

Iowa Land Values

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2017 U.S. Bank Ag Summit, Ames, IA, January 10th, 2017



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The new Mike Duffy



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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, land ownership, agriculture and the environment, China Ag

China's Provinces



My Hometown: Shenxian, Shandong Province



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莘县新闻网
<http://sx.lcxw.cn>

Intensification of Land-Use in China

Greenhouse – plastic film - Shandong Province

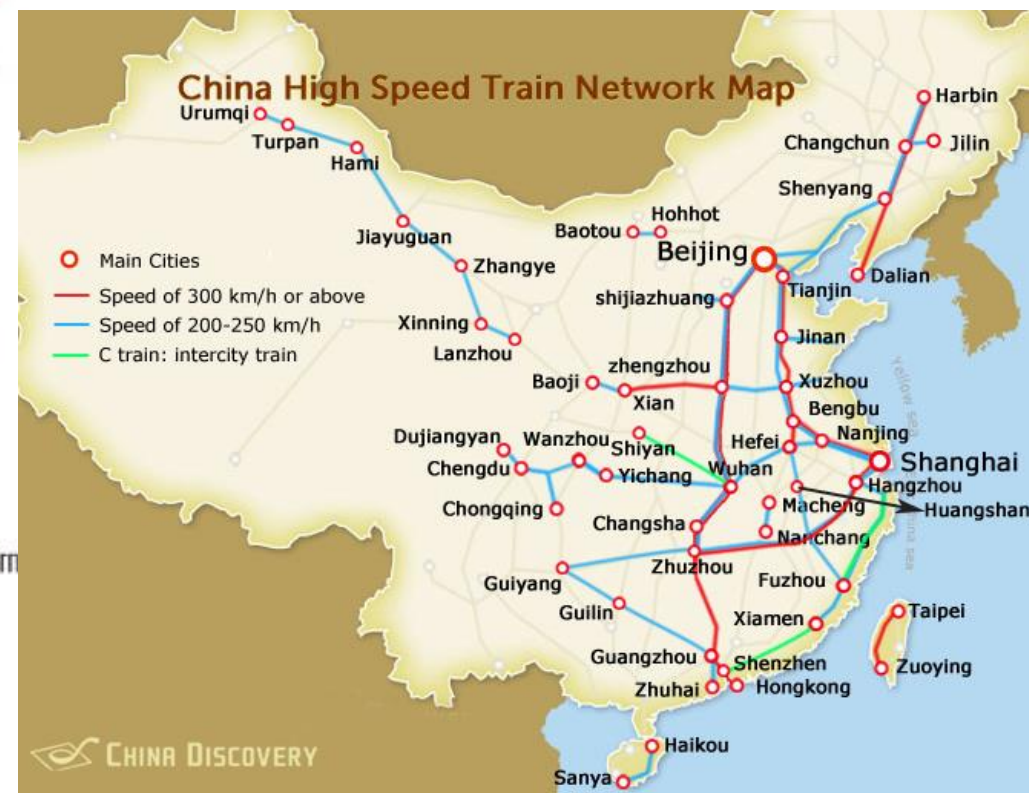


Planned Network of High-Speed Rail Lines to Be Built By 2030



Source: National Development and Reform

High-Speed Rail in China



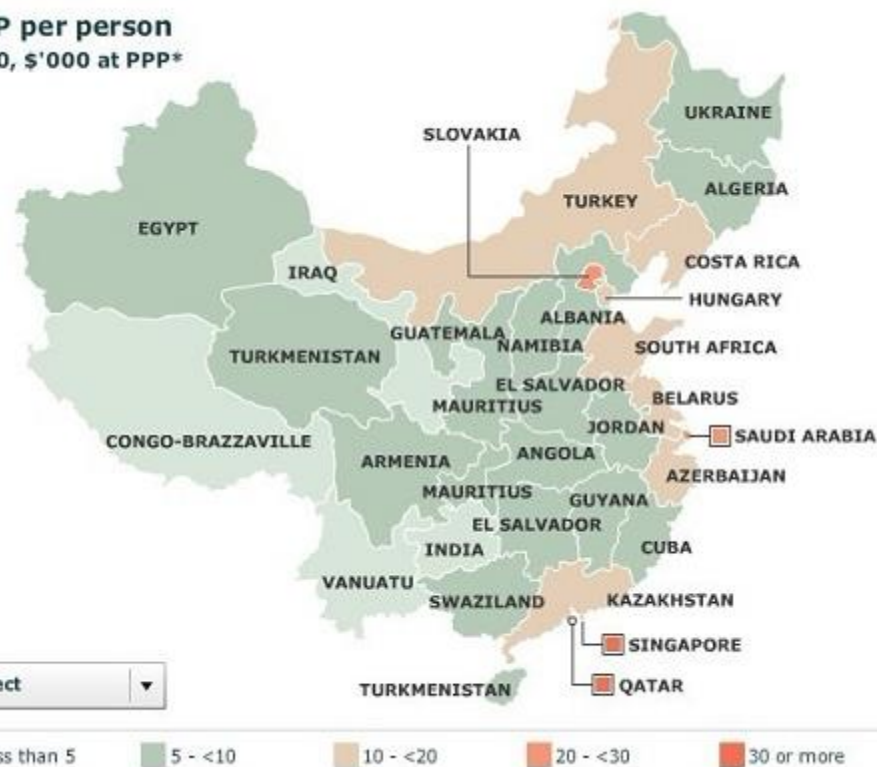
Nearest GDP equivalents

2010, \$bn



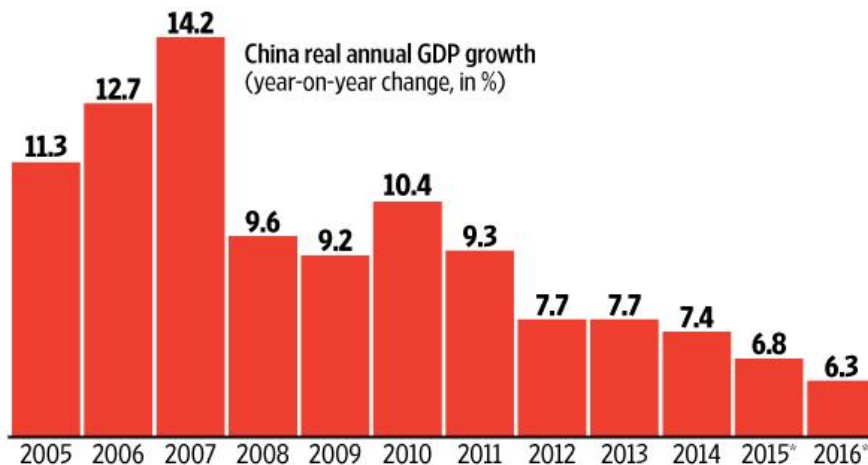
GDP per person

2010, \$'000 at PPP*



THE DRAGON SLOWS

Source: Economist
IMF



*Projected % change by International Monetary Fund

Source: Bloomberg

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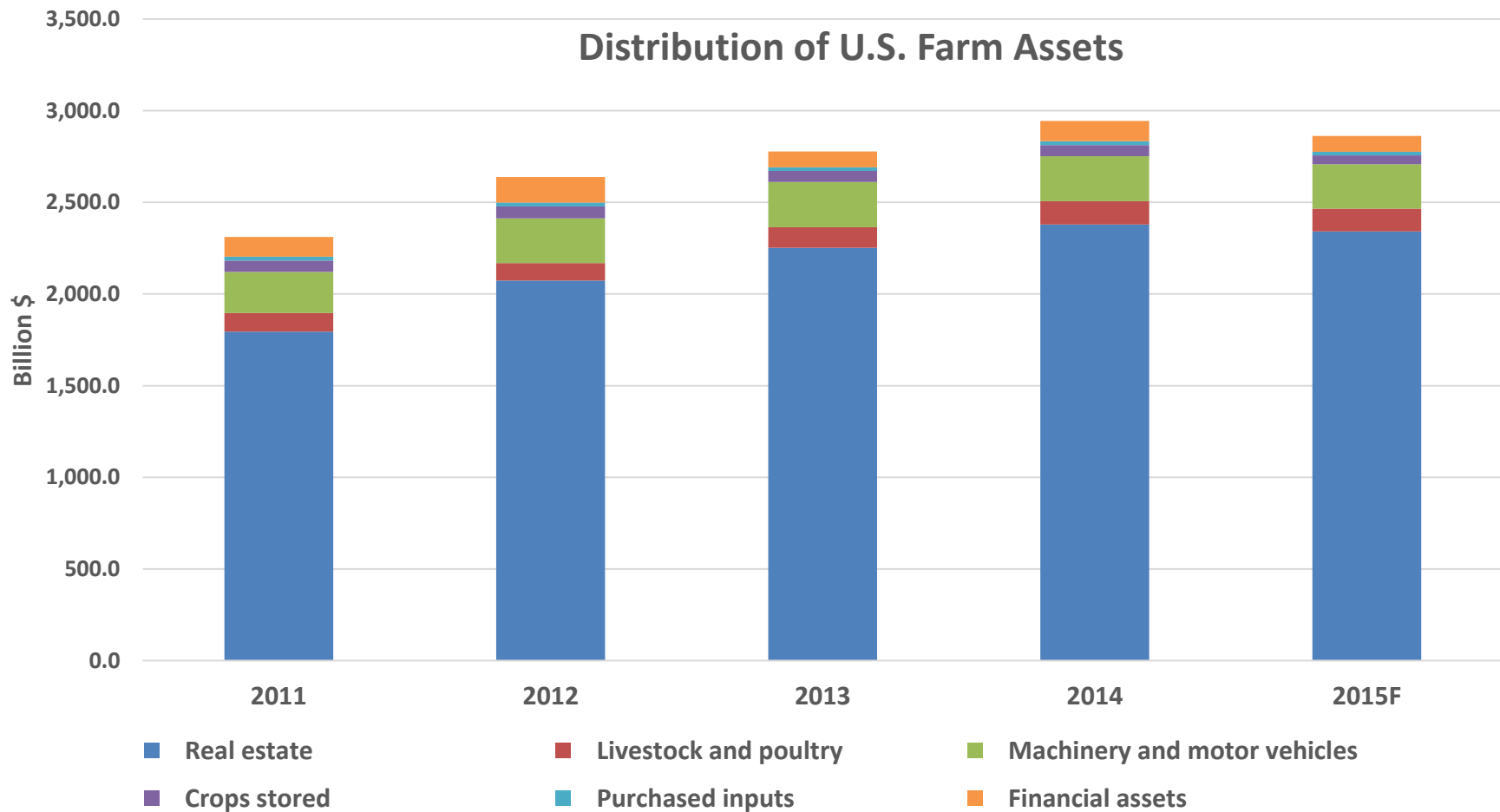
China vs. US

prev

	China	US
Total Population	1350.4 million	318.9 million
Gross agricultural production	555.2 billion \$	232.4 billion \$
Share of Agriculture in Total GDP	10.0%	1.3%
Share of Agriculture in Employment	35.0%	2.0%

	China	US
Number of Farmers	241.7 million	3.2 million
Number of Farms	200.2 million	2.1 million
Total Farmland Area	406.8 million acres	914.5 million acres
Corn Production Area	89.7 million acres	87.4 million acres
Soybean Production Area	16.9 million acres	76.3 million acres
Wheat Production Area	59.6 million acres	45.3 million acres
Total Size of Vegetable/Herb Greenhouses	83.6 million sq.ft.	61.8 sq.ft.
Average Farm Size	2.0 acres	433.6 acres

Why Care About Farmland Market?



Survey Respondents by Occupation, 2016

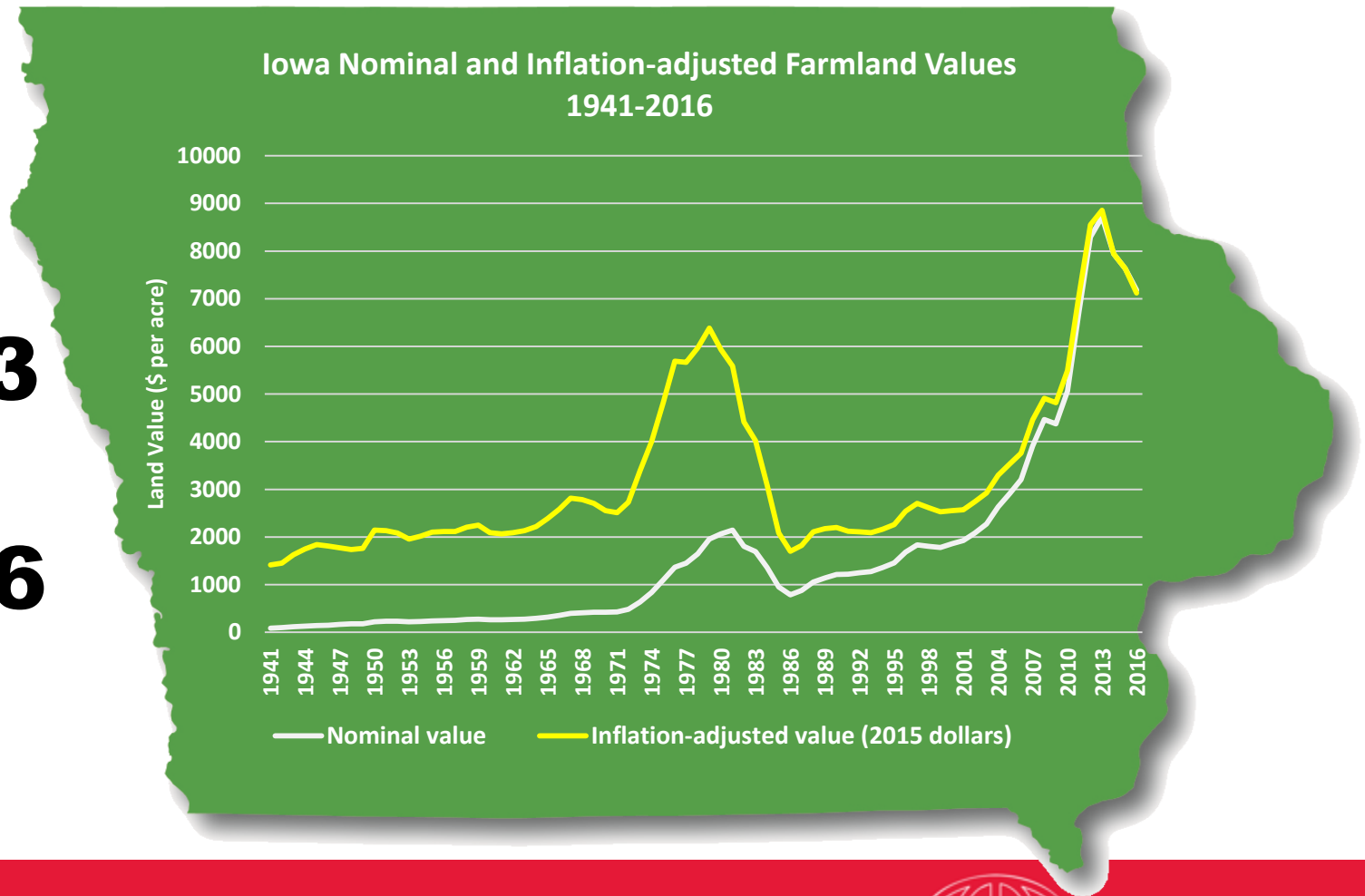
	Farm manager	Appraiser	Ag lender	Broker/ Realtor	Farmer /Landowner	Gov't	Other
PERCENT							
Northwest	17	5	33	32	3	9	1
North Central	14	14	31	19	5	16	2
Northeast	9	4	44	12	13	12	6
West Central	11	15	42	16	5	9	2
Central	24	16	27	15	7	9	1
East Central	14	12	34	22	7	8	3
Southwest	24	10	37	16	4	8	2
South Central	12	10	28	24	12	12	2
Southeast	7	22	34	10	17	10	0
STATE	15	11	34	19	8	10	2

AVERAGE VALUES

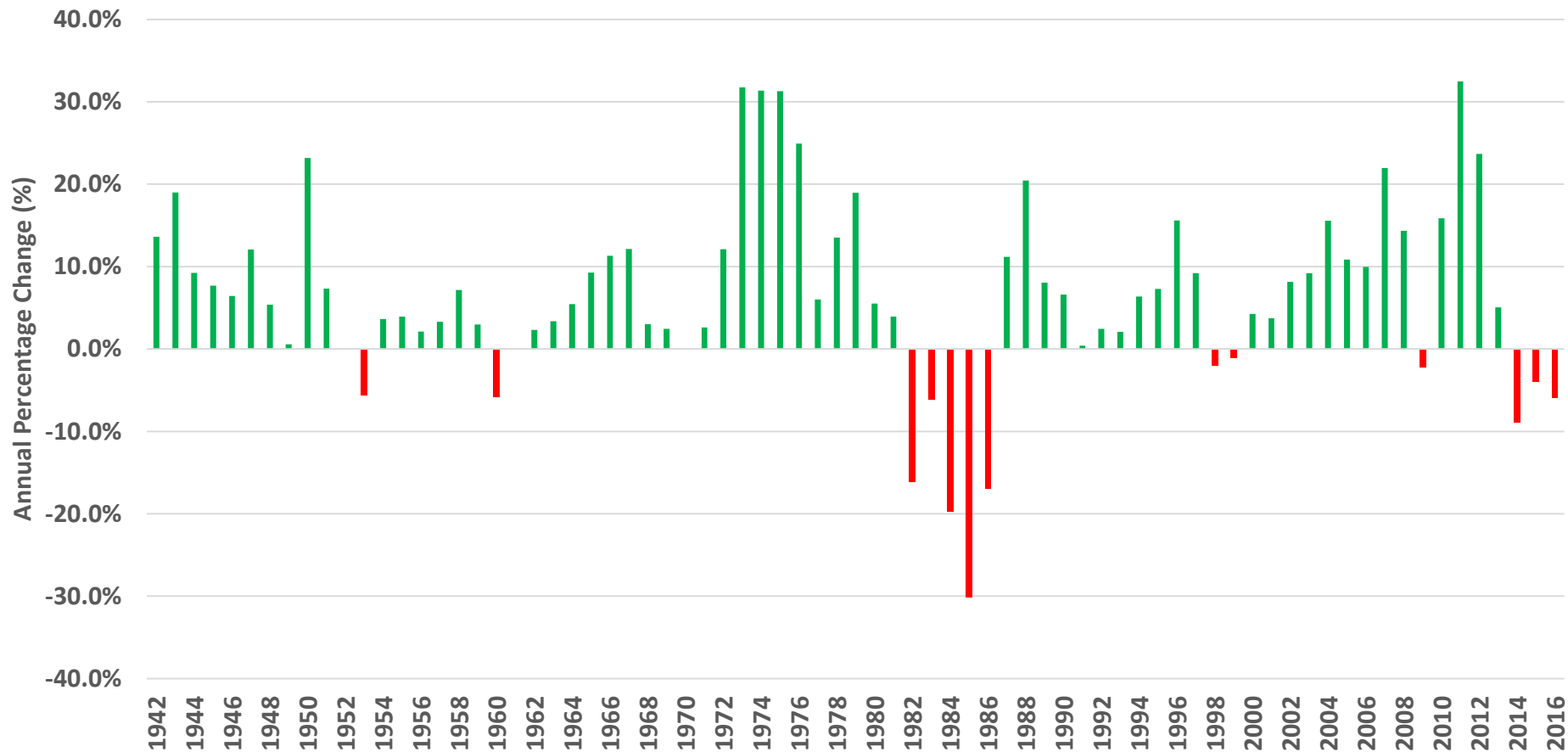
all farmland 1941-2016

\$7,183
As of
Nov 16

-5.9%



% Change in Nominal Iowa Farmland Values 1942-2016



Land Values by District and Land Quality, Nov 2016

District	Average Value	% Change	High Quality	% Change	Medium Quality	% Change	Low Quality	% Change
Northwest	\$9,243	-4.6%	\$10,650	-5.2%	\$8,468	-4.1%	\$6,019	-3.7%
North Central	\$7,562	-5.0%	\$8,442	-5.9%	\$6,992	-4.9%	\$5,164	-3.9%
Northeast	\$7,313	-7.0%	\$8,892	-7.1%	\$6,994	-6.2%	\$4,847	-7.5%
West Central	\$7,358	-8.7%	\$8,874	-8.4%	\$6,870	-9.4%	\$4,577	-9.9%
Central	\$7,841	-7.8%	\$9,299	-7.8%	\$7,186	-7.4%	\$5,158	-2.5%
East Central	\$7,917	-6.9%	\$9,502	-7.6%	\$7,396	-6.8%	\$5,153	-4.0%
Southwest	\$6,060	-4.9%	\$7,527	-6.3%	\$5,683	-5.9%	\$4,189	2.9%
South Central	\$4,241	-3.6%	\$5,980	-7.2%	\$4,128	-3.6%	\$2,892	5.2%
Southeast	\$6,716	-2.6%	\$9,265	-2.8%	\$6,283	-3.7%	\$3,783	-0.4%
Iowa Avg.	\$7,183	-5.9%	\$8,758	-6.5%	\$6,705	-5.9%	\$4,665	-3.5%

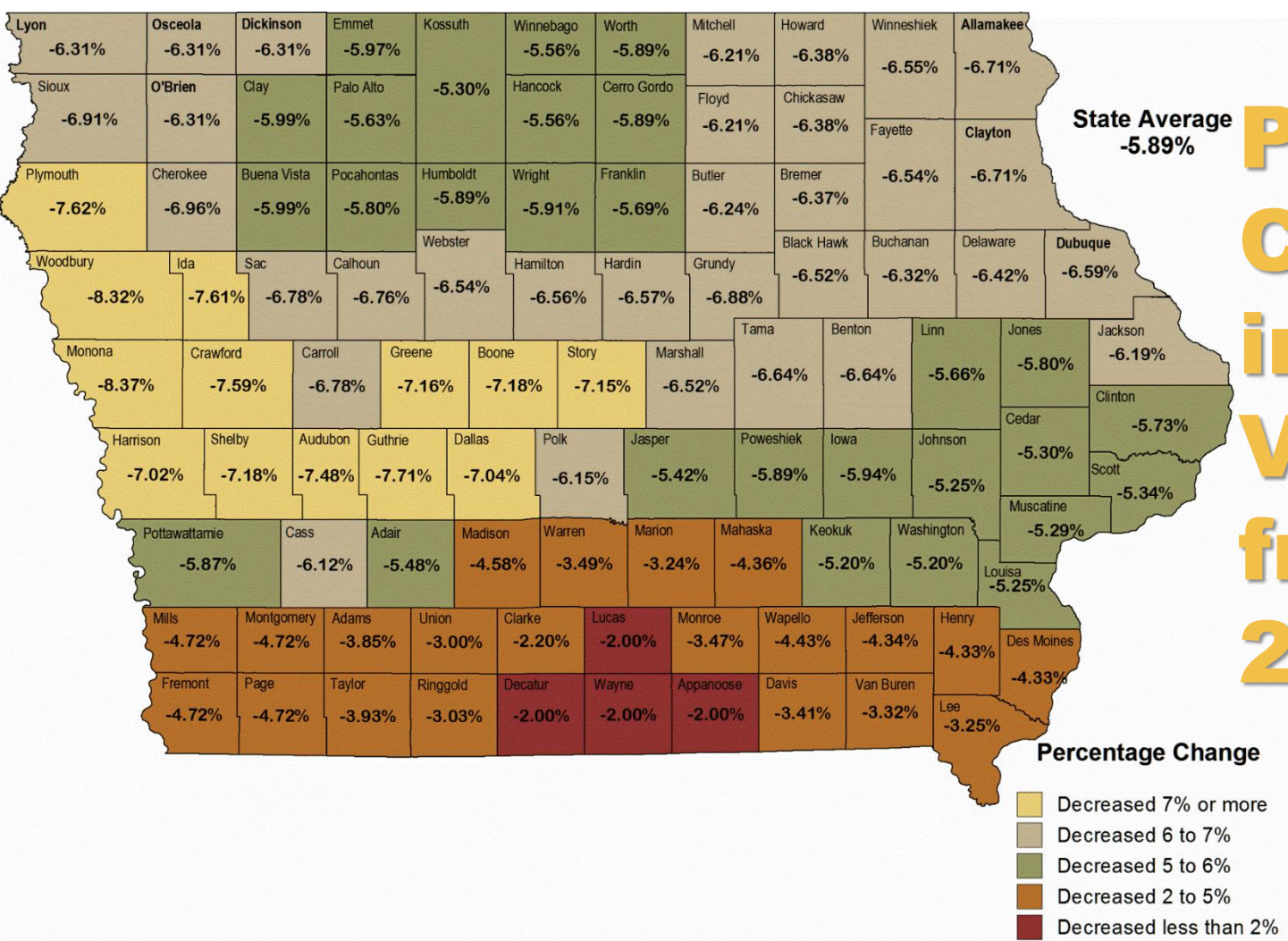
Livestock and Crop Inventory by District

	Inventory 2012				Harvested Acres 2015	
	Chickens, Layers	Hogs	Milk Cows	Cattle	Corn	Soybean
Northwest	30%	26%	29%	22%	15%	16%
North Central	64%	16%	4%	6%	14%	13%
Northeast	1%	12%	51%	16%	12%	8%
West Central	0%	13%	1%	13%	15%	16%
Central	3%	13%	1%	7%	15%	14%
East Central	1%	5%	10%	11%	10%	10%
Southwest	0%	2%	0%	9%	7%	9%
South Central	0%	2%	1%	9%	4%	5%
Southeast	1%	11%	3%	6%	7%	8%
State Inventory	20.4 million	20.4 million	0.17 million	2.34 million	13.2 million	9.8 million

Dollar Values

- \$6,500 or less
- \$6,501 to \$7,500
- \$7,501 to \$8,000
- \$8,001 to \$9,000
- \$9,001 or more

County	Average Annual Salary
Lyon	\$9,254
Osceola	\$8,929
Dickinson	\$8,093
Emmett	\$8,248
Kossuth	\$8,103
Winnebago	\$7,003
Worth	\$6,973
Mitchell	\$7,503
Howard	\$6,419
Winneshiek	\$6,592
Allamakee	\$5,211
Sioux	\$10,066
O'Brien	\$10,194
Clay	\$8,482
Palo Alto	\$8,054
Hancock	\$7,565
Cerro Gordo	\$7,504
Floyd	\$7,323
Chickasaw	\$7,084
Fayette	\$7,694
Clayton	\$6,625
Plymouth	\$9,057
Cherokee	\$8,577
Buena Vista	\$8,996
Pocahontas	\$8,388
Humboldt	\$8,307
Webster	\$8,265
Wright	\$8,395
Franklin	\$7,538
Butler	\$7,596
Bremer	\$8,139
Black Hawk	\$8,599
Buchanan	\$7,913
Delaware	\$8,379
Dubuque	\$7,615
Woodbury	\$6,691
Ida	\$8,167
Sac	\$8,858
Calhoun	\$8,655
Hamilton	\$8,589
Hardin	\$7,883
Grundy	\$8,552
Tama	\$7,455
Benton	\$7,922
Linn	\$8,578
Jones	\$7,296
Jackson	\$6,624
Clinton	\$7,225
Monona	\$6,463
Crawford	\$7,784
Carroll	\$8,342
Greene	\$7,666
Boone	\$8,168
Story	\$8,376
Marshall	\$7,474
Harrison	\$7,147
Shelby	\$7,693
Audubon	\$7,530
Guthrie	\$6,773
Dallas	\$7,577
Polk	\$7,520
Jasper	\$7,441
Poweshiek	\$7,134
Iowa	\$7,123
Johnson	\$8,636
Cedar	\$8,278
Scott	\$10,335
Muscatine	\$7,752
Pottawattamie	\$7,777
Cass	\$6,731
Adair	\$5,530
Madison	\$6,050
Warren	\$6,504
Marion	\$6,490
Mahaska	\$6,610
Keokuk	\$6,335
Washington	\$8,214
Louisia	\$7,393
Mills	\$7,283
Montgomery	\$5,937
Adams	\$4,758
Union	\$4,842
Clarke	\$3,991
Lucas	\$3,761
Monroe	\$4,807
Wapello	\$5,384
Jefferson	\$5,367
Henry	\$6,604
Des Moines	\$7,145
Fremont	\$6,422
Page	\$5,419
Taylor	\$4,315
Ringgold	\$4,084
Decatur	\$3,443
Wayne	\$3,664
Appanoose	\$3,609
Davis	\$4,693
Van Buren	\$4,999
Lee	\$6,459

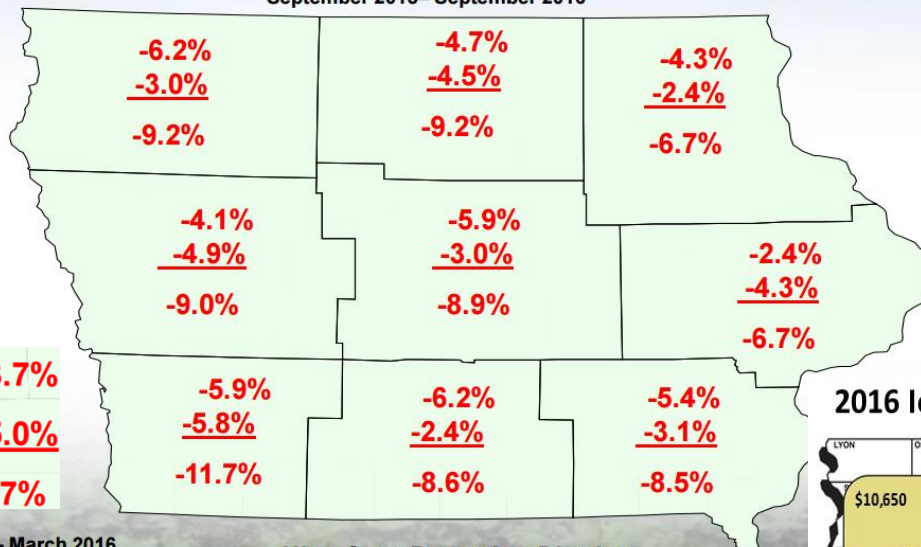


Percent Changes in Land Values from Nov 2015

REALTORS® Land Institute Land Value Survey

September 1, 2016

September 2015– September 2016

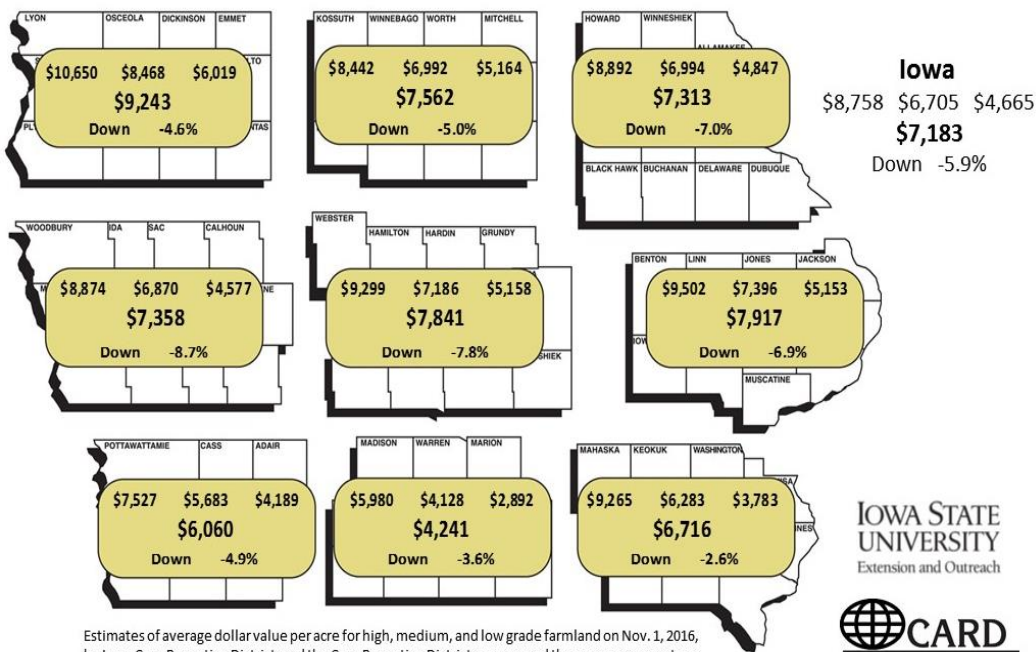


Nine Crop Reporting Districts

Top – March 2016
Bottom – September 2016

ISU survey results echo other surveys

2016 Iowa Land Values by Crop Reporting District



Estimates of average dollar value per acre for high, medium, and low grade farmland on Nov. 1, 2016, by Iowa Crop Reporting District, and the Crop Reporting District average and the average percentage change from Nov. 1, 2015. The estimates are based on a survey conducted by Iowa State University, Center for Agricultural and Rural Development and Iowa State University Extension and Outreach.

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Percent change in dollar value of "good" farmland

Top: July 1, 2016 to October 1, 2016

Bottom: October 1, 2015 to October 1, 2016

	July 1, 2016 to October 1, 2016	October 1, 2015 to October 1, 2016
Illinois	-1	-4
Indiana	0	+1
Iowa	-1	-5
Michigan	-3	-11
Wisconsin	0	+2
Seventh District	-1	-3

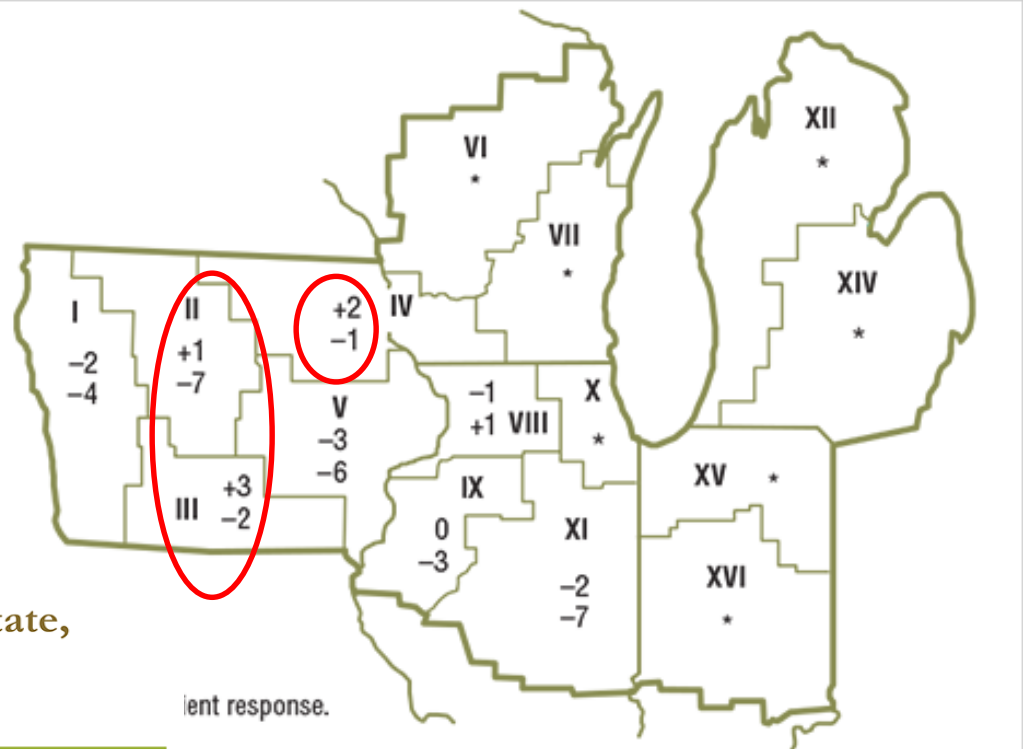


Table: Tenth District Farmland Value by State, Third Quarter 2016

Percent change from previous year *

	Nonirrigated	Irrigated	Ranchland
Kansas	- 14.4	- 16.7	- 8.7
Western Missouri	1.7	n/a **	- 0.4
Mountain States***	- 2.4	3.1	- 0.5
Nebraska	- 5.4	- 5.2	- 9.0
Oklahoma	- 4.6	- 7.6	- 4.4
Tenth District	- 6.1	- 7.0	- 6.5

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

** Not reported due to small sample size.

*** Mountain States include Colorado, northern New Mexico and Wyoming, which are grouped because of limited survey responses from each state.

ISU survey results echo other surveys

Extension and Outreach

Federal Reserve Bank of Chicago, Kansas City
November 2016 Ag Letter

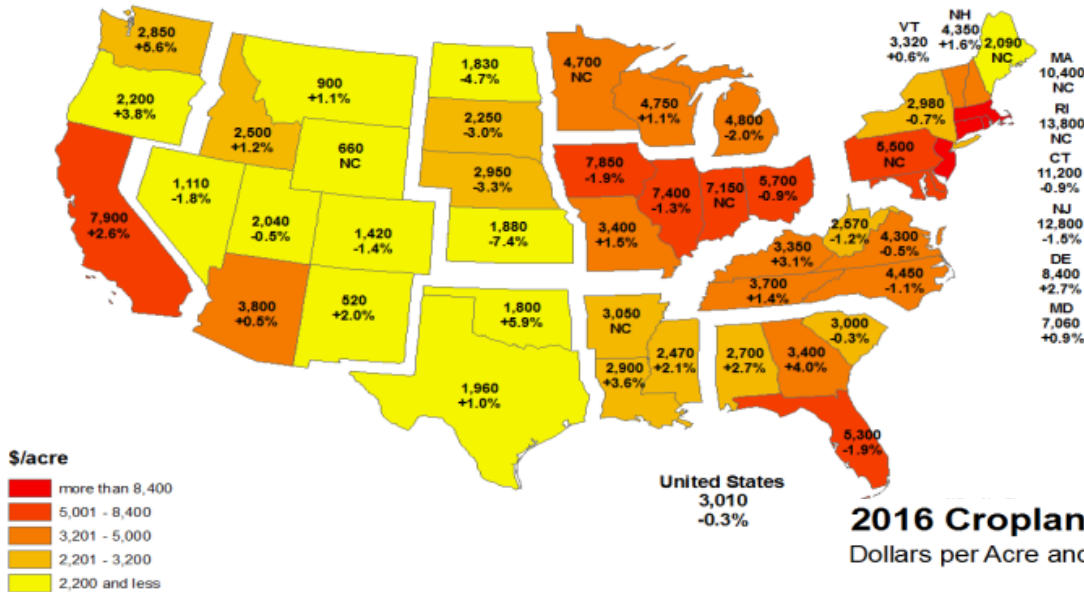


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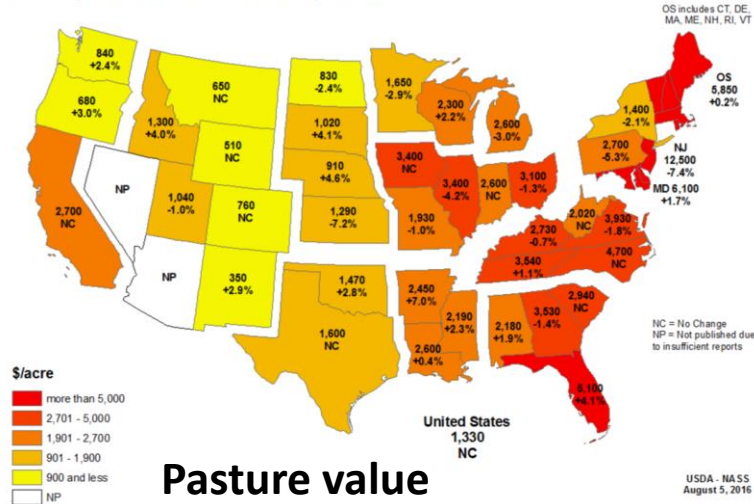
Center for Agricultural and Rural Development

2016 Farm Real Estate Value by State

Dollars per Acre and Percent Change from 2015



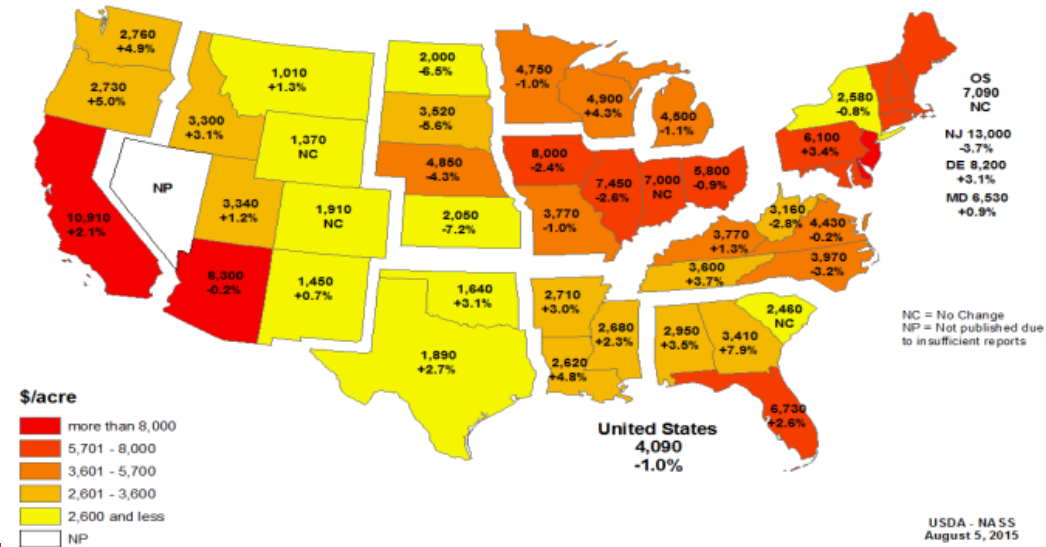
Dollars per Acre and Percent Change from 2015



Pasture value

2016 Cropland Value by State

Dollars per Acre and Percent Change from 2015



ISU survey
results echo
other surveys

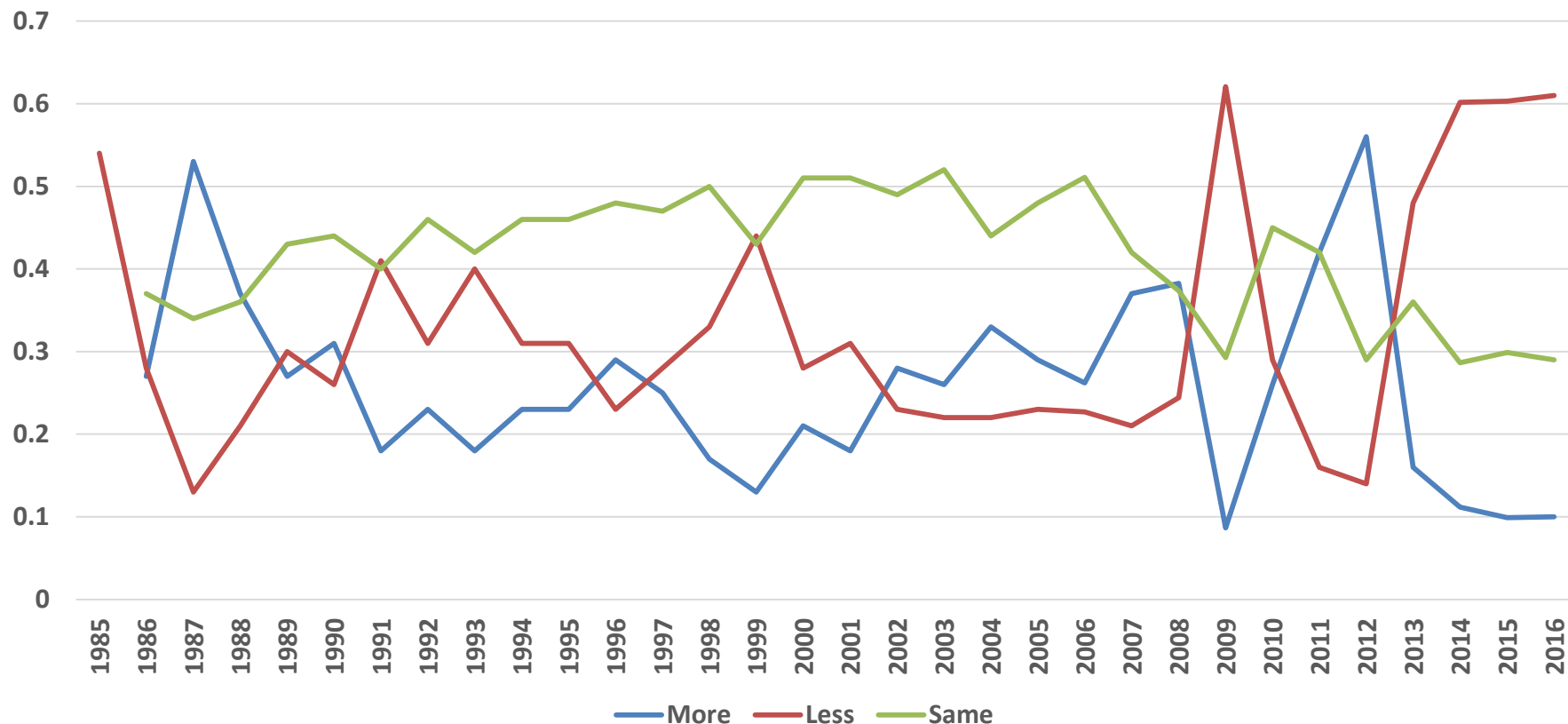


Farmland Market Outlook

Consensus: Going down
**Divergence: Magnitude &
Speed of the Decline**

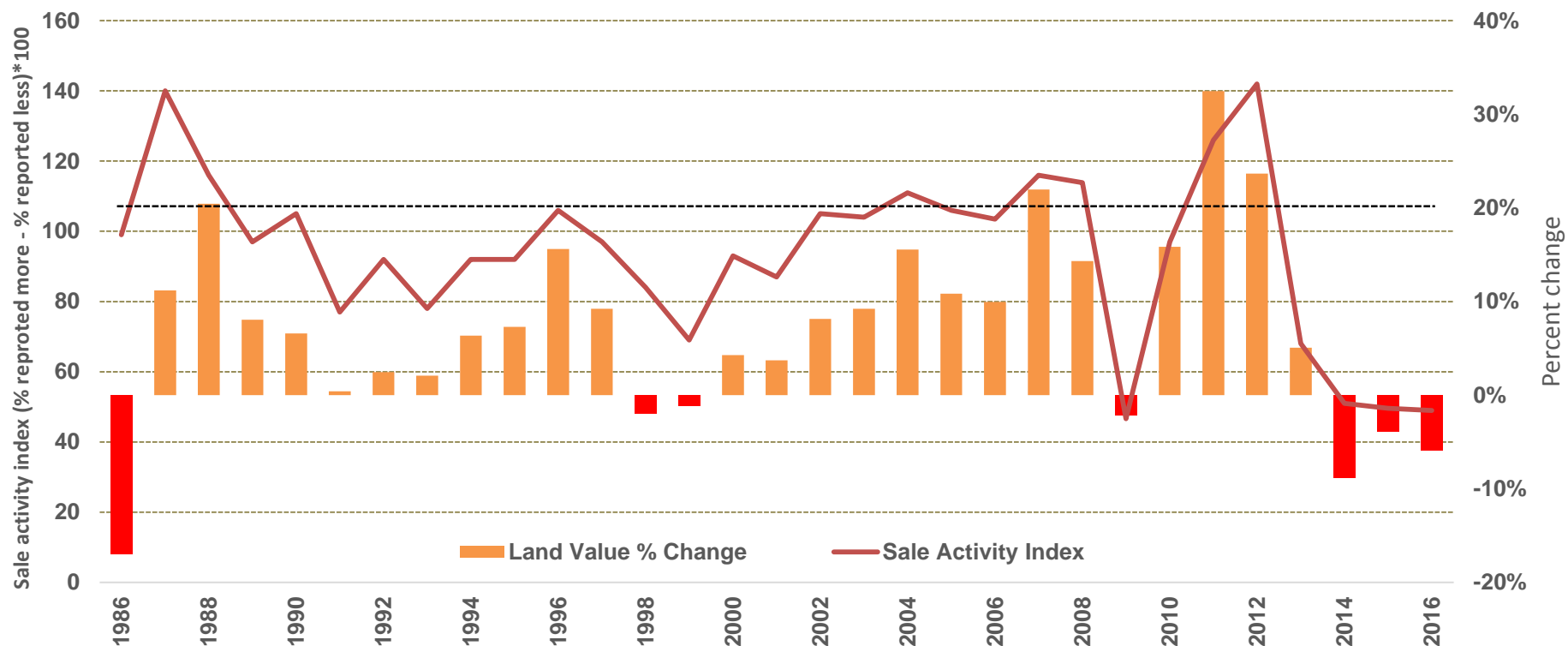
Iowa Farmland Sale Activity Relative to Last Year 1985-2016

Iowa Farmland Sale Activity Change 1989-2016



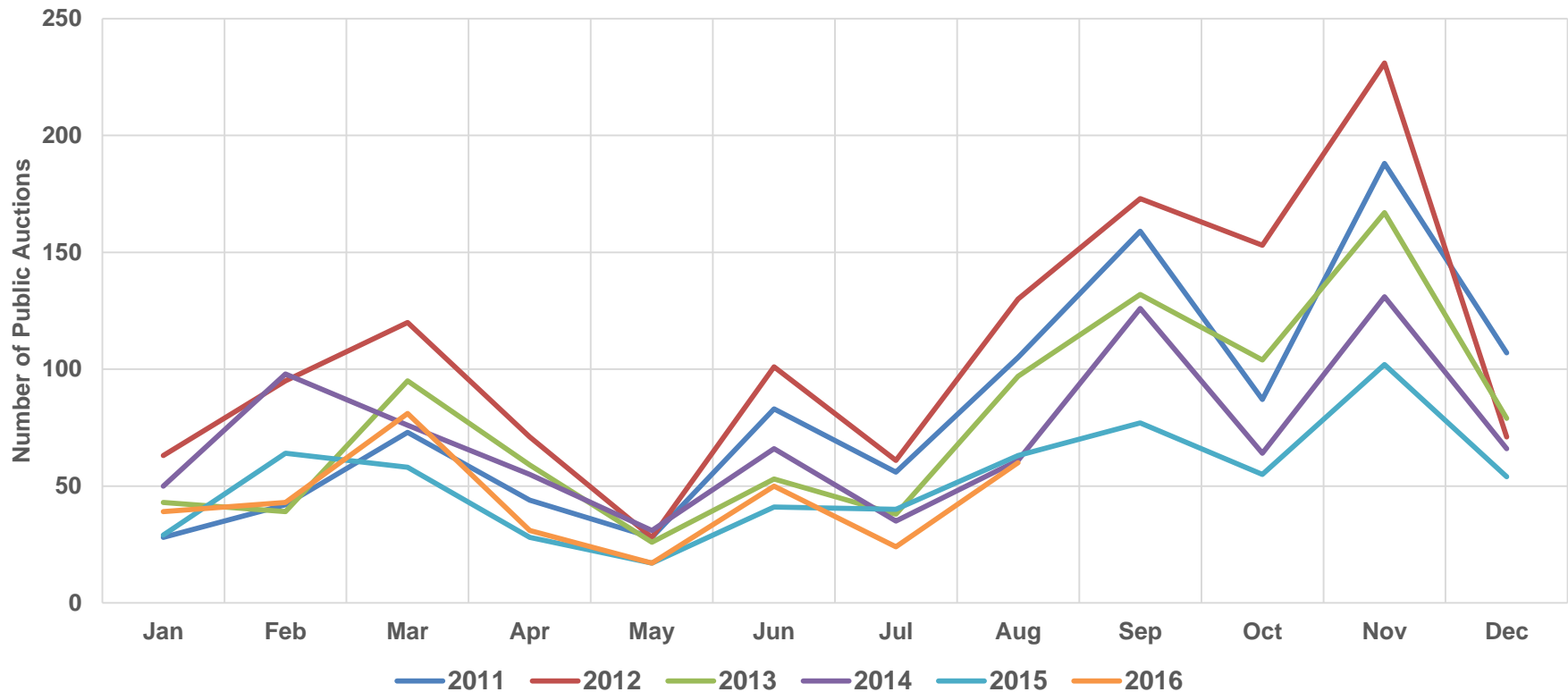
Farmland supply tends to be tighter in down years

ISU sale activity index and percent change in
Iowa land value, 1986-2016
(% reported more sales - % reported less sales) + 100



Limited farmland supply tends to bolster land values

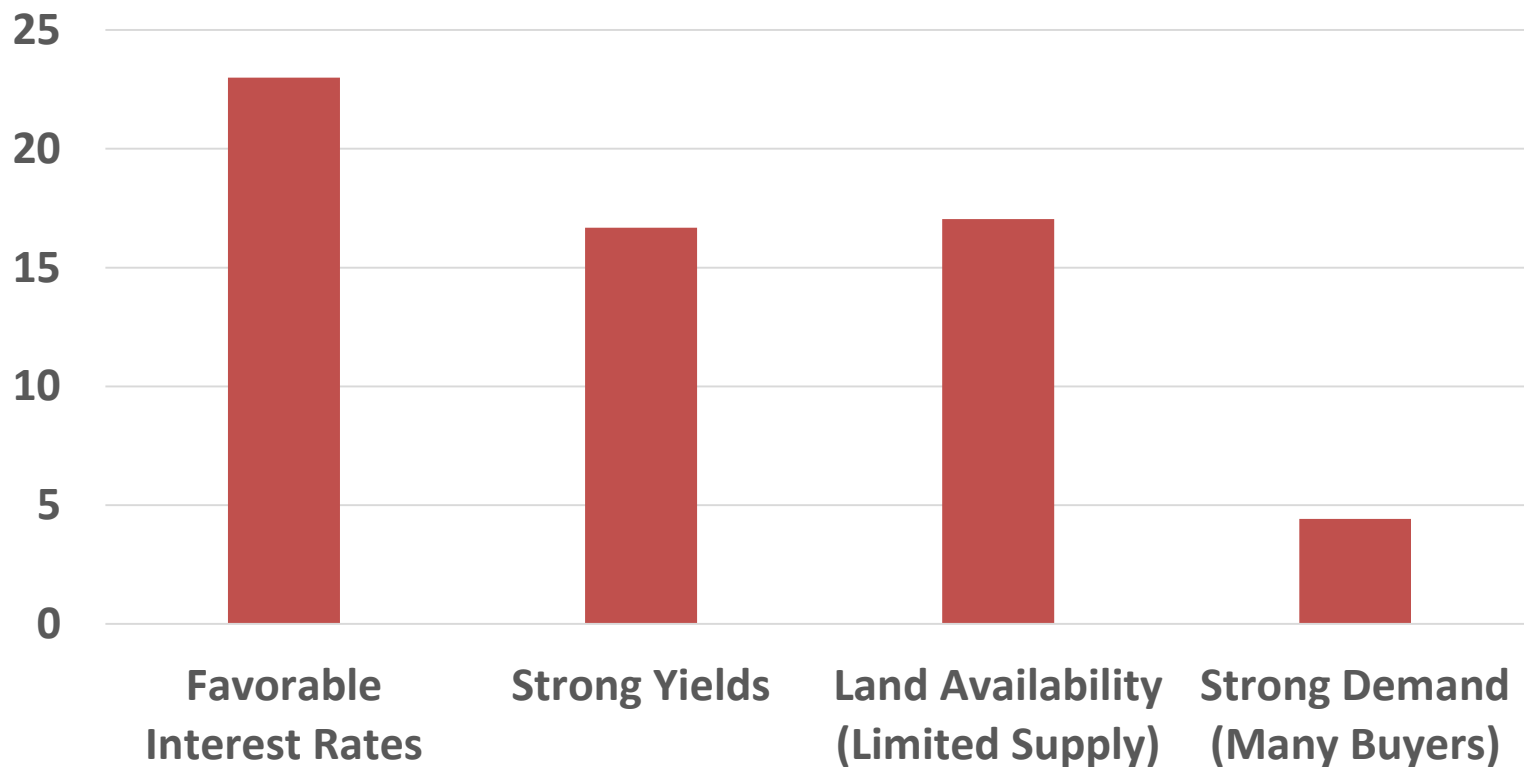
Number of Public Auctions by Month 2011-2016



Looking Ahead

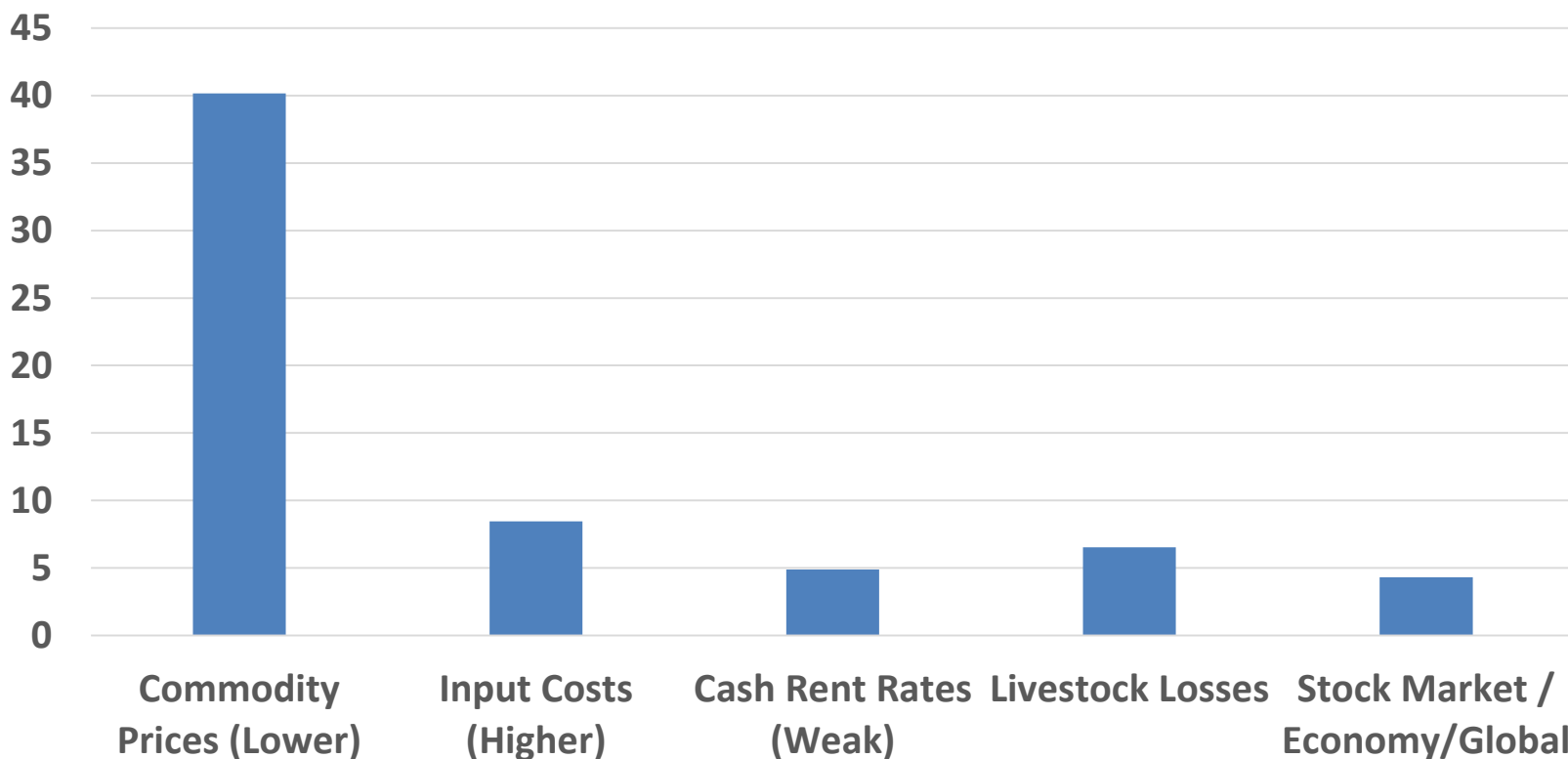
Major Positive Factors Affecting Iowa Farmland Market, 2016

Positive Factors, 2016 (Percent)

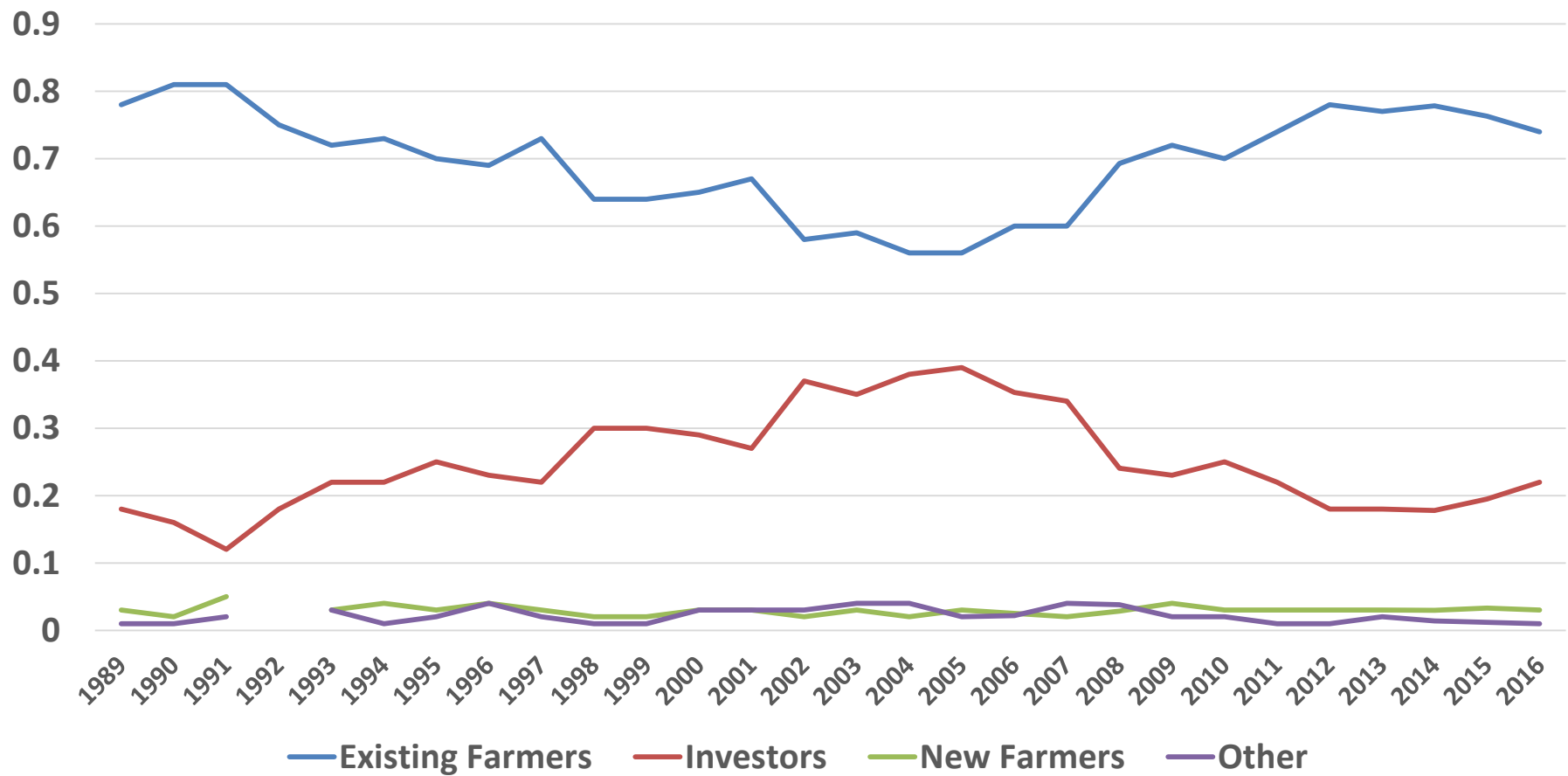


Major Negative Factors Affecting Iowa Farmland Market, 2016

Negative Factors, 2016 (Percent)



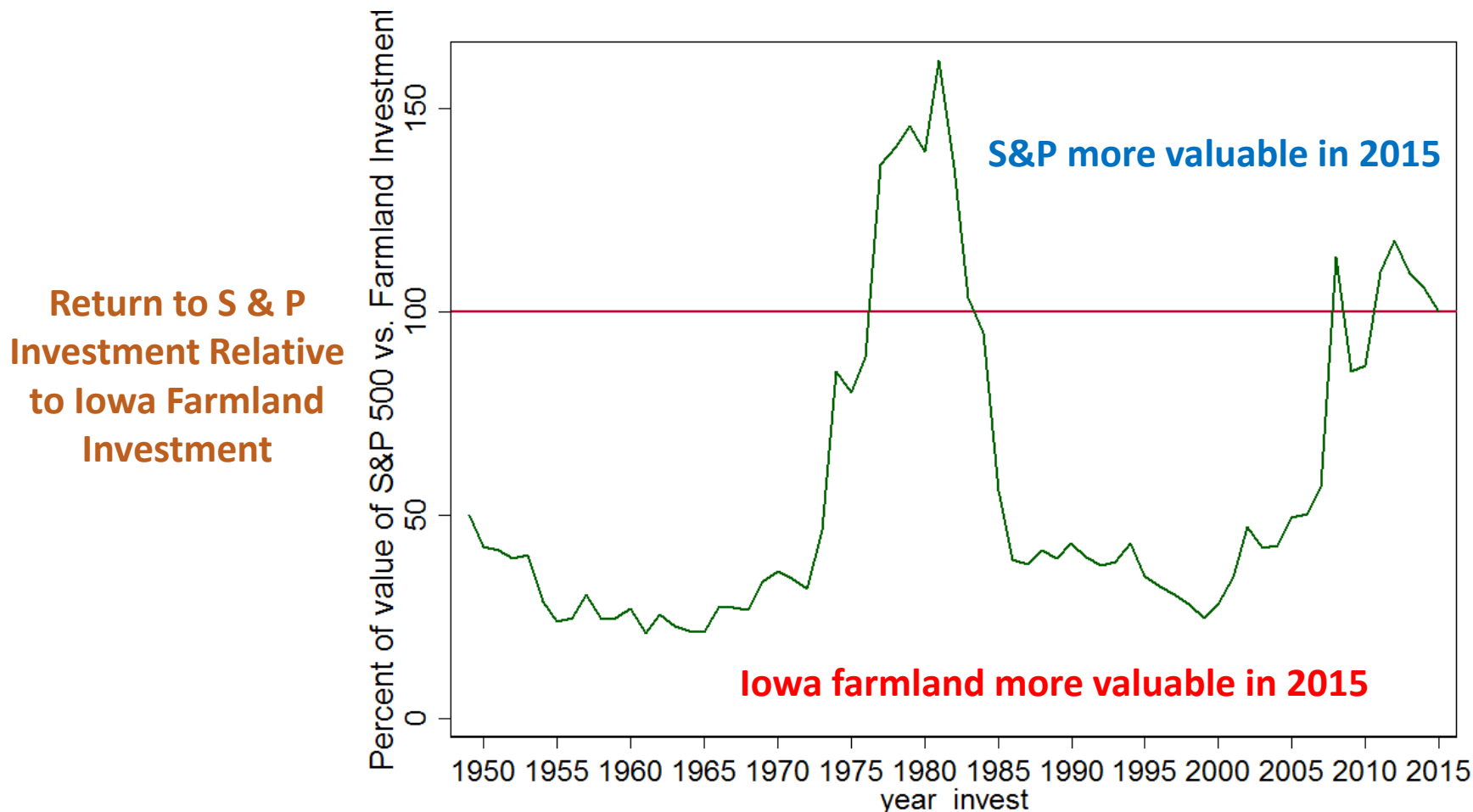
Iowa Farmland Purchases by Buyer Types 1989-2016



Iowa Landowners tend to hold the farmland

Years of ownership	% of Iowa Farmland
Less than 10 years	24%
10-20 Years	21%
20-30 Years	19%
30-40 Years	15%
> 40 Years	20%

S&P 500 vs. Farmland Values: A Question of Timing 1950-2015



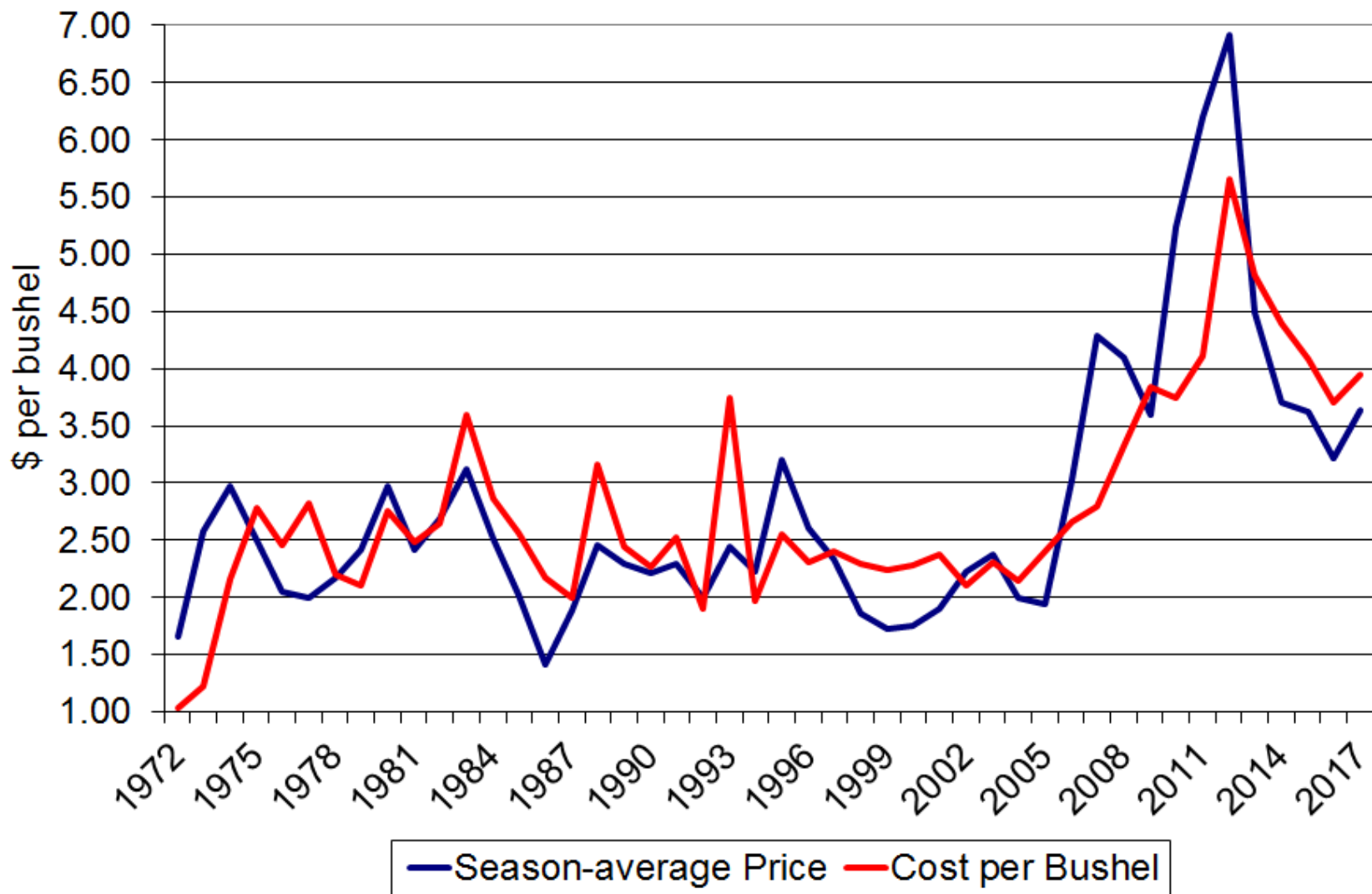
Iowa Farmland Purchases by Seller Types, 2016

	Active Farmers	Retired Farmers	Estate Sales	Investors	Other
	PERCENT				
Northwest	12	17	64	5	3
North Central	8	17	61	10	4
Northeast	14	34	43	6	5
West Central	12	25	57	5	2
Central	13	22	53	8	4
East Central	11	24	53	9	2
Southwest	15	24	47	13	1
South Central	17	24	37	19	3
Southeast	11	24	57	10	2
STATE	12	23	53	9	3

Cash Crop Price Predictions for Nov 2017, 2018, 2020

	Cash Corn Prices			Cash Soybean Prices		
	2017	2018	2020	2017	2018	2020
Northwest	\$ 3.34	\$ 3.65	\$ 3.98	\$ 9.25	\$ 9.61	\$ 10.32
North Central	\$ 3.42	\$ 3.59	\$ 3.93	\$ 9.16	\$ 9.46	\$ 10.01
Northeast	\$ 3.41	\$ 3.59	\$ 3.95	\$ 9.19	\$ 9.28	\$ 9.76
West Central	\$ 3.34	\$ 3.59	\$ 4.02	\$ 9.12	\$ 9.33	\$ 10.06
Central	\$ 3.36	\$ 3.50	\$ 3.77	\$ 9.17	\$ 9.40	\$ 9.86
East Central	\$ 3.42	\$ 3.58	\$ 3.89	\$ 9.26	\$ 9.51	\$ 10.00
Southwest	\$ 3.31	\$ 3.56	\$ 3.94	\$ 9.15	\$ 9.42	\$ 10.09
South Central	\$ 3.36	\$ 3.59	\$ 3.90	\$ 9.51	\$ 9.76	\$ 10.35
Southeast	\$ 3.50	\$ 3.83	\$ 4.17	\$ 9.49	\$ 9.59	\$ 10.08
STATE	\$ 3.38	\$ 3.60	\$ 3.94	\$ 9.24	\$ 9.48	\$ 10.06

Iowa Corn Prices vs. Costs



Farmland Values Predictions for Nov 2017, 2018, 2020

	Reported Average	Land Value Predictions		
	Values as of Nov 2016	Nov 2017	Nov 2018	Nov 2020
Northwest	\$9,912	\$10,085	\$9,786	\$9,983
North Central	\$8,089	\$7,908	\$7,765	\$7,966
Northeast	\$7,582	\$7,799	\$7,624	\$7,704
West Central	\$7,628	\$7,689	\$7,501	\$8,058
Central	\$8,156	\$8,623	\$8,396	\$8,593
East Central	\$7,976	\$8,188	\$7,943	\$8,057
Southwest	\$6,452	\$6,376	\$6,189	\$6,560
South Central	\$4,497	\$4,958	\$4,796	\$4,917
Southeast	\$7,297	\$7,470	\$7,451	\$7,530
STATE	\$7,700	\$7,858	\$7,662	\$7,877

2016 Estimated Land and Commodity Prices

AVG. Estimate

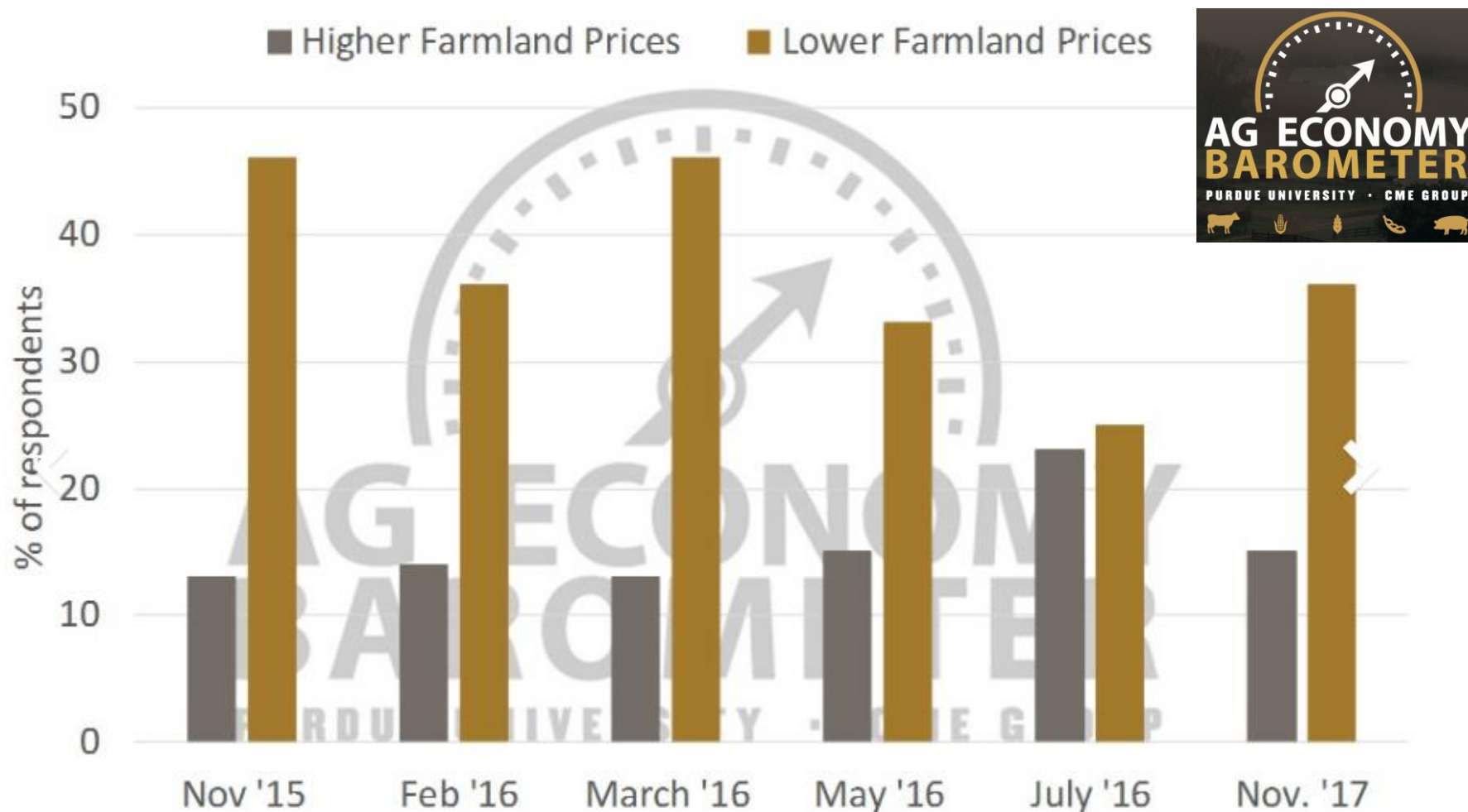
LAND:

	NW	NE	SW	SE	STATE
Nov 2016	\$ 8,358	\$ 8,191	\$ 6,958	\$ 7,320	\$ 7,776
Nov 2017	\$ 8,137	\$ 7,991	\$ 6,991	\$ 6,869	\$ 7,572
Nov 2020	\$ 8,884	\$ 8,758	\$ 7,698	\$ 7,614	\$ 8,303
Nov 2025	\$ 10,199	\$ 9,756	\$ 8,834	\$ 8,681	\$ 9,446
Nov 2040	\$ 14,487	\$ 12,818	\$ 11,833	\$ 11,988	\$ 12,866

Commodity Prices

	CORN	SOYBEAN
Nov 2016	\$ 3.75	\$ 9.44
Nov 2017	\$ 3.73	\$ 10.12
Nov 2020	\$ 4.32	\$ 10.78

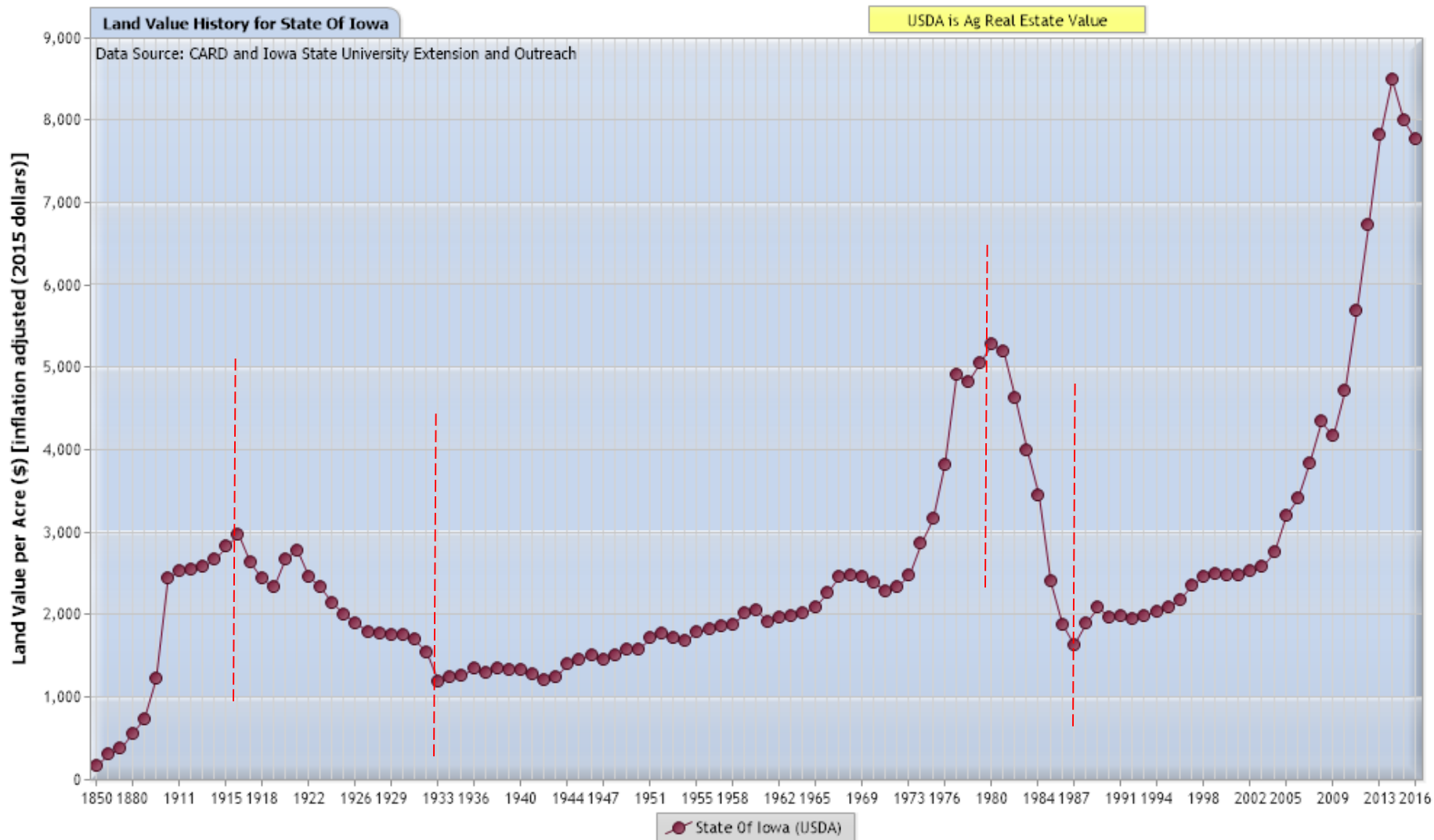
Farmland Price Expectations, 12 months from now



Most Recent Observation: Nov. 2016

Producer Survey

Iowa Ag Real Estate Values 1850-2016



A replay of 1920s or 1980s farm crisis?

Average % change in inflation-adjusted values per year

Golden Eras

	<i>Land</i>	<i>Gross Income</i>	<i>Net Income</i>
1910-1920	1.2%	0.8%	0.2%
1973-1981	9.7%	0.9%	-3.2%
2003-2013	11.1%	4.5%	8.1%

Crises and Declines

	<i>Land</i>	<i>Gross Income</i>	<i>Net Income</i>
1921-1933	-5.8%	-1.9%	-1.0%
1981-1987	-15.0%	-2.5%	2.6%
2013-2016	-6.0%*	-2.7%	-9.5%

Key Indicators to Watch

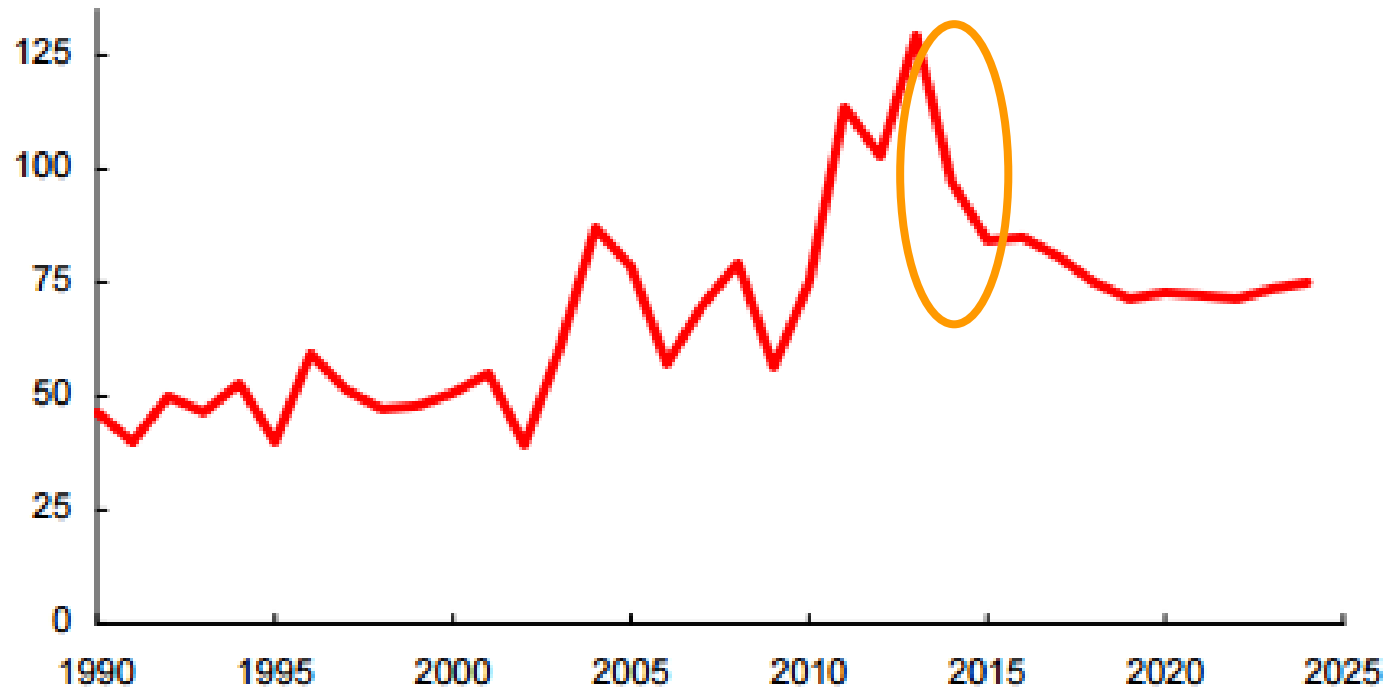
Land Value = net income / interest rate

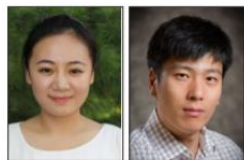
- USDA Farm Income Forecast
 - Price Outlook
 - Ag Exports / Exchange Rate
 - China
 - Ethanol, E-85, RFS
- Fed's move on Interest Rate
- Ag Loan Delinquency; Vendor Credit

US Farm Income 1990- 2025

U.S. net farm income

Billion dollars





Of maize and markets: China's new corn policy

By Qianrong Wu, economics graduate student, qianrong@iastate.edu; Wendong Zhang, extension economist, wdzhang@iastate.edu

2017

美国农业大州爱荷华州的农畜产品在世界市场上长期占据重要地位，现任州长特里·布兰斯塔德已被特朗普政府提名为下一届驻华大使。爱荷华州立大学中国留学生对中国玉米产业政策的一份研究报告获得州农业部长Bill Northey 的推荐转发，芝华特对此深度报告进行了翻译整理。

玉米与市场：谈中国的新玉米政策

作者：Qianrong Wu Wendong Zhang

翻译：芝华数据 李佳璇



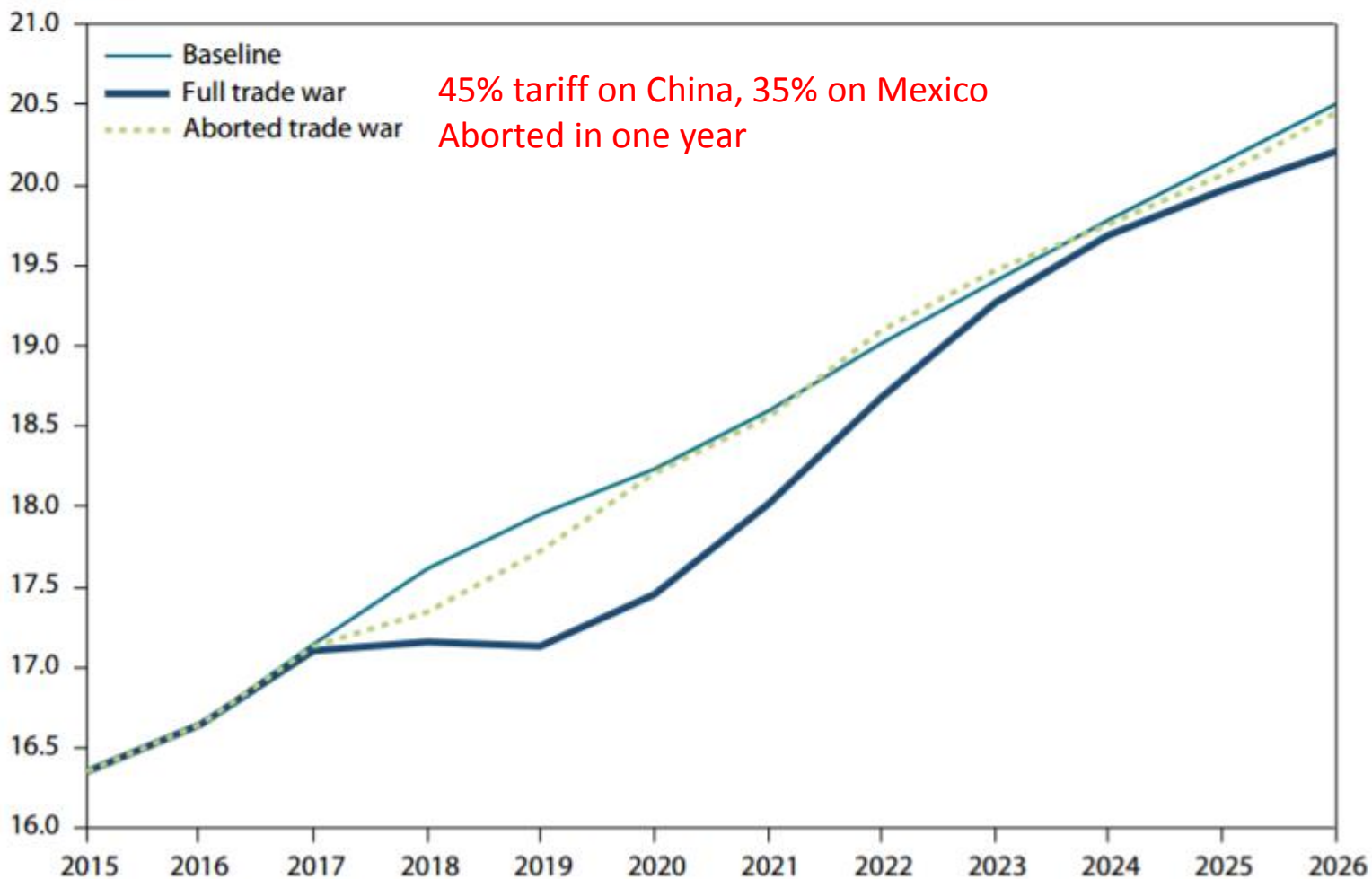
Federal Reserve raises interest rates for second time in a decade, expects 3 hikes in 2017

The Washington Post

By Jim Tankersley December 14 at 3:30 PM

Figure 2.2 Projected US GDP under baseline, full trade war, and aborted trade war scenarios, 2015–26

trillions of 2009 US dollars



Impact of Trade War w China and Mexico

A New, Interactive Iowa Farmland Value Portal

<http://card.iastate.edu/farmland/>

Iowa Farmland Value Portal

<http://card.iastate.edu/farmland>



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Iowa Farmland Value Portal ^{BETA}

Your One-Stop Web-Portal for Everything You Need to Know about Iowa's Farmland Value

[2015 Results](#) [Charts](#) [Interactive County Maps](#) [Downloads](#) [Resources](#) [Archive](#)

Select a county or district:

Select result format: ☒ dollar value ☐ annual percentage change ☐ farmland value indexes (state only)

Select data sources: ☒ ISU Iowa Land Value Survey ☐ USDA National Agricultural Statistics Service
☐ REALTORS Land Institute ☐ Federal Reserve Bank of Chicago

Years: through

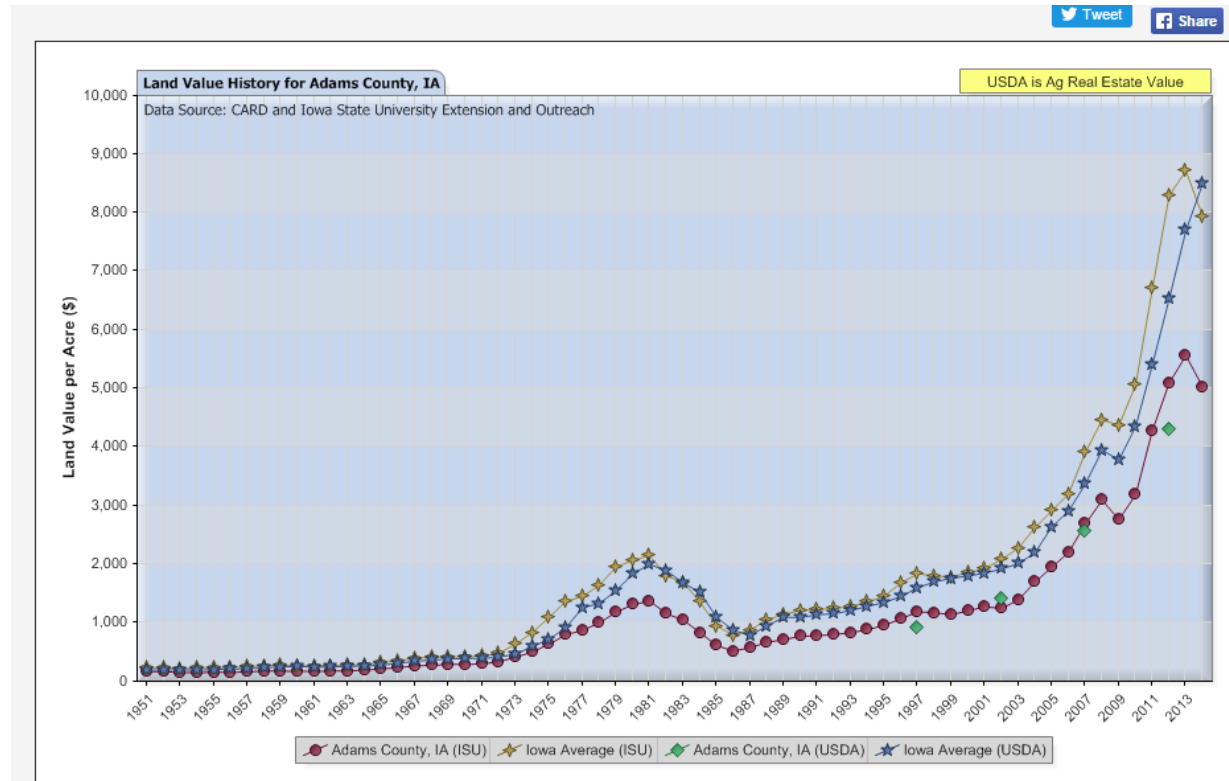
☐ Show Values

☐ Show Iowa Average ☐ Show District Average

Iowa Farmland Value Portal

twitter
#ISUland
value

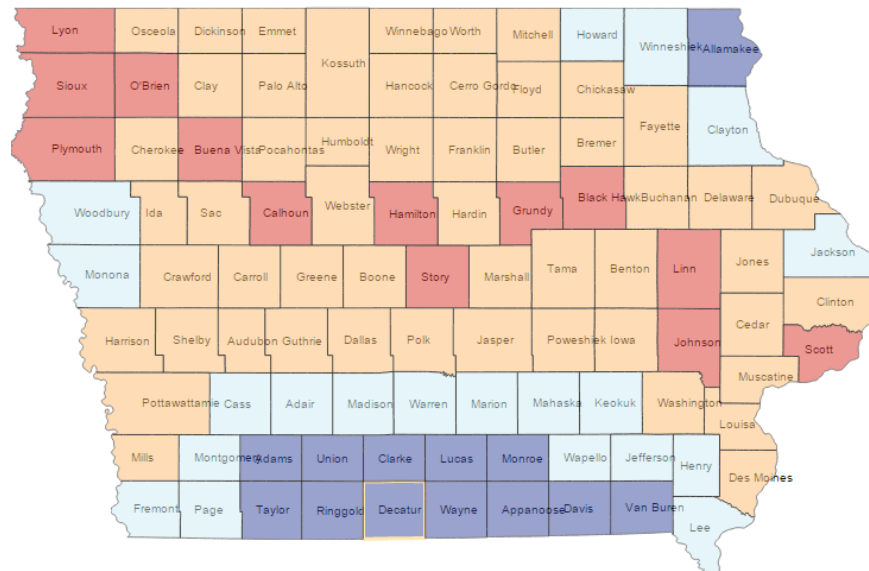
<http://card.iastate.edu/farmland>



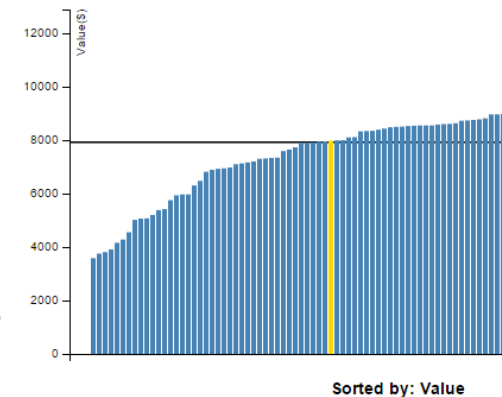
☒ Land Value
 ☐ Value Change(%)
 ☐ Value Change(\$)
☐ Nominal Value
 ☒ Inflation Adjusted

Year:

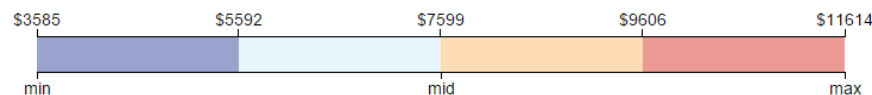
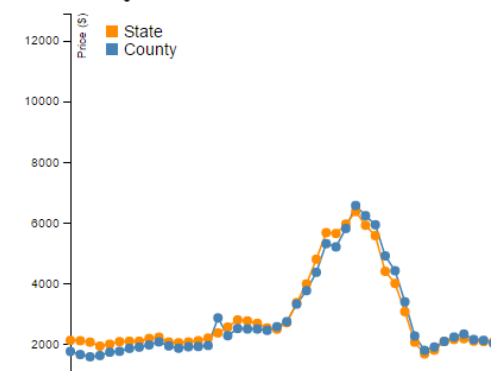
County



Iowa County Land Value in 2014



Land Value Trend in County: Dubuque





IOWA STATE UNIVERSITY
Extension and Outreach

Thank You!

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