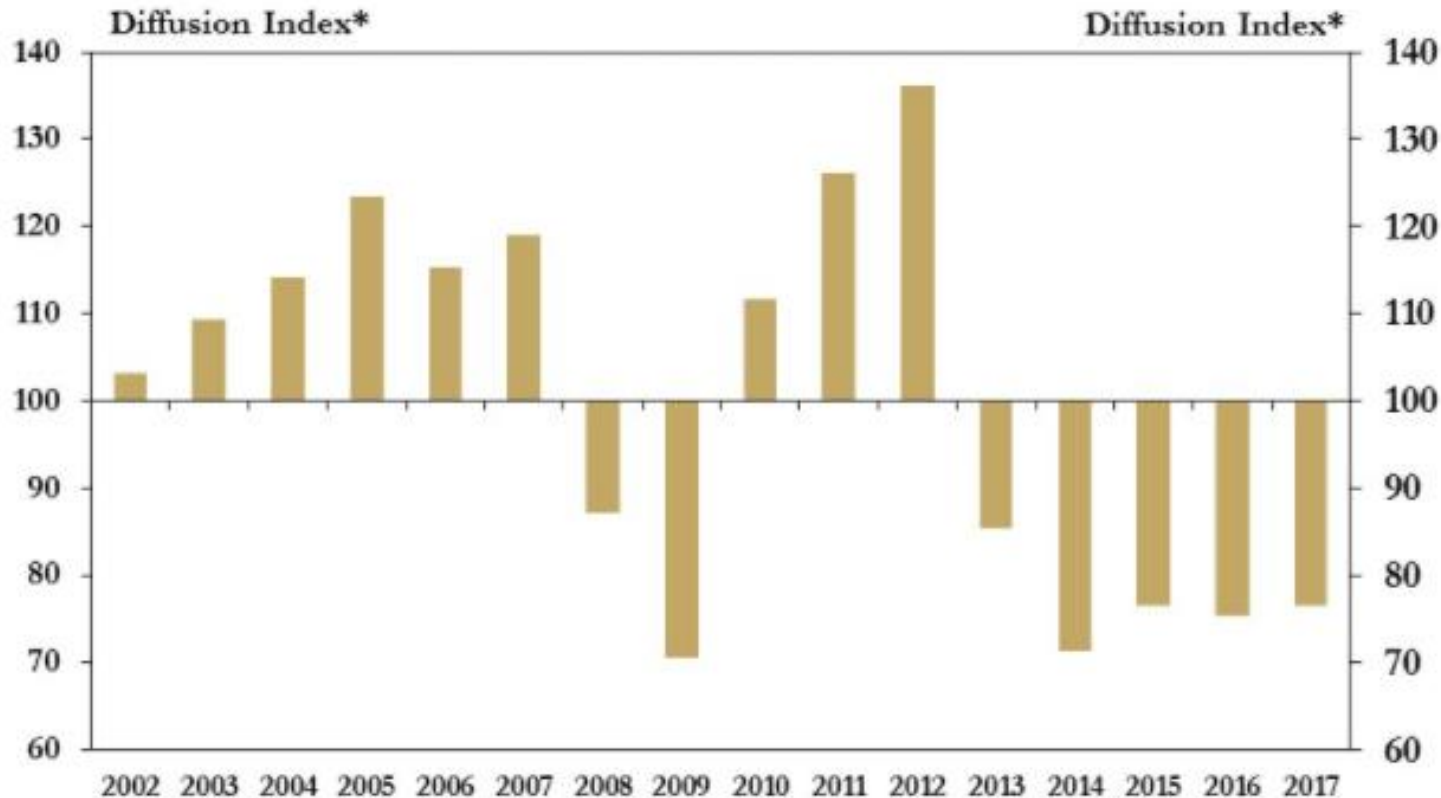
Stabilization in all US farmland markets



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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

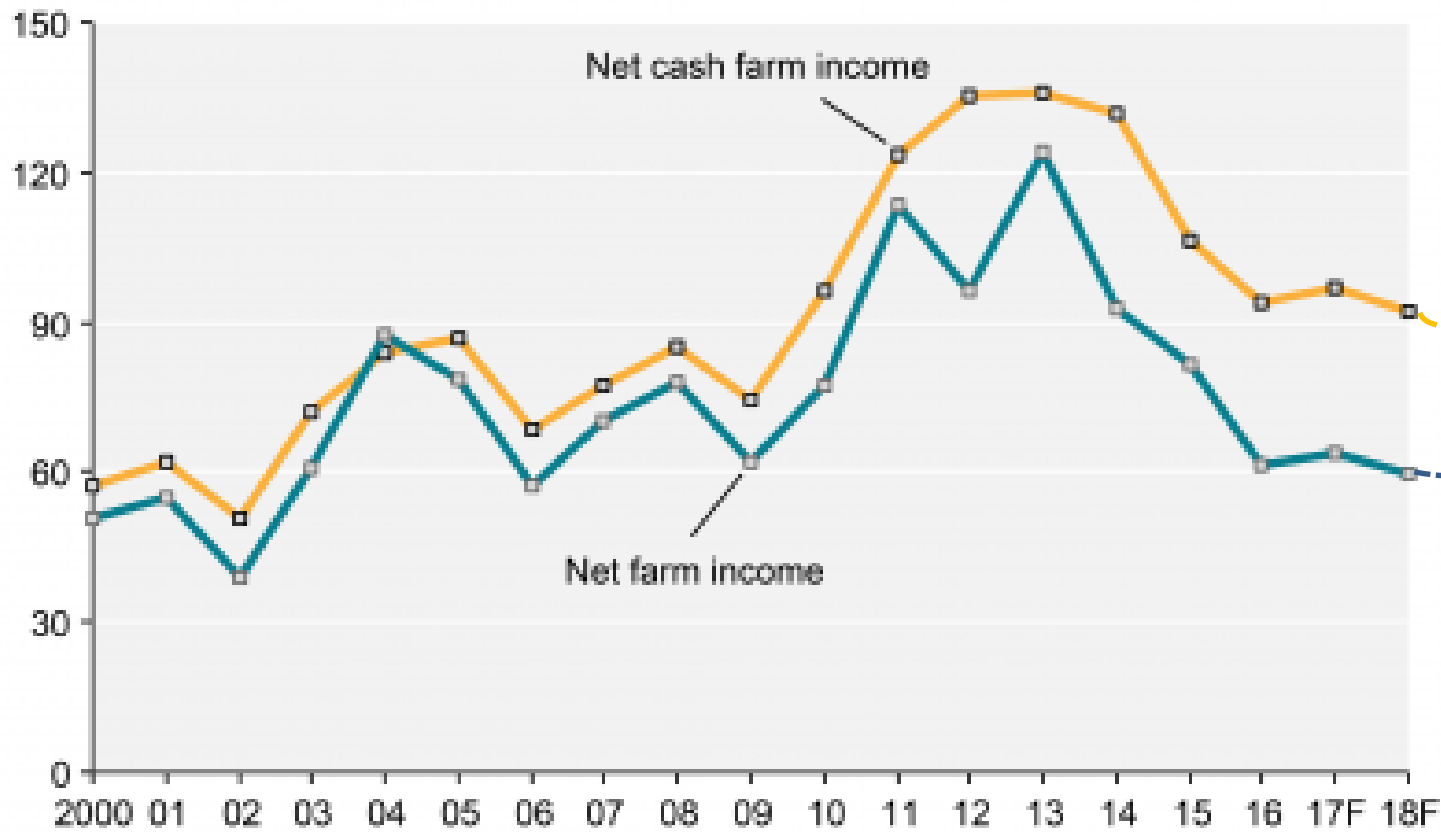
**Economic Fundamentals
that drive land value
haven't improved much**

**Land Value = localized
net income / universal
interest rate**

Net farm income and net cash farm income, 2000-18F

U.S. Total

\$ billion, nominal



**USDA
OCE
Forecast
to 2026**

Note: F = forecast.

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

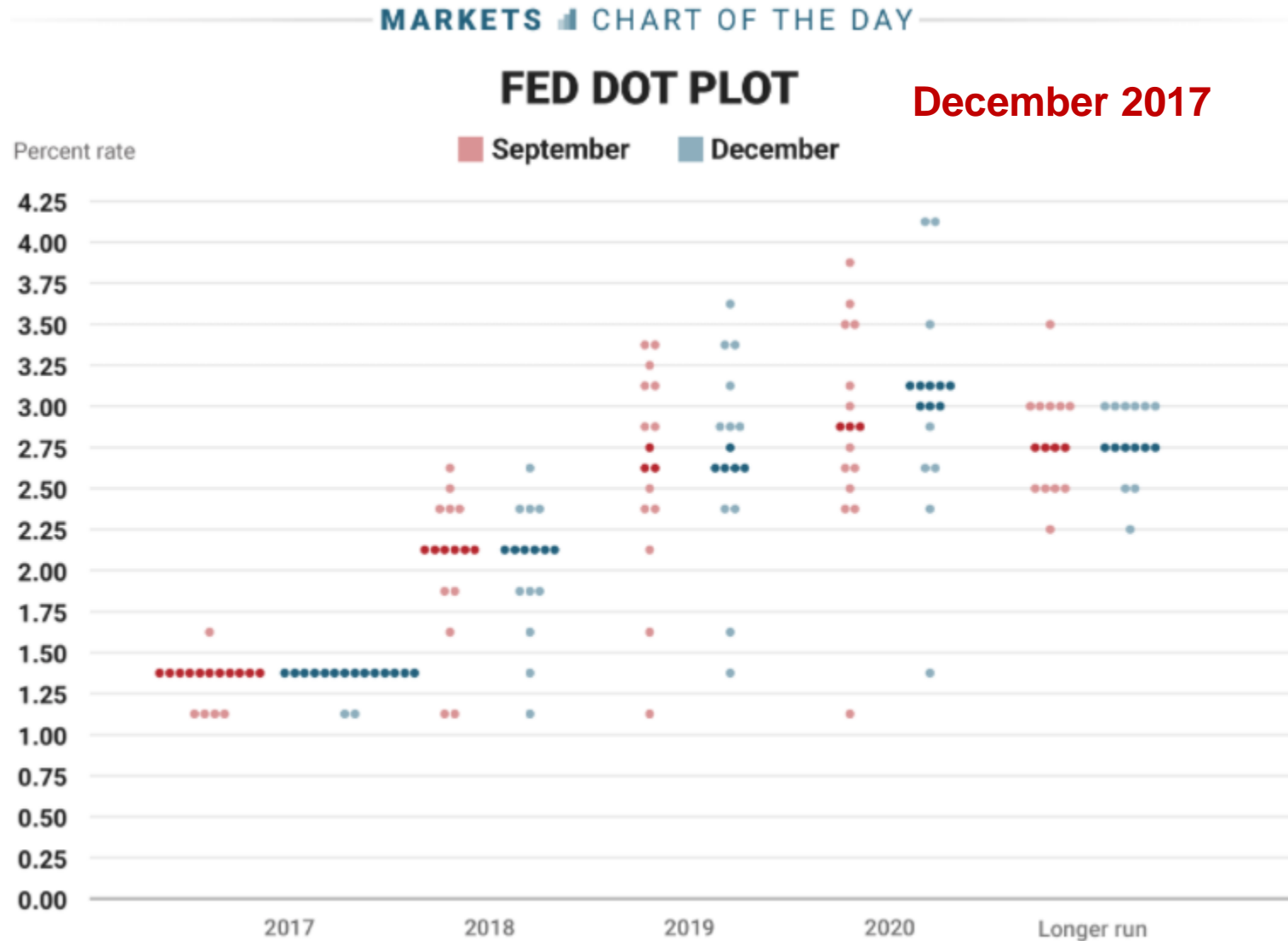
Data as of February 7, 2018.



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.”

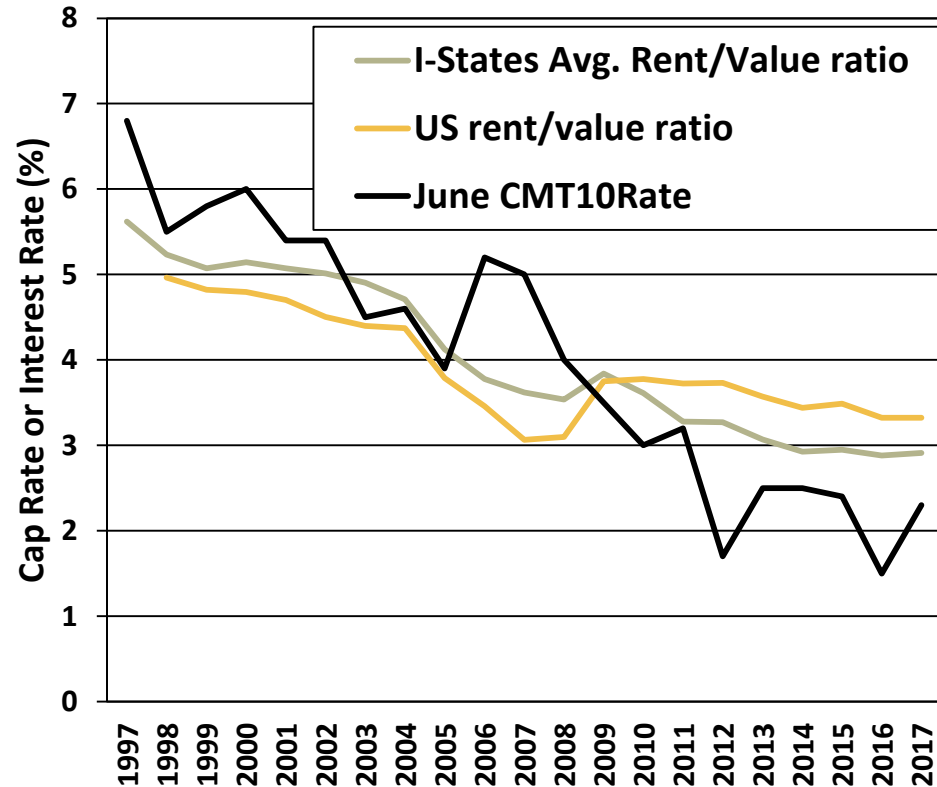
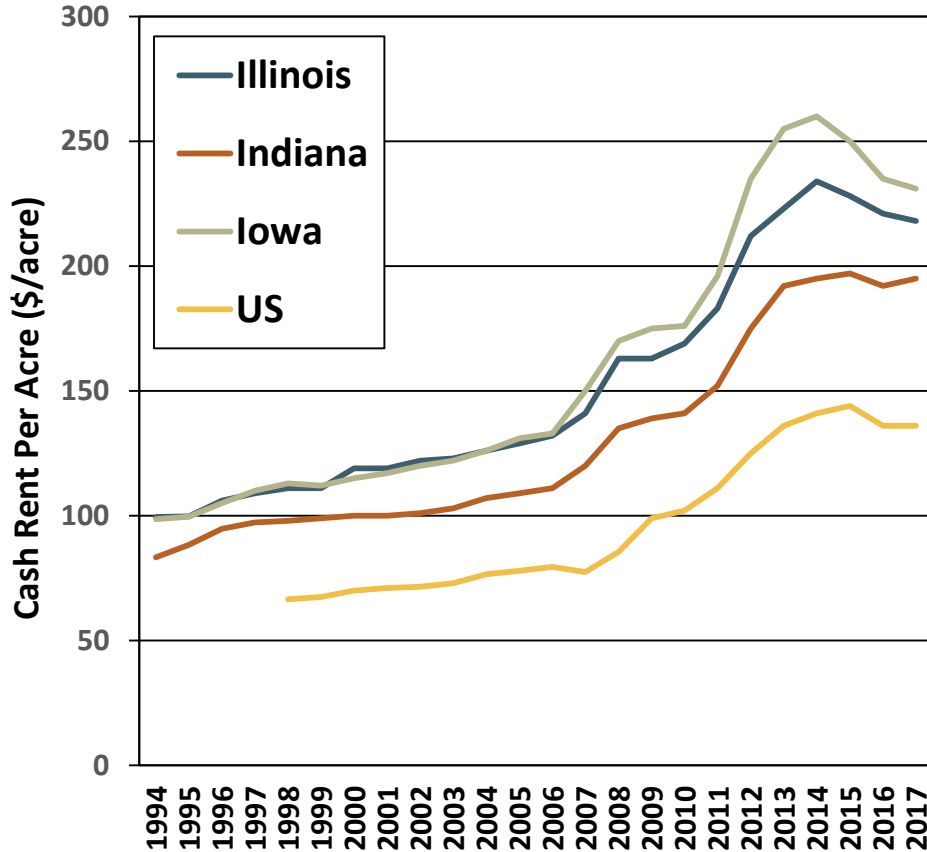
Long-term interest rate expectations

What the Fed Reserve thinks the interest rate should be



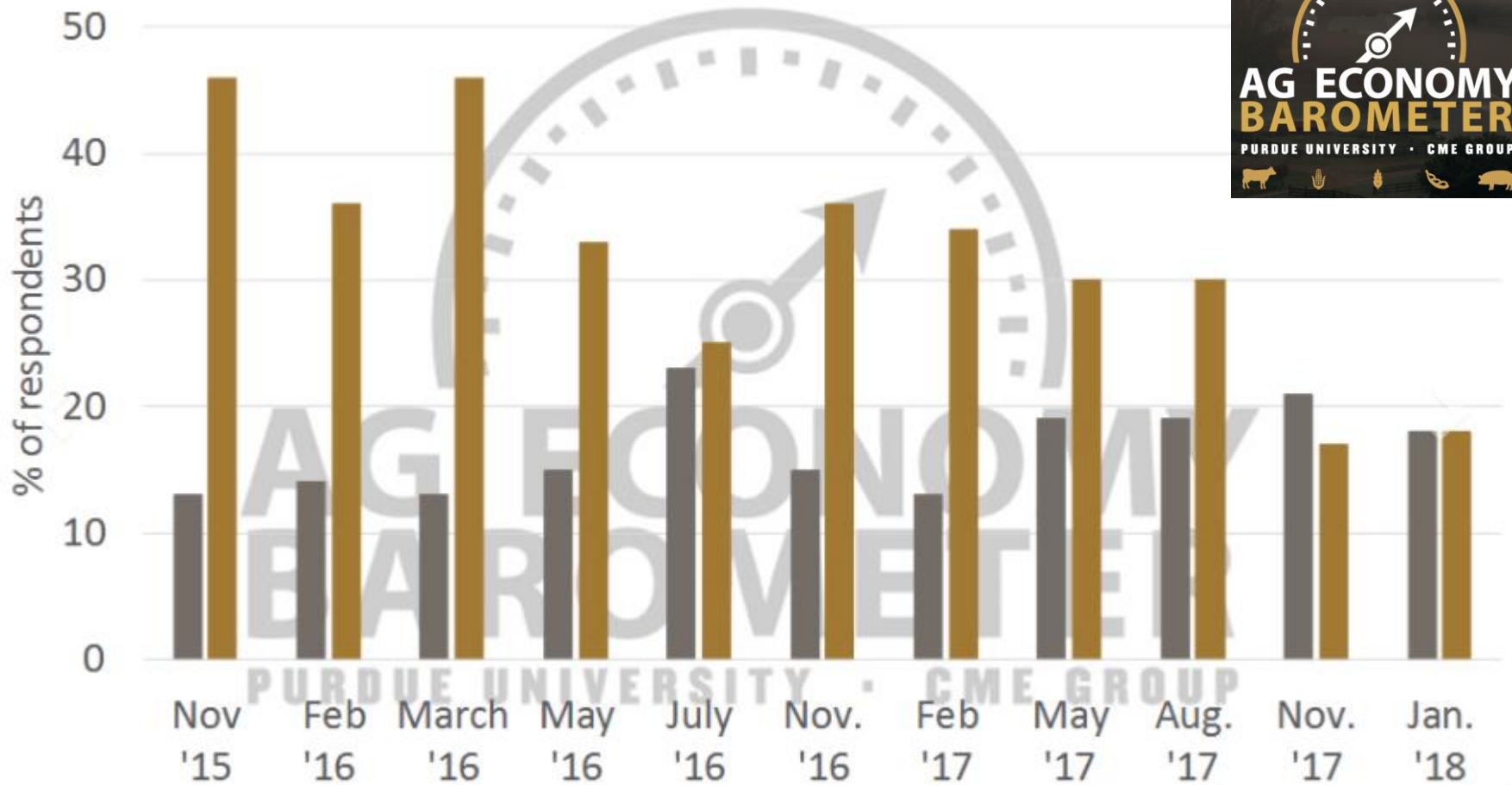
Left: Cash Rent Per Acre 1994-2017

Right: Cap Rate (Rent/Value) vs. CMT 10 Rate



Farmland Price Expectations, 12 months from now

■ Higher Farmland Prices ■ Lower Farmland Prices



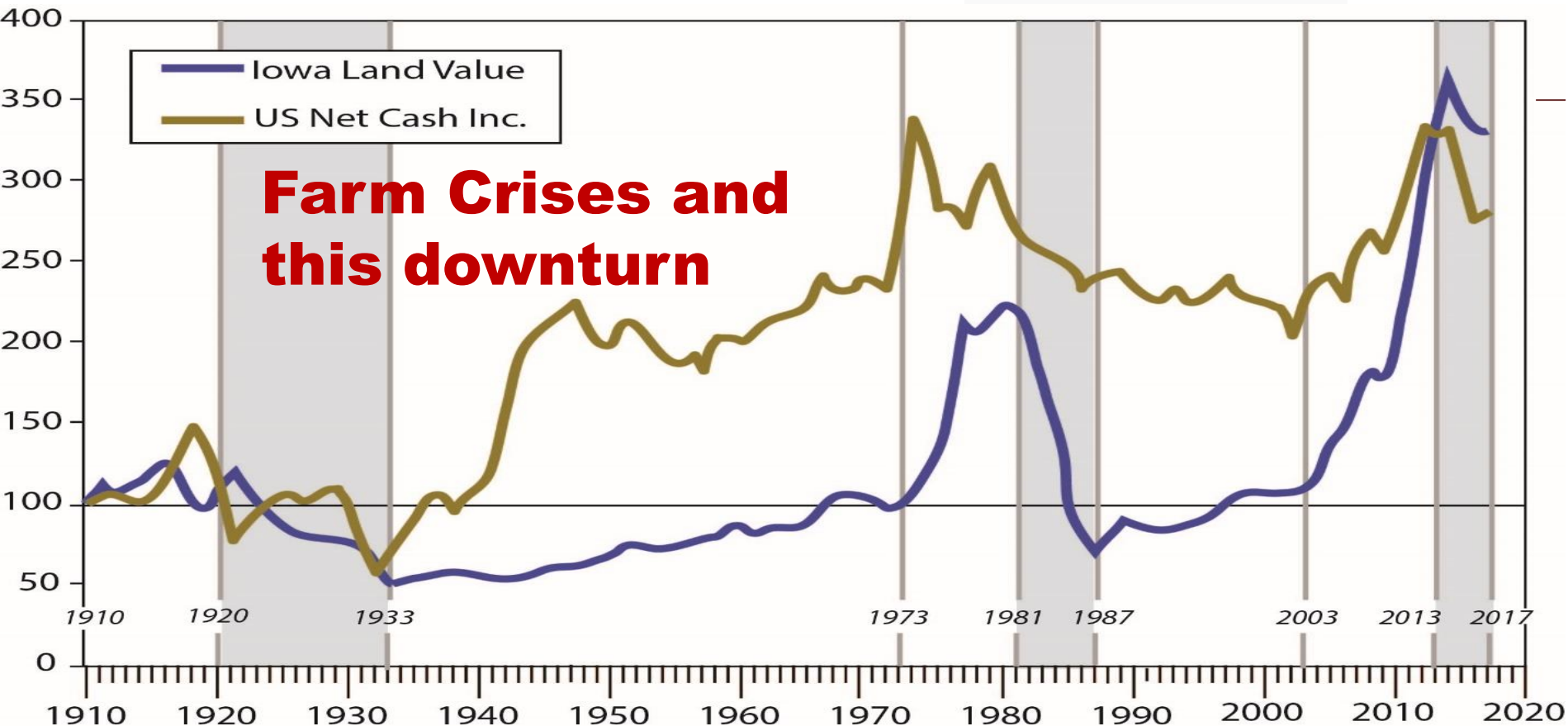
Most Recent Observation: Jan. 2018

Producer Survey

The Current Farm Downturn versus the 1920s and 1980s Farm Crises: An Economic and Regulatory Comparison

Agricultural Finance Review

Wendong Zhang, Kristine Tidgren



No Farm Crisis Reason 1: Strong, Real Income Accumulation 2003-2013

Average annual percent change in nominal values			
Golden Eras	<i>Iowa Land</i>	<i>U.S. Gross Income</i>	<i>U.S. Net Income</i>
<i>1910-1920</i>	9.3%	9.0%	8.4%
<i>1973-1981</i>	19.5%	9.8%	5.3%
<i>2003-2013</i>	13.7%	7.1%	10.7%
Crises and Declines	<i>Iowa Land</i>	<i>U.S. Gross Income</i>	<i>U.S. Net Income</i>
<i>1921-1933</i>	-8.9%	-4.7%	-3.6%
<i>1981-1987</i>	-14.0%	2.1%	7.3%
<i>2013-2017</i>	1.1%	-2.4%	-6.4%
Average annual percent change in inflation-adjusted values			
Golden Eras	<i>Iowa Land</i>	<i>U.S. Gross Income</i>	<i>U.S. Net Income</i>
<i>1910-1920</i>	1.7%	1.1%	0.5%
<i>1973-1981</i>	9.6%	0.7%	-3.4%
<i>2003-2013</i>	11.0%	4.5%	8.2%
Crises and Declines	<i>Iowa Land</i>	<i>U.S. Gross Income</i>	<i>U.S. Net Income</i>
<i>1921-1933</i>	-5.8%	-2.0%	-1.3%
<i>1981-1987</i>	-15.0%	-2.4%	2.7%
<i>2013-2017</i>	-0.1%	-3.7%	-7.6%

Source: Zhang and Tidgren 2018 Ag Finance Review

Landowners tend to hold the farmland; and many don't have debt

Years Owned by the same owner	% of Iowa Farmland
<10 years	24%
10-20 Years	21%
20-30 Years	19%
30-40 Years	15%
> 40 Years	20%

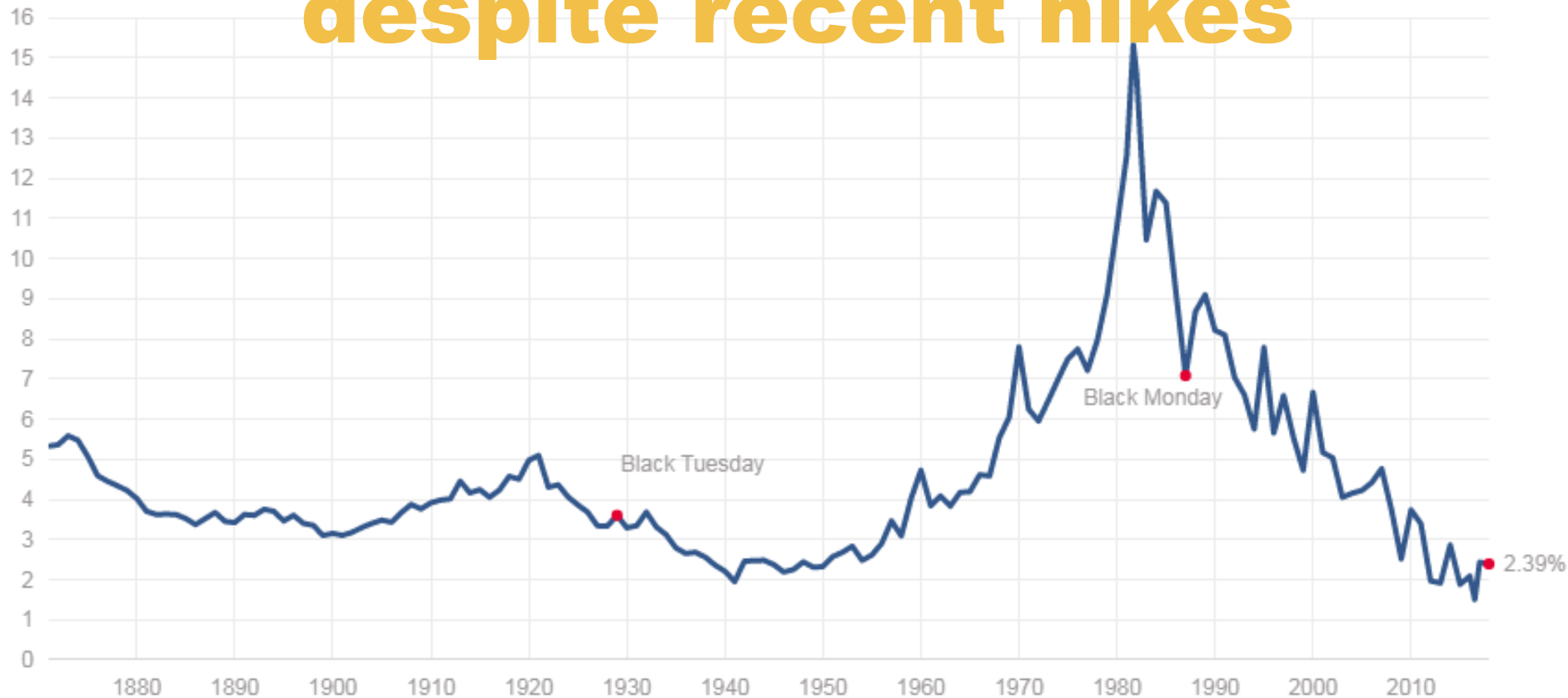
Table 3.5: Finance method as a percent of farmland

	1982	1992	2002	2007	2012
Free of debt	62%*	70%*	74%	75%	78%
Under contract	18%*	11%*	4%	4%	3%
Mortgaged	20%	19%	22%*	21%*	19%

* 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

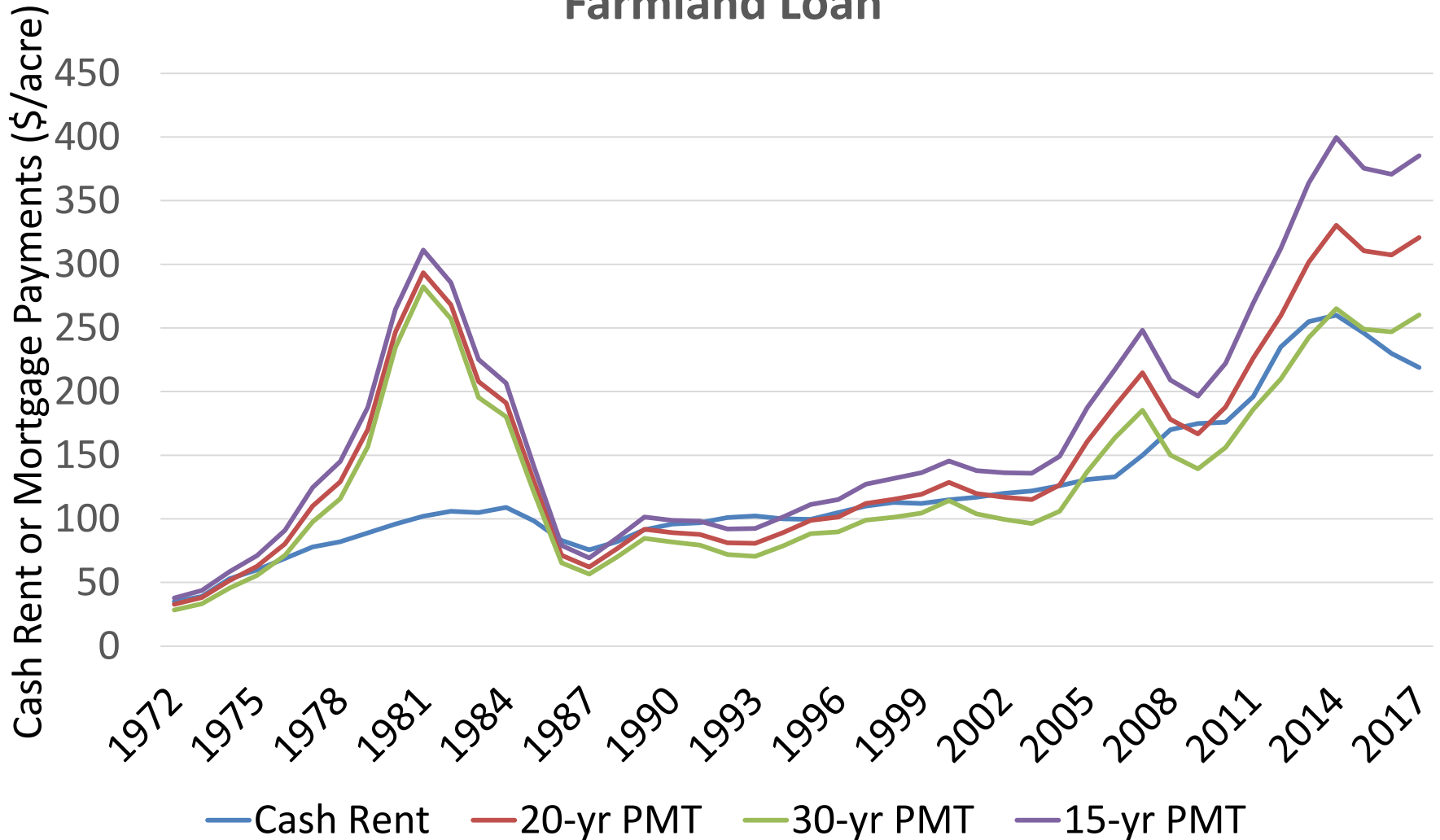
No Farm Crisis Reason 2: Historically low interest rates, despite recent hikes



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

Annual Mortgage Payments vs. Cash Rents for Iowa Farmland Loan



<https://www.card.iastate.edu/farmland>

Iowa Farmland Value Portal

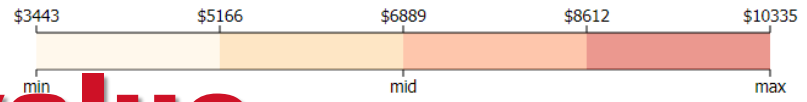
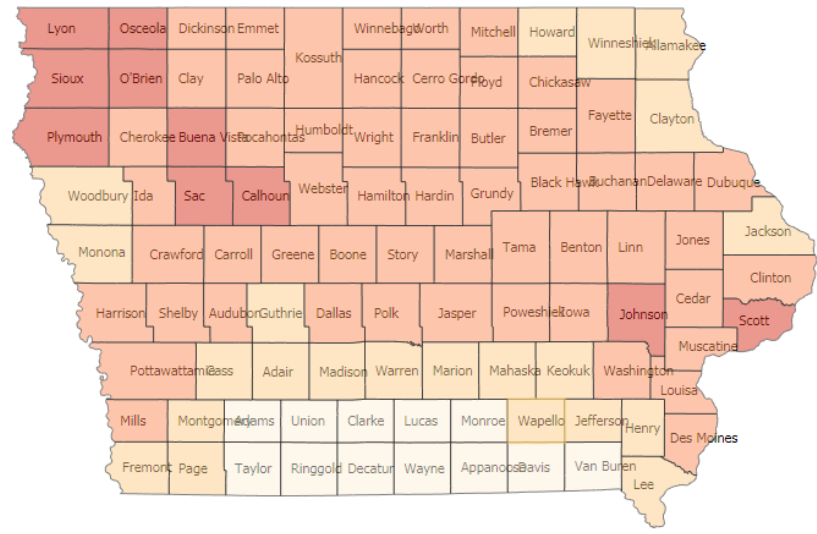


#ISUlandvalue

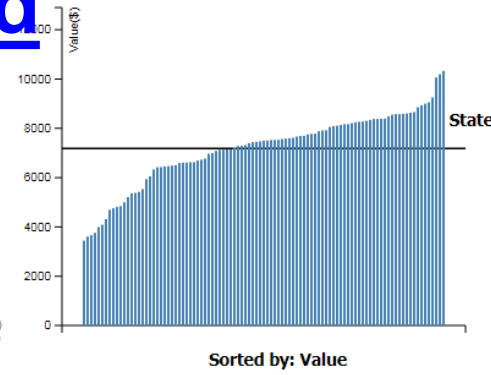


<http://bit.ly/LandResults2017>

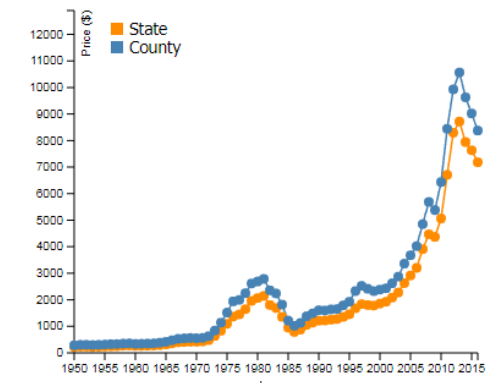
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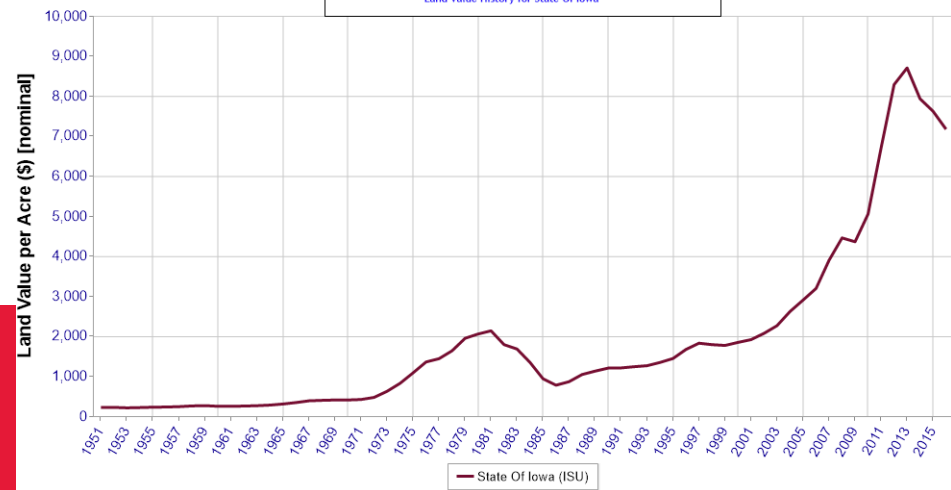
Iowa County Land Value in 2016



Land Value Trend in County: Story



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Center for Agricultural and Rural Development Extension and Outreach
Land Value History for State Of Iowa



https://www.card.iastate.edu/china



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Minghao Li, Wendong Zhang, Dermot Hayes, Riley Arthur, Yantao Yang, and Xiudong Wang. 2017. ["China's New Nationwide E10 Ethanol Mandate and Its Global Implications."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Wu, Qianrong, and Wendong Zhang. 2016. ["Of Maize and Markets: China's New Corn Policy."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Zhang, Wendong. 2015. ["The Commonalities and Differences between Chinese and US Agriculture."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

A corny tale

The
Economist

China imports a farm from Iowa

A slice of the Midwest outside Beijing

Presentations

Zhang, Wendong. 2017. ["Recent Developments in China and its Impacts on US Agriculture."](#) 2017 Pro-Ag Outlook, November 17, 2017.

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Lawrence, John, and Zhang, Wendong. 2017. ["Understanding the U.S. Farm Bill: Policy to Practice."](#) Presentation to the Chinese Ministry of Agriculture, Agricultural Trade Promotion Center Delegation, Ames, Iowa, May 30, 2017.

Zhang, Wendong. 2017. ["What's Going On in China: Corn, GMO, Crop Insurance and High-Speed Rails."](#) 2017 Crop Advantage Series, Okoboji, IA, January 5, 2017.

Thank You!

Wendong Zhang

Assistant Professor and Extension Economist

478C Heady Hall

Iowa State University

515-294-2536

wdzhang@iastate.edu

<http://www2.econ.iastate.edu/faculty/zhang>