

What Is Driving Rising Farmland Values?

Dr. Wendong Zhang

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Associate Professor of Economics and Extension Economist

ISU CARD Farmland Portal: www.card.iastate.edu/farmland

Iowa Farm Bureau, January 6, 2022

A Quick Introduction: Dr. Wendong Zhang

- Grew up in a rural county in Shandong Province, China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ from Ohio State in 2015
- Promoted to Associate Professor in August 2021
- Research and extension interests:

land value/ownership <https://www.card.iastate.edu/farmland>

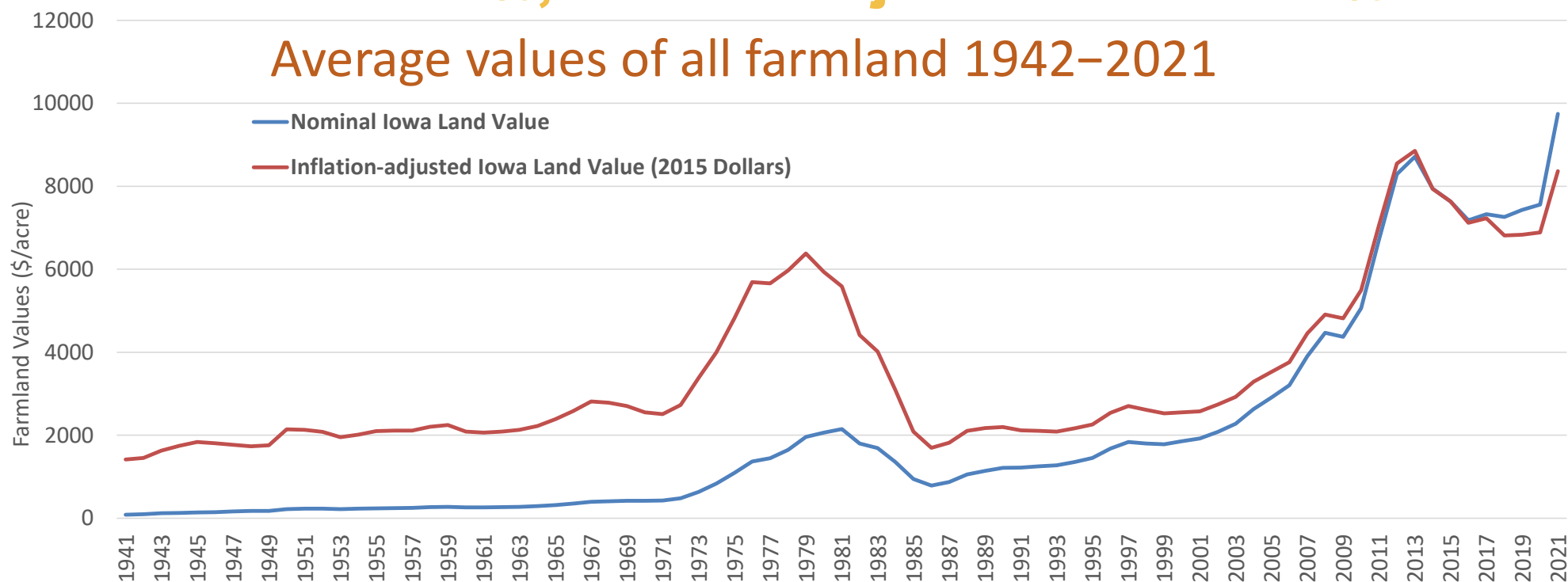
2019 Iowa Lakes Survey <https://www.card.iastate.edu/lakes>

ISU China Ag Center <https://www.card.iastate.edu/china>

ISU Land Value Survey – How to Interpret

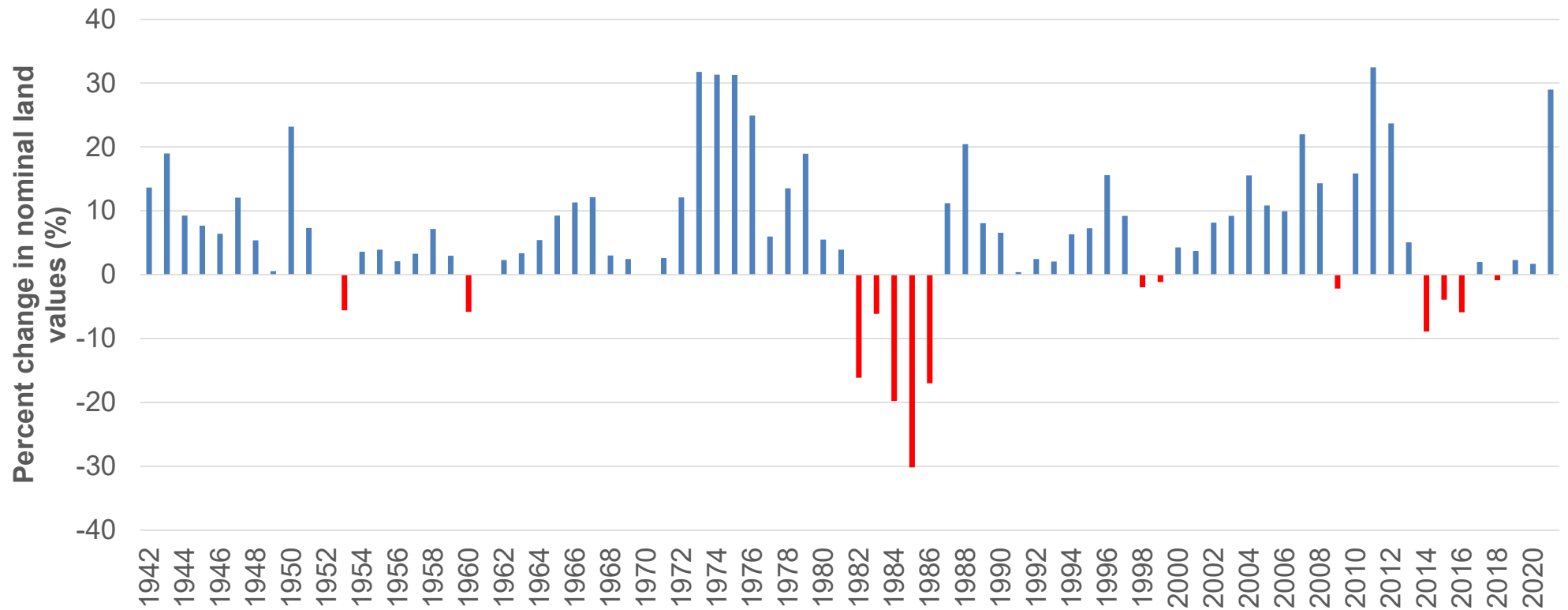
- It is an opinion survey
- It is an expert opinion survey: respondents are ag professionals
- The first of its sort in the nation, started 1941
- The only survey that offers county-level land value estimates since 1950
- It is not designed to value individual parcels
- The percent change is more important than the actual dollar amount, and when comparing across surveys, compare the percent change
- To value individual parcels, consult appraisers or comparable sales

Nominal Iowa land values reach historic high But inflation-adjusted values are still lower than 2012, 2013 Nominal values +29%; Inflation-adjusted values +21%



2021 hike: 29% nominal, 21% inflation-adjusted

% Change in Nominal Iowa Farmland Values 1942–2021

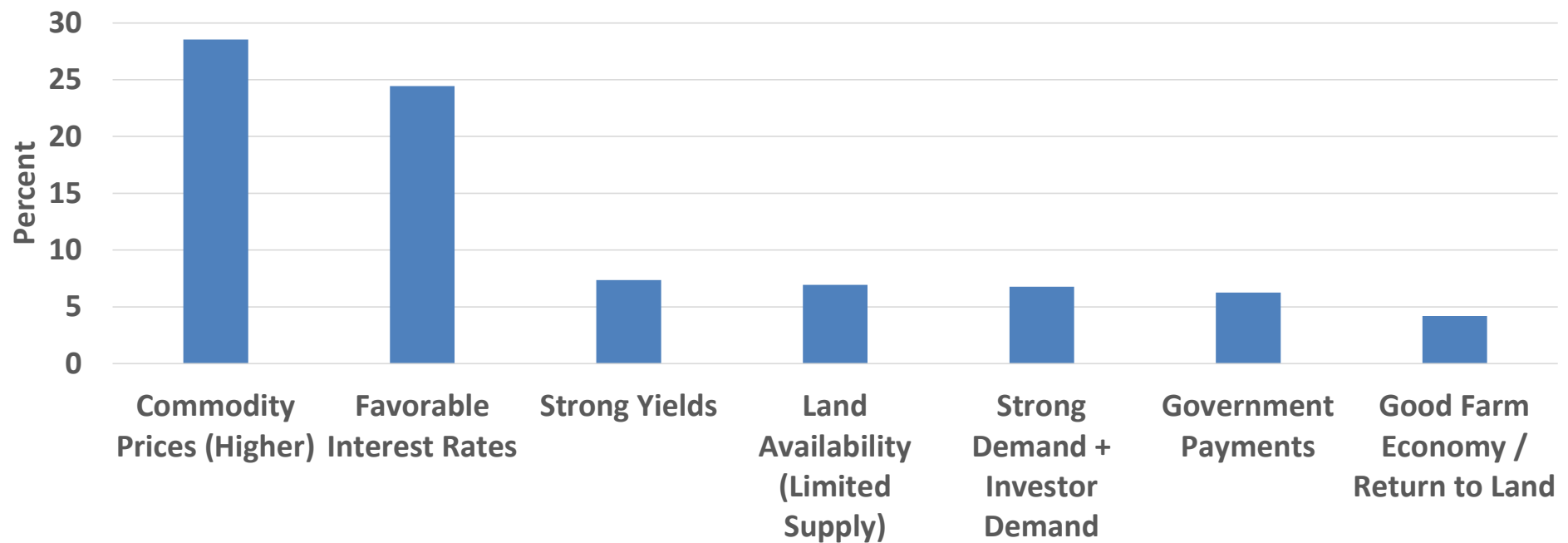


Land Values by District and Quality, Nov 2021

District	Average Value	% Change	High Quality	% Change	Medium Quality	% Change	Low Quality	% Change
Northwest	\$12,164	27.6%	\$13,997	29.8%	\$11,042	22.8%	\$8,088	24.7%
North Central	\$10,664	34.5%	\$12,064	35.7%	\$9,641	31.2%	\$6,992	32.0%
Northeast	\$9,958	32.3%	\$12,308	34.1%	\$9,122	30.7%	\$6,717	28.8%
West Central	\$10,461	33.1%	\$12,289	34.2%	\$9,700	30.5%	\$7,044	28.3%
Central	\$10,744	26.6%	\$12,512	27.7%	\$9,980	26.6%	\$7,136	23.2%
East Central	\$11,051	29.6%	\$13,503	32.4%	\$10,179	27.9%	\$7,215	28.9%
Southwest	\$7,582	24.0%	\$9,424	25.9%	\$7,145	22.3%	\$5,155	27.1%
South Central	\$6,035	29.6%	\$8,194	27.9%	\$6,094	33.6%	\$4,058	24.4%
Southeast	\$8,451	21.9%	\$11,628	25.0%	\$8,169	23.1%	\$4,734	14.5%
Iowa Avg.	\$9,751	29.0%	\$11,834	30.5%	\$9,071	27.4%	\$6,397	26.0%

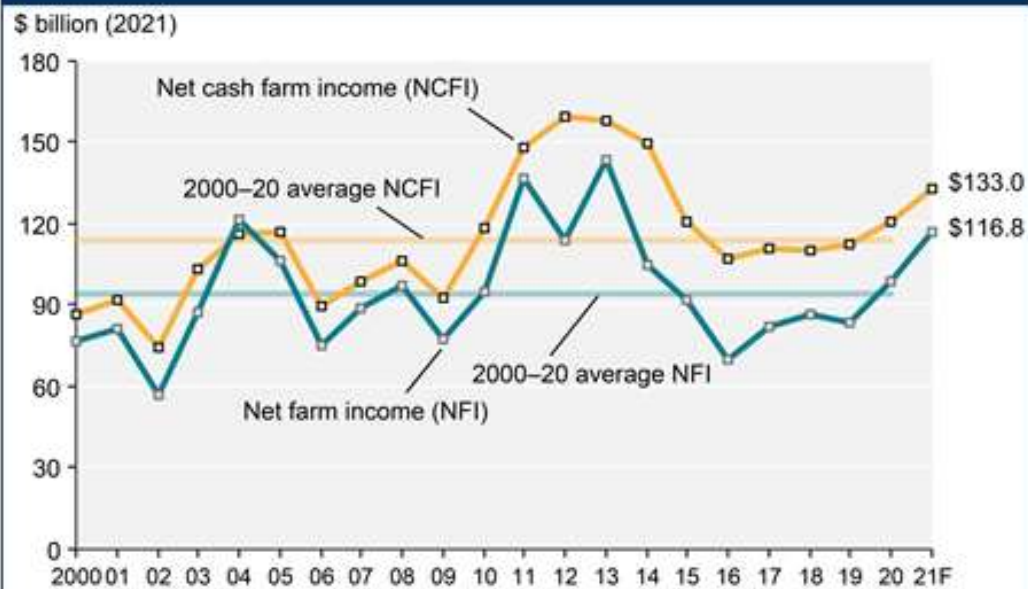
Major Positive Factors Affecting Iowa Farmland Market, 2021

Positive Factors Affecting 2021 Farmland Market



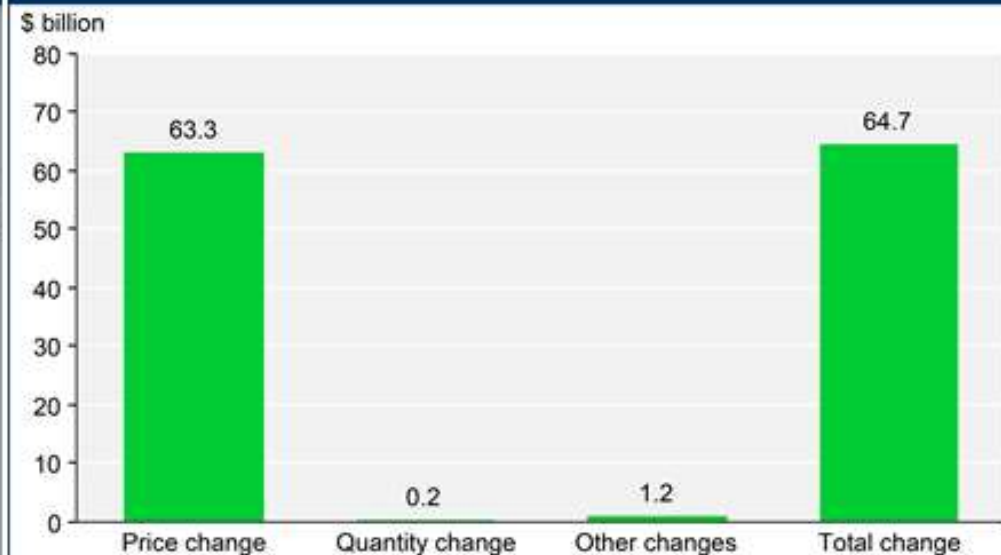
Record federal ad hoc government payments and lower interest rates provided support for land values

U.S. net farm income and net cash farm income, 2000–21F



Note: F = forecast. Values are adjusted for inflation using the U.S. Bureau of Economic Analysis Gross Domestic Product Price Index (BEA API series code: A191RG) rebased to 2021 by USDA, Economic Research Service.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of December 1, 2021.

Change in U.S. farm cash receipts, 2020–21F, by component of change



Note: F = forecast. Other changes include price/quantity changes in "all other crops" (excluding sugarcane and sugarbeets), proso millet, and miscellaneous animals/products for which data are not available. Price, quantity, and other changes may not sum to total because of rounding.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of December 1, 2021.

Commodity Prices Significantly Higher

	Latest period	Value	Percent change from		
			Prior period	Year ago	Two years ago
Prices received by farmers (<i>index, 2011=100</i>)	September	109	-0.7	22	24
Crops (<i>index, 2011=100</i>)	September	108	-1.5	16	23
Corn (\$ per bu.)	September	5.45	-13.8	60	43
Hay (\$ per ton)	September	188	0.0	25	18
Soybeans (\$ per bu.)	September	12.20	-10.9	32	46
Wheat (\$ per bu.)	September	7.75	8.7	64	79
Livestock and products (<i>index, 2011=100</i>)	September	109	0.0	30	25
Barrows & gilts (\$ per cwt.)	September	70.40	-10.4	38	46
Steers & heifers (\$ per cwt.)	September	127.00	1.6	21	22
Milk (\$ per cwt.)	September	18.40	4.0	4	-5
Eggs (\$ per doz.)	September	1.03	-3.7	24	51

The impacts of interest rate changes on US Midwest farmland values

Albulena Basha

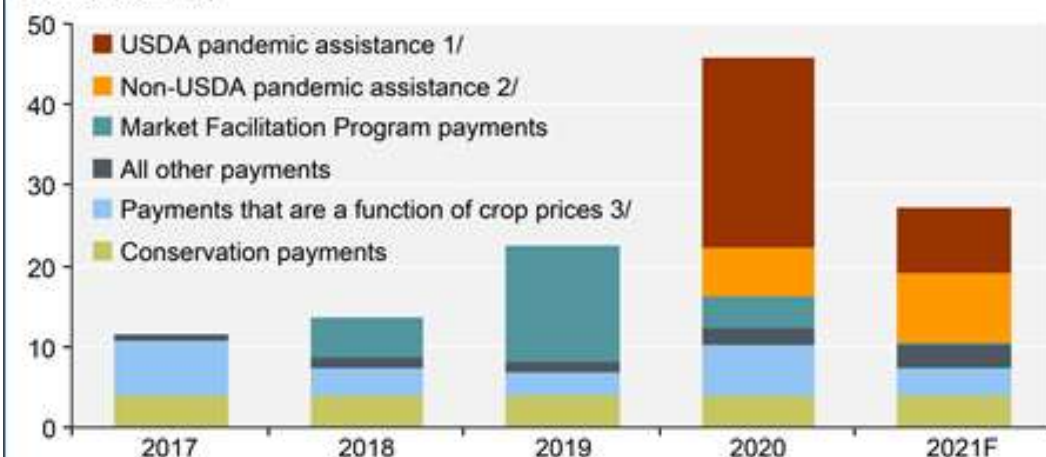
Deutsche Gesellschaft Für Internationale Zusammenarbeit (GIZ) GmbH,
Pristina, Kosovo

Wendong Zhang

The short- and long-term impacts of recent government payments on I-states' farmland values

Direct government payments to U.S. farm producers, 2017–21F

\$ billion (nominal)



Note: F = forecast.

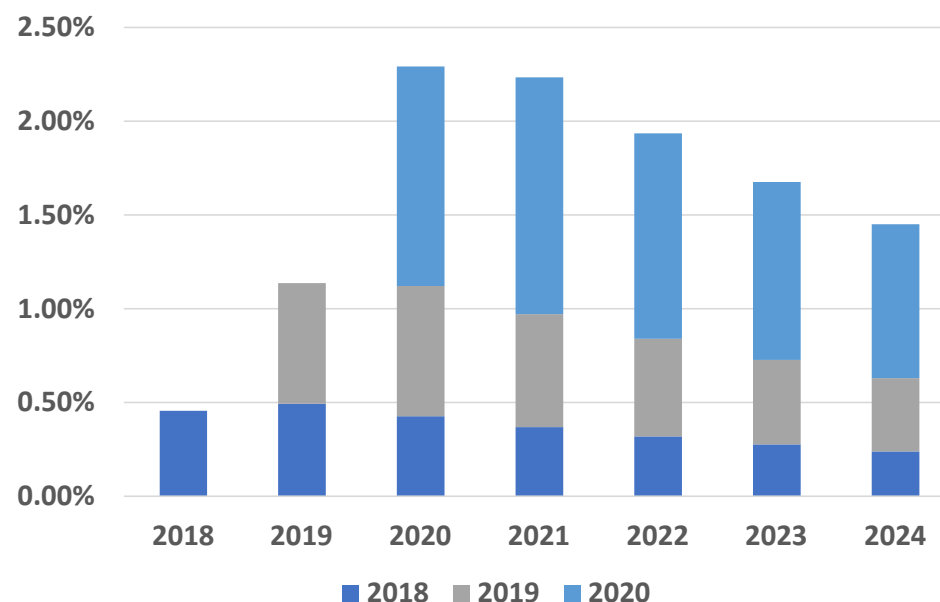
1/ Includes payments from the Coronavirus Food Assistance Program and other USDA pandemic assistance for producers.

2/ Includes loans from the Paycheck Protection Program.

3/ Includes Price Loss Coverage, Agriculture Risk Coverage, loan deficiency payments (excluding grazeout payments), marketing loan gains, certificate exchange gains, and dairy payments.

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

Data as of December 1, 2021.



<https://doi.org/10.1108/AFR-11-2020-0163>

Markets and the economy brace as the Federal Reserve's first rate hike could come in two months

PUBLISHED MON, JAN 3 2022 3:27 PM EST | UPDATED MON, JAN 3 2022 6:53 PM EST



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KEY POINTS

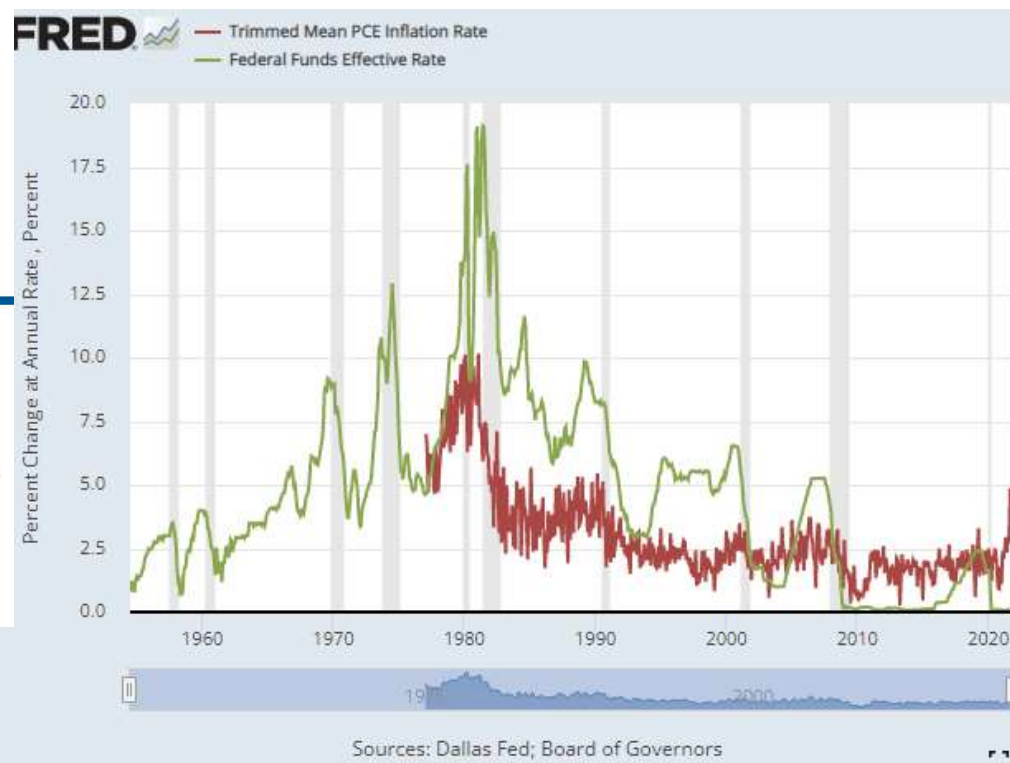
- The Federal Reserve in a little over two months is expected to enact its first rate increase in three years.
- As officials prep for a return to more conventional monetary policy, Wall Street is watching closely.
- The Fed is responding to inflation pressures that are running — by some measures — at the fastest rate in nearly 40 years.

THE WALL STREET JOURNAL.

MARKETS | STOCKS

Stocks Face Rockier Path in 2022 as Fed Rate Increases Loom

Though investors remain hopeful, many see increased threats to the pandemic-era rally, as the central bank starts removing support for the economy



The impacts of interest rate changes on US Midwest farmland values

Albulena Basha
Deutsche Gesellschaft Für Internationale Zusammenarbeit (GIZ) GmbH,
Pristina, Kosovo
Wendong Zhang

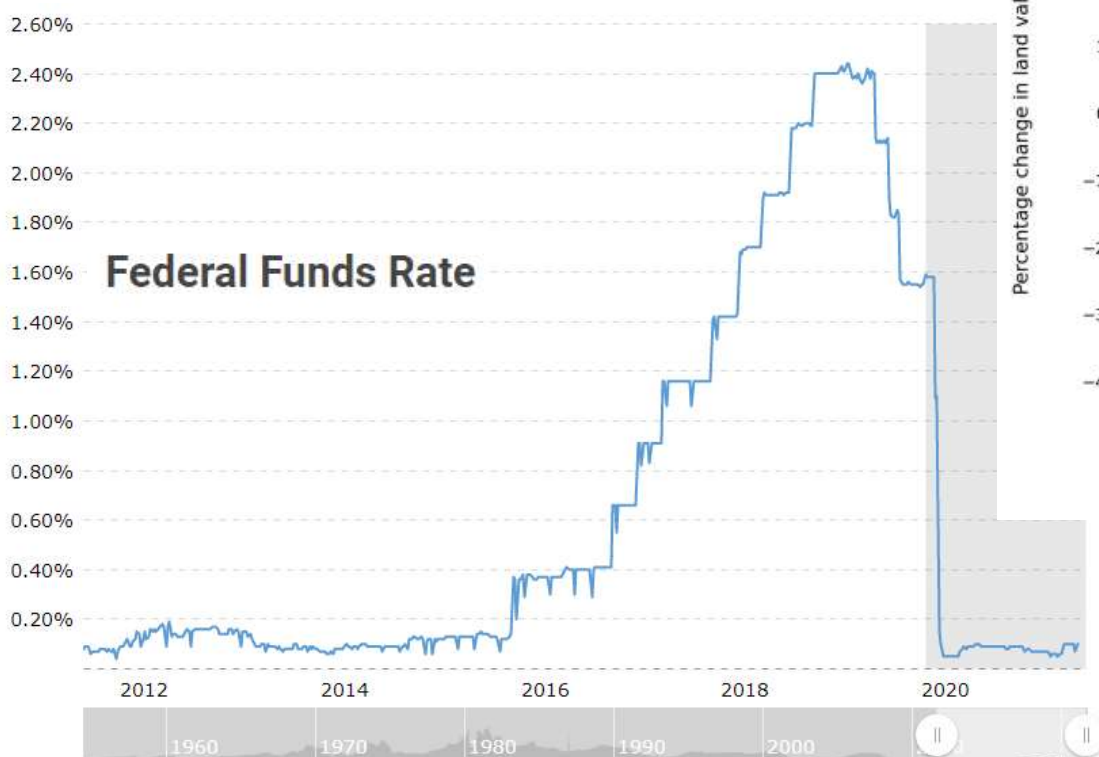
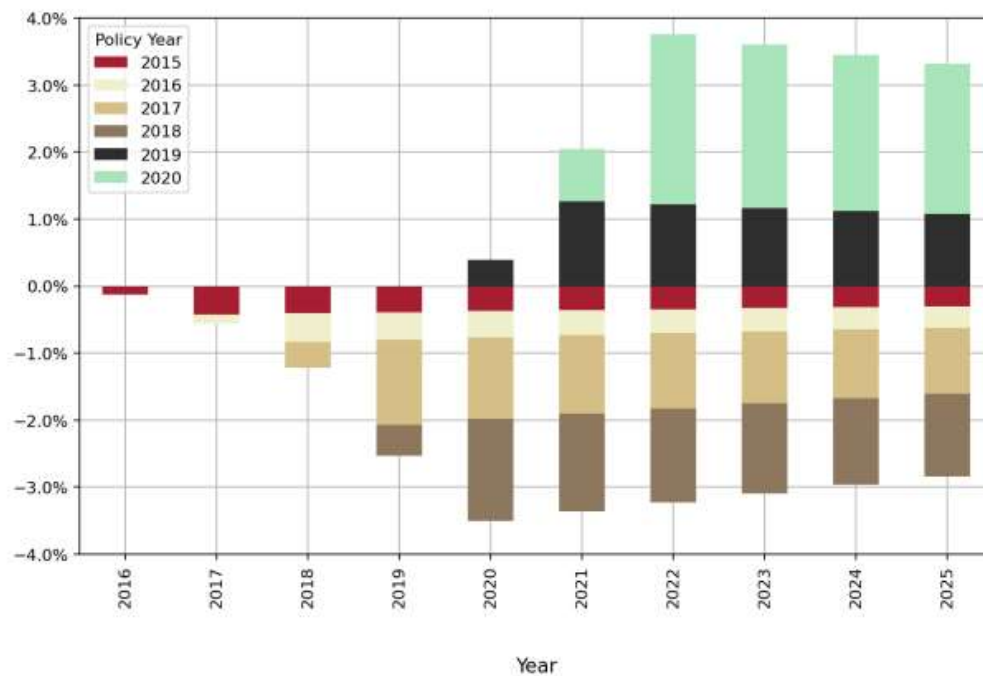


Fig. 3: The short- and long-term impacts of recent Federal Reserve interest rate moves on I-states' farmland values



<https://doi.org/10.1108/AFR-11-2020-0163>

The relationship between inflation and farmland returns

October 2020

Bruce Sherrick, Ph.D., Director of the TIAA Center for Farmland Research and Fruin Professor of Farmland Economics

I UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

TIAA Center for Farmland Research

Table 2: Asset return characteristics, 1970 to 2019⁶

Asset/Index	Annual average return	Standard deviation	Coefficient of variation
----- 1970 - 2019 -----			
U.S. ag 32 states	10.2%	6.5%	0.64
U.S. equities	7.1%	16.5%	2.31
European equities	6.1%	20.3%	3.35
U.S. corporate bonds	7.5%	2.6%	0.35
U.S. 10 year bonds	6.3%	3.0%	0.48
U.S. 30 year mortgages	7.7%	3.6%	0.46
U.S. listed real estate	10.9%	16.8%	1.53
Gold	7.53%	22.2%	2.95
PPI	3.40%	4.9%	1.44
CPI	3.84%	2.8%	0.73

U.S. Equities: S&P 500 index; **European equities:** MSCI EAFE Index; **U.S. corp** Corporate AAA rated bonds; **U.S. 10 year bonds:** U.S. 10 year Treasury bonds; **U.S. 30 year mortgages:** Average rate on 30 year fixed rate mortgage; **U.S. listed real estate:** NAREIT index; **Gold:** London Bullion Market Association Gold Price; **PPI:** U.S. Consumer Price Index for All Urban Consumers; **CPI:** U.S. Consumer Price Index for All Urban Consumers

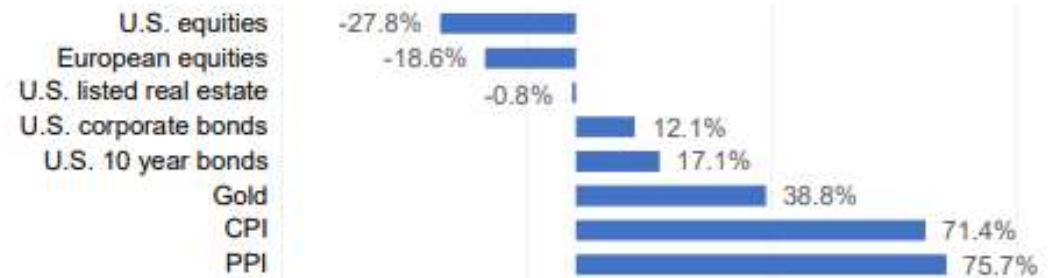
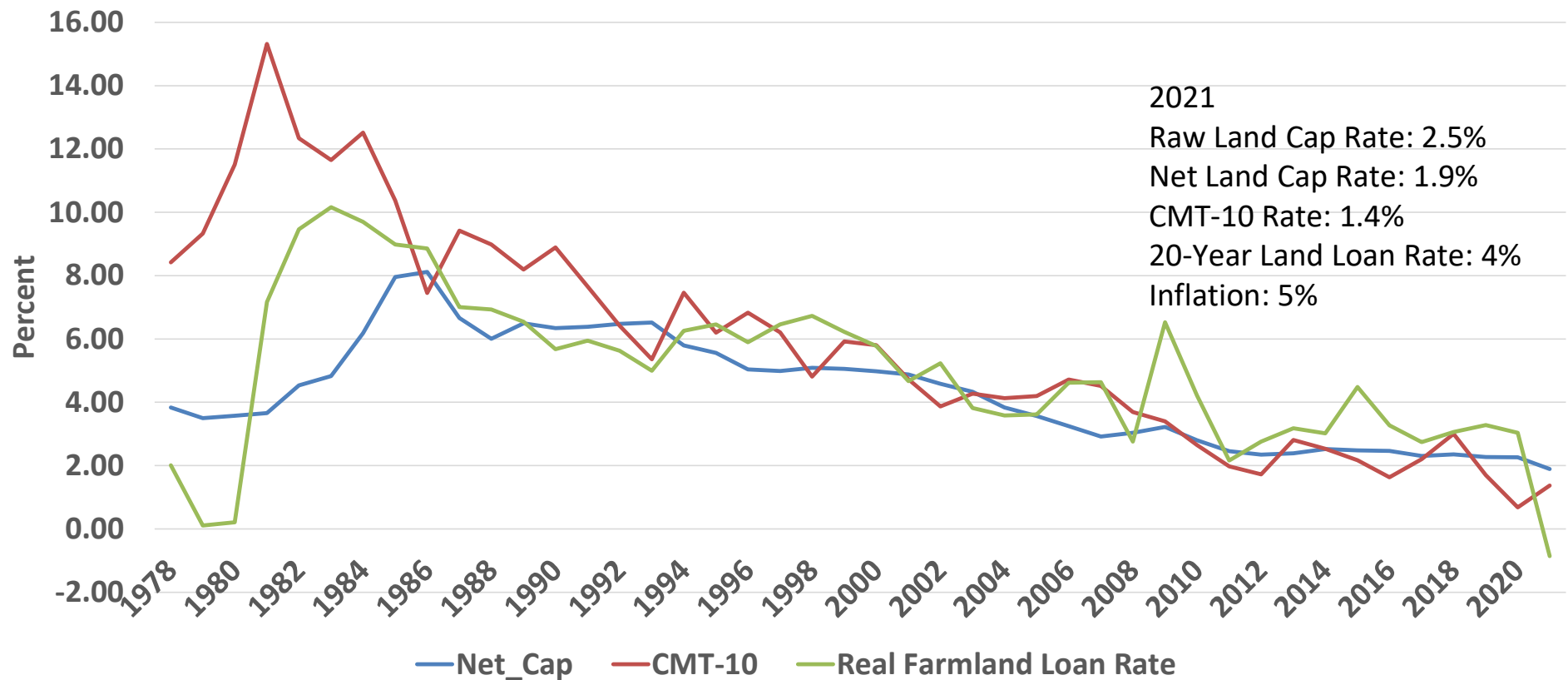


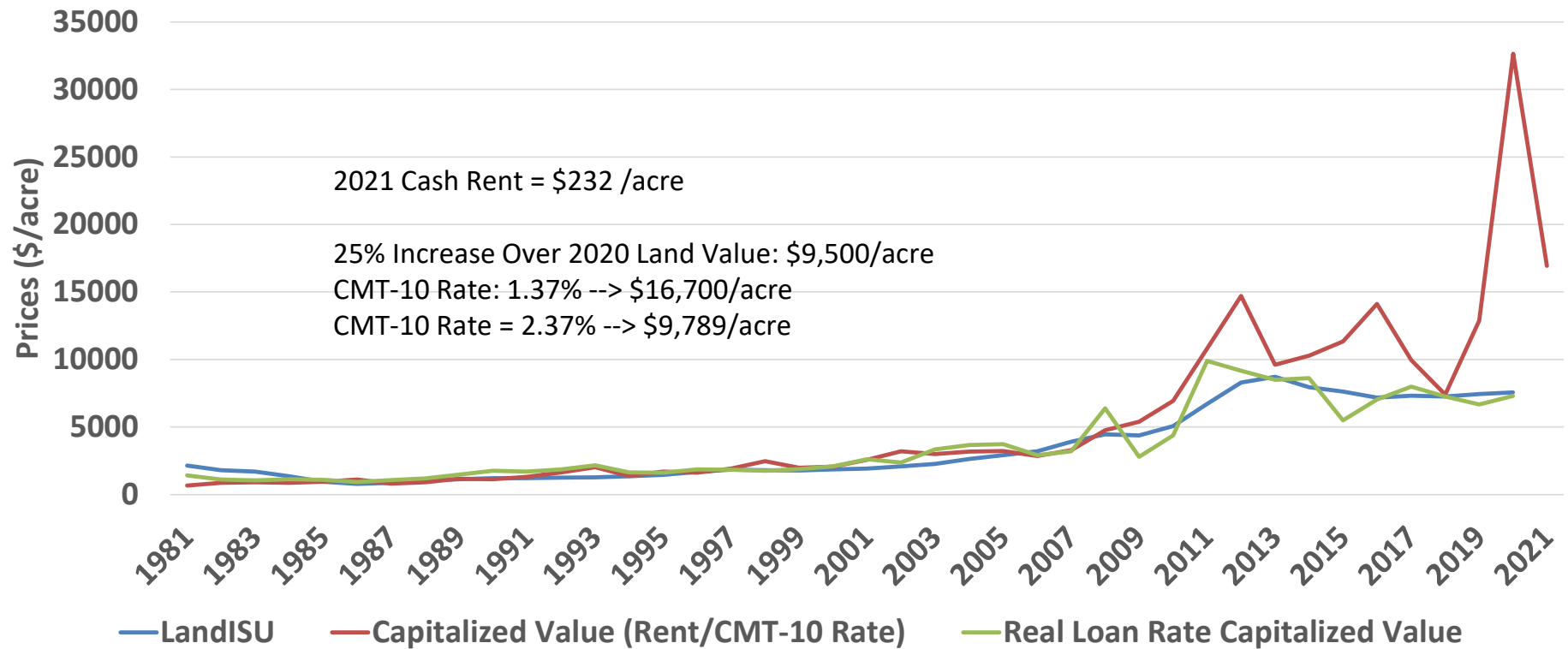
Figure 5: Three-year rolling geometric correlations with U.S. 32 state farmland returns, 1970 to 2019⁸

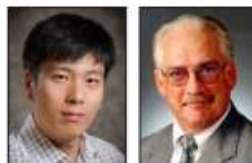
<https://farmland.illinois.edu/research-briefs/>

Net Rent to Land Value Ratio vs. 10-Year CMT Interest Rates vs. Inflation-adjusted Chicago Fed Farmland Loan Rate



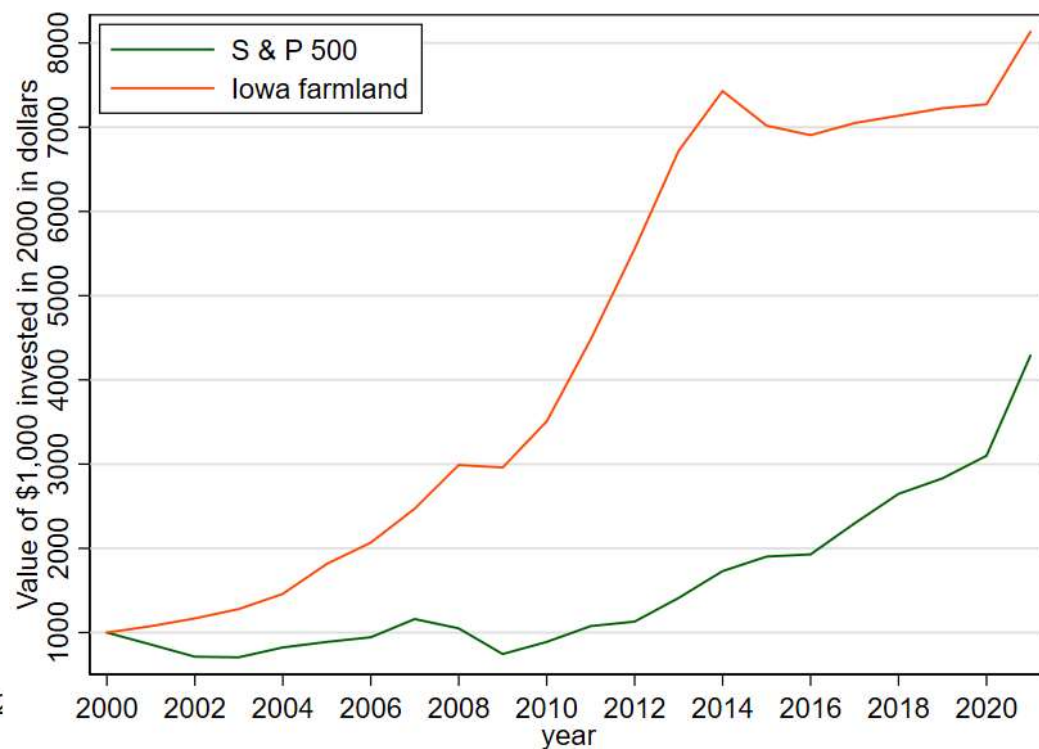
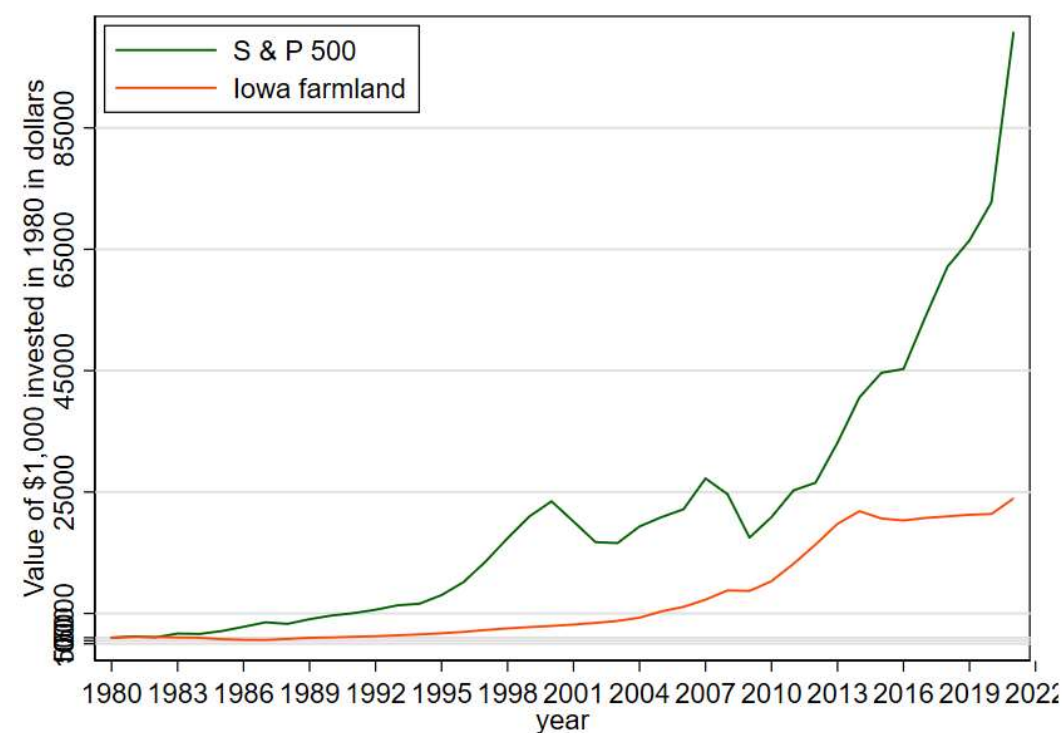
ISU Land Values vs. CMT-10 Capitalized Value vs. Real Loan Rate Capitalized Value

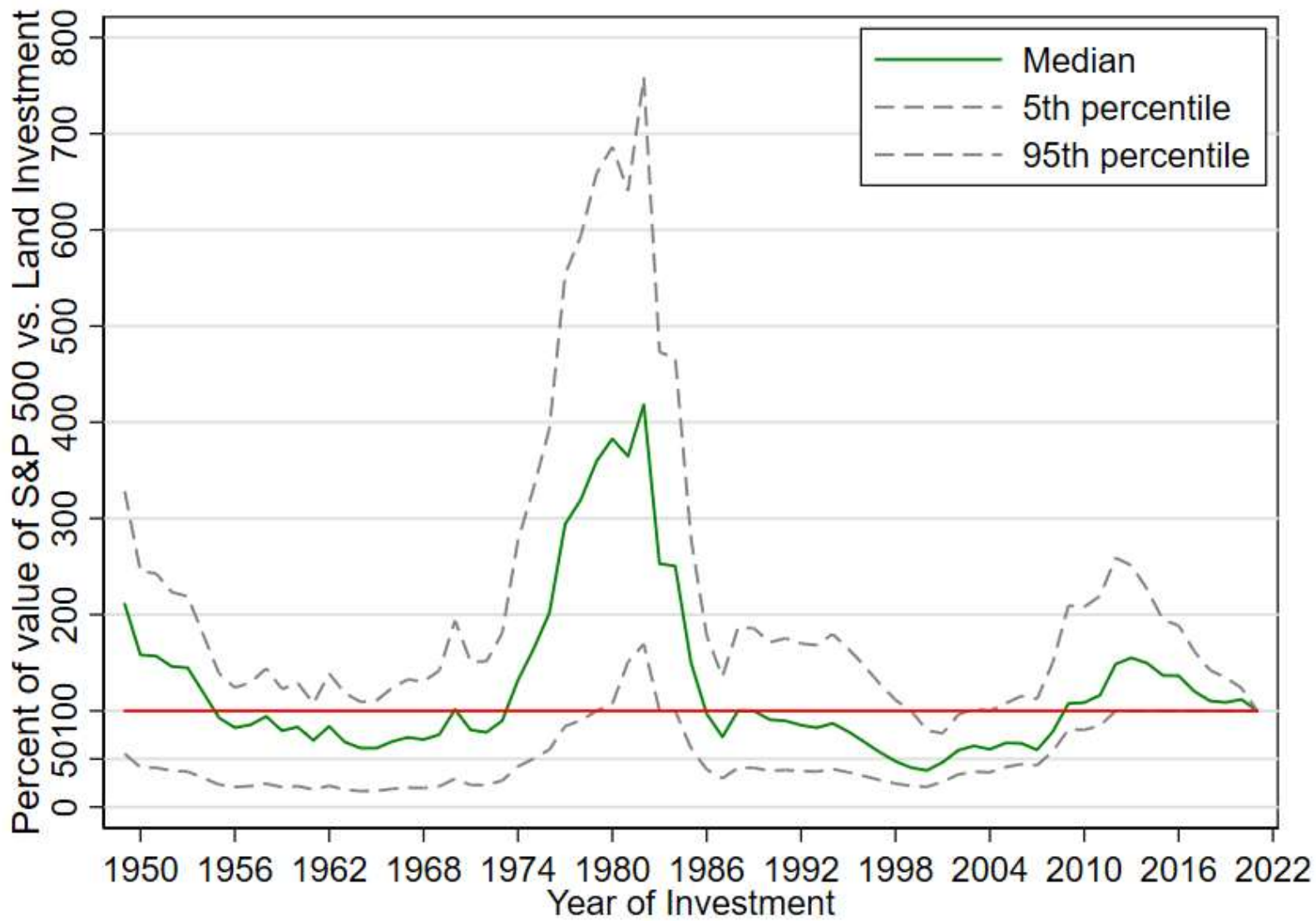




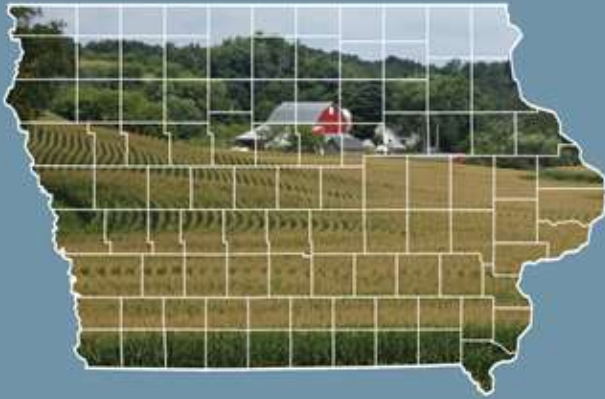
Comparing the stock market and Iowa land values: A question of timing

By Wendong Zhang, extension economist, 515-294-2536, wdzhang@iastate.edu
and Mike Duffy, retired extension economist





Iowa Farmland Ownership and
Tenure Survey, 1982-2017:
A Thirty-Five Year Perspective



PM 1988 August 2018

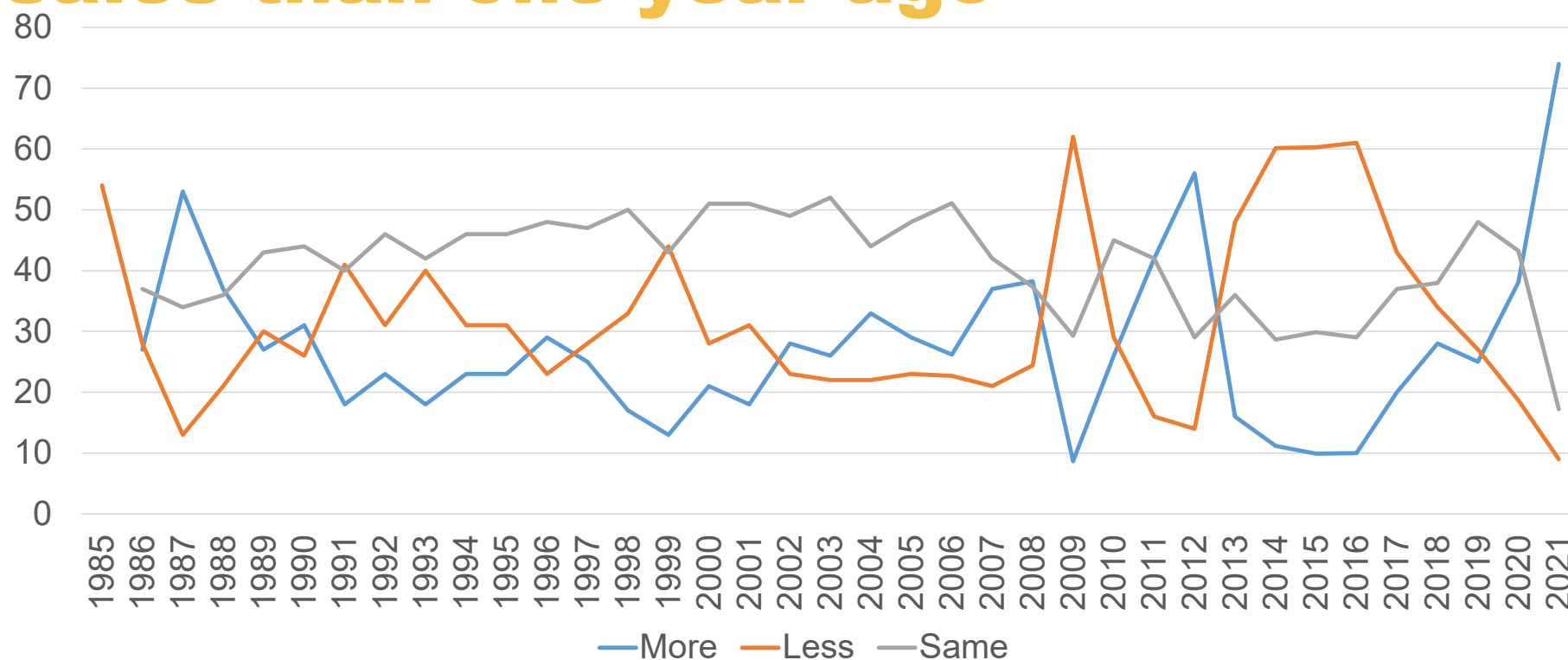
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- **82% of Iowa land is debt-free**
- 60% of land owned by owners 65+ years old, one-third of land owned by 75+ years old, 13% of land owned by women landowners 80+ years old
- Ownership continues to shift from sole ownership to trusts and corporations
- **53% of Iowa land rented out – mainly cash rent**
- 34% of Iowa land owned by landlords with no farming experience, 23% of land owned by retired farmers who do not currently farm
- **29% of Iowa land owned primarily for family/sentimental reasons**

(\$5 each print copy!)

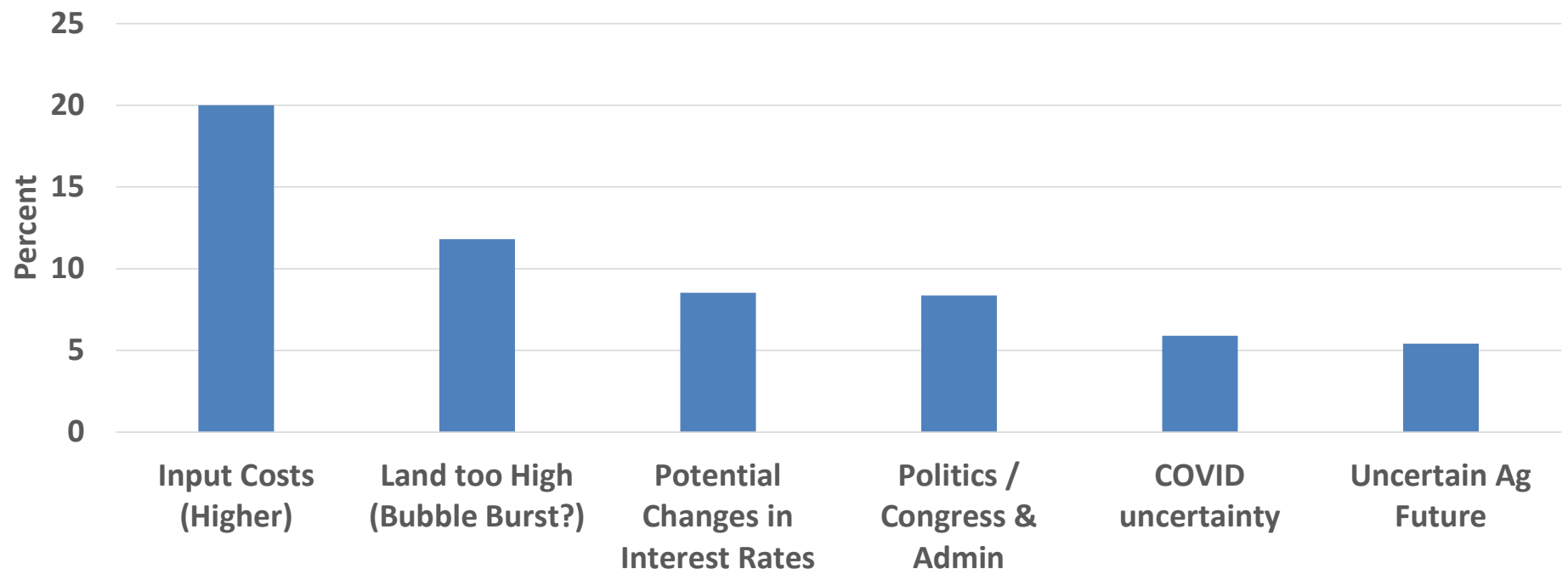
<https://store.extension.iastate.edu/product/6492>

74% of respondents reported more sales than one year ago



Major Negative Factors Affecting Iowa Farmland Market, 2021

Negative Factors Affecting 2021 Farmland Market



the **American Families Plan** proposes taxing previously unrealized capital gain upon the transfer of appreciated property at death or by gift. This new tax—never before implemented in the United States—would generally apply to gain exceeding \$1 million per person. The AFP proposes increasing the top marginal tax rate for ordinary income, taxing some capital gain at ordinary income tax rates, subjecting more income to the 3.8% Medicare tax, and taxing unrealized capital gain at death or upon gift. As proposed, the AFP would generally eliminate the tax-free step up in basis for capital gain exceeding \$1 million - **So the first \$1 million would still receive a tax-free step up in basis, but the rest would receive the step up only after paying the tax**

Married couple owning 722 acres jointly, \$519,561 new tax liability per spouse (bought land in 2005 at \$3k/acre)

CARD Policy Briefs

Center for Agricultural
and Rural Development

IOWA STATE UNIVERSITY

August 2021
21-PB 35

The Tax Implications of the American Families Plan on Iowa Farmland Owners

Kristine Tidgren*, Dolezal Adjunct Assistant Professor, Agricultural Education & Studies Department, Director, Center for Agricultural Law and Taxation, Iowa State University, ktidgren@iastate.edu

Wendong Zhang, Associate Professor, Department of Economics and Center for Agricultural and Rural Development, Iowa State University, wdzhang@iastate.edu

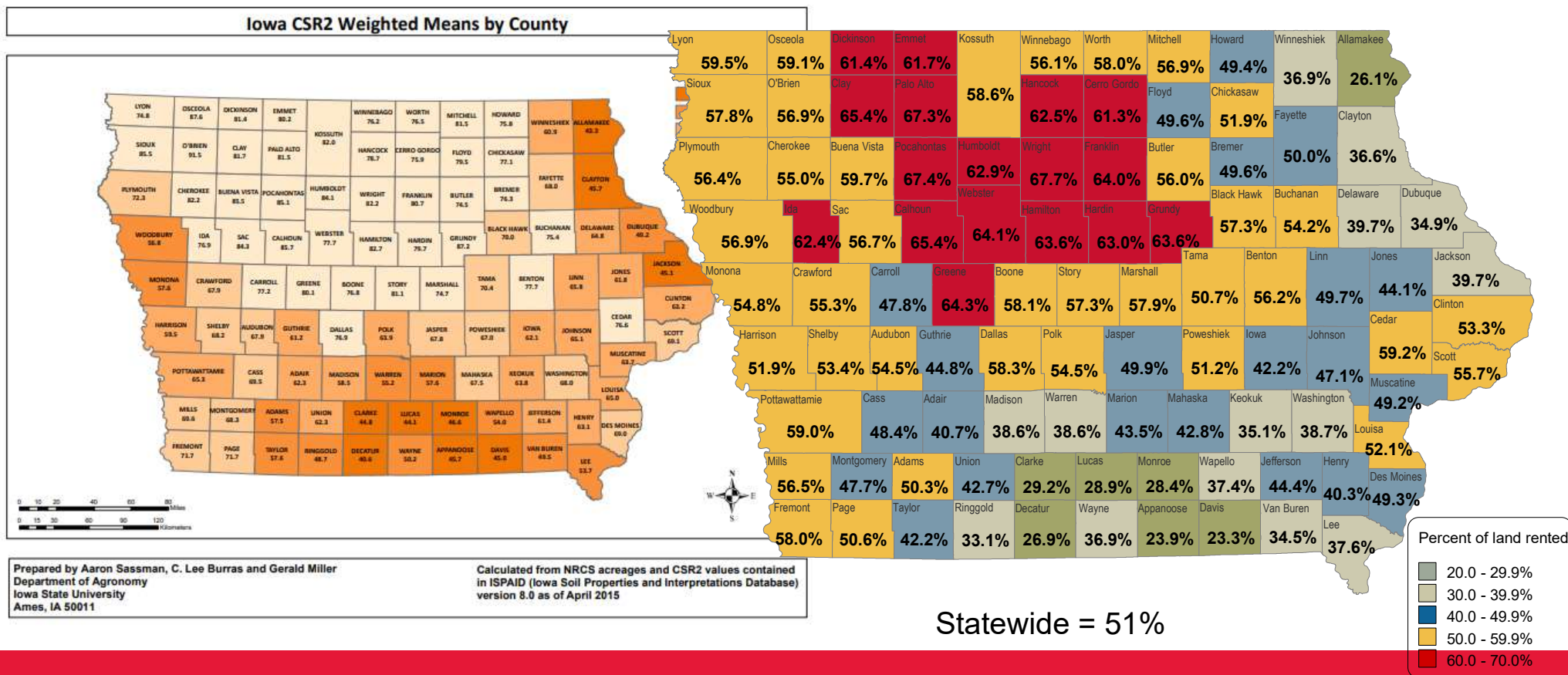
<https://www.card.iastate.edu/products/publications/pdf/21pb35.pdf>

CSR2 by Crop Reporting District, 2021

	Reported Average CSR2		
	High Quality	Medium Quality	Low Quality
Northwest	89	80	67
North Central	85	75	61
Northeast	82	68	51
West Central	81	70	56
Central	86	75	60
East Central	86	71	54
Southwest	77	62	48
South Central	72	56	40
Southeast	82	68	49
STATE	83	70	55

CSR2 and Percent of land in farms rented out, 2017

Iowa CSR2 Weighted Means by County



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Source: 2017 USDA Census of Agriculture

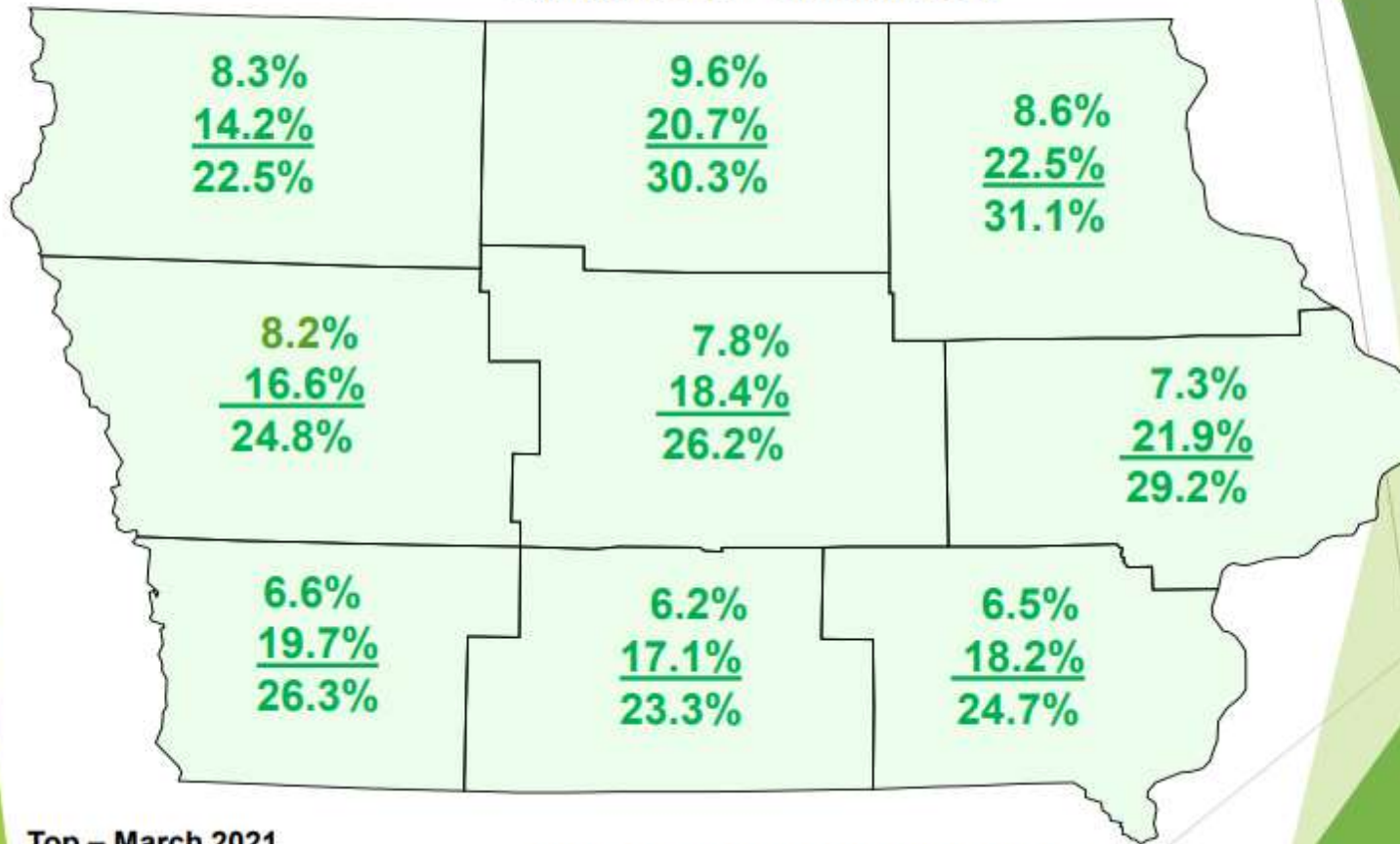
Ag Decision Maker

CSR2 and % of Land Rented Out

	Reported Average CSR2			Implied \$/CSR2		
	High Quality	Medium Quality	Low Quality	High Quality	Medium Quality	Low Quality
Northwest	89	80	67	\$168/CSR2	\$150/CSR2	\$130/CSR2
North Central	85	75	61	146	133	117
Northeast	82	68	51	148	141	138
West Central	81	70	56	154	141	132
Central	86	75	60	153	139	126
East Central	86	71	54	164	150	139
Southwest	77	62	48	120	113	107
South Central	72	56	40	121	110	103
Southeast	82	68	49	147	124	107
STATE	83	70	55	\$147/CSR2	\$134/CSR2	\$122/CSR2

REALTORS® Land Institute- Iowa Chapter September 1, 2021

September 2020– September 2021



Top – March 2021

Bottom – September 2021

Nine Crop Reporting Districts

Iowa

7.8%
<u>18.8%</u>
26.6%

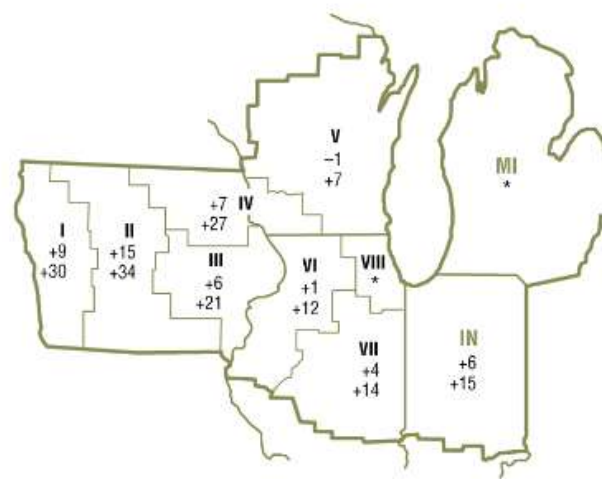
Midwest Farmland Values Surged in the Third Quarter

According to the most recent *AgLetter*, Seventh District farmland values in the third quarter of 2021 were 18 percent higher than a year ago—the largest year-over-year gain in nine and a half years. Values for “good” agricultural land in the third quarter of 2021 were 6 percent higher than in the second quarter.

Percent change in dollar value of “good” farmland

	July 1, 2021 to October 1, 2021	October 1, 2020 to October 1, 2021
Illinois	+3	+13
Indiana	+6	+15
Iowa	+10	+28
Michigan	*	*
Wisconsin	+1	+10
Sevent District	+6	+18

*Insufficient response.



Top: July 1, 2021 to October 1, 2021

Bottom: October 1, 2020 to October 1, 2021

Farmland Values Surge Alongside Strength in Agriculture

Agricultural credit conditions in the Tenth District remained strong in the third quarter and farm real estate values increased sharply.

November 15, 2021 | Agriculture | Ag Credit Survey



Federal Reserve Bank of Kansas City

DENVER / OKLAHOMA CITY / OMAHA

Percent change from previous year *

	Nonirrigated	Irrigated	Ranchland
Kansas	9	20	14
Western Missouri	18	n/a **	25
Mountain States***	9	9	9
Nebraska	16	19	21
Oklahoma	9	n/a **	9
Tenth District	14	16	17

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

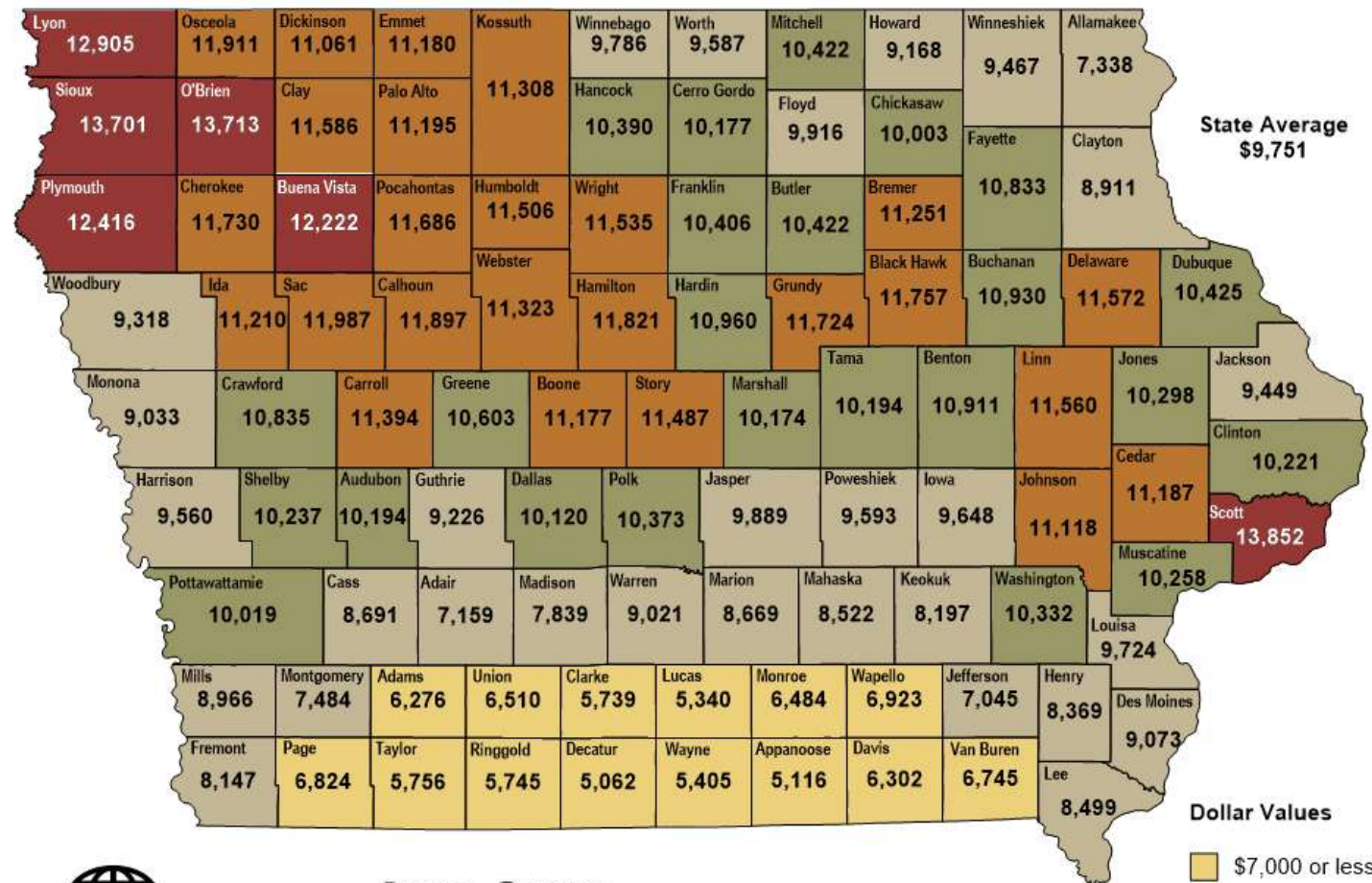
** Not reported due to small sample size.

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



Center for Agricultural and Rural Development

2021 Iowa Land Values



Dollar Values

-  \$7,000 or less
 \$7,000–\$10,000
 \$10,000–\$11,000
 \$11,000–\$12,000
 \$12,000 or more

99 for nominal



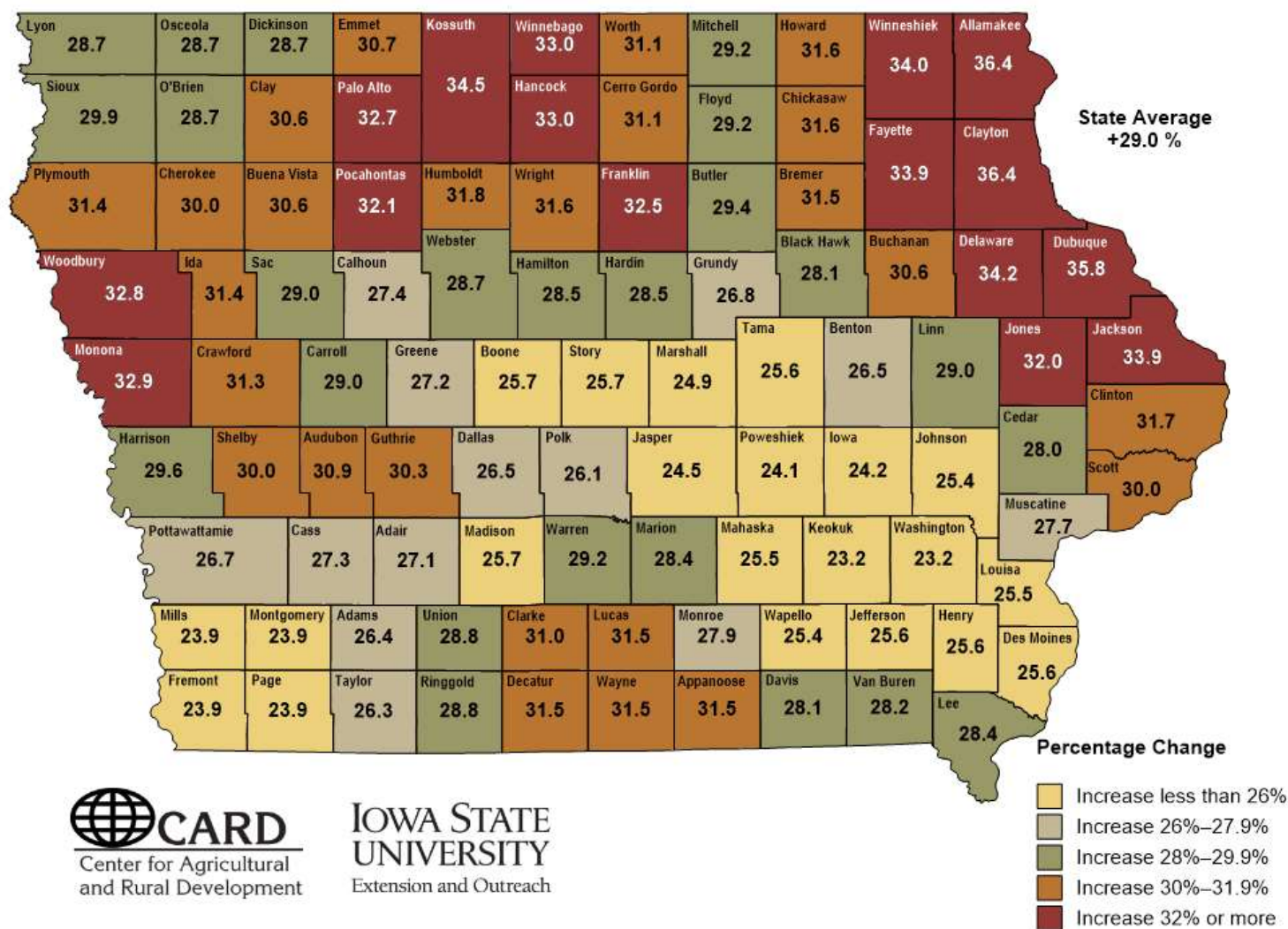
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Dollar Values

	\$7,000 or less
	\$7,000–\$10,000
	\$10,000–\$11,000
	\$11,000–\$12,000
	\$12,000 or more

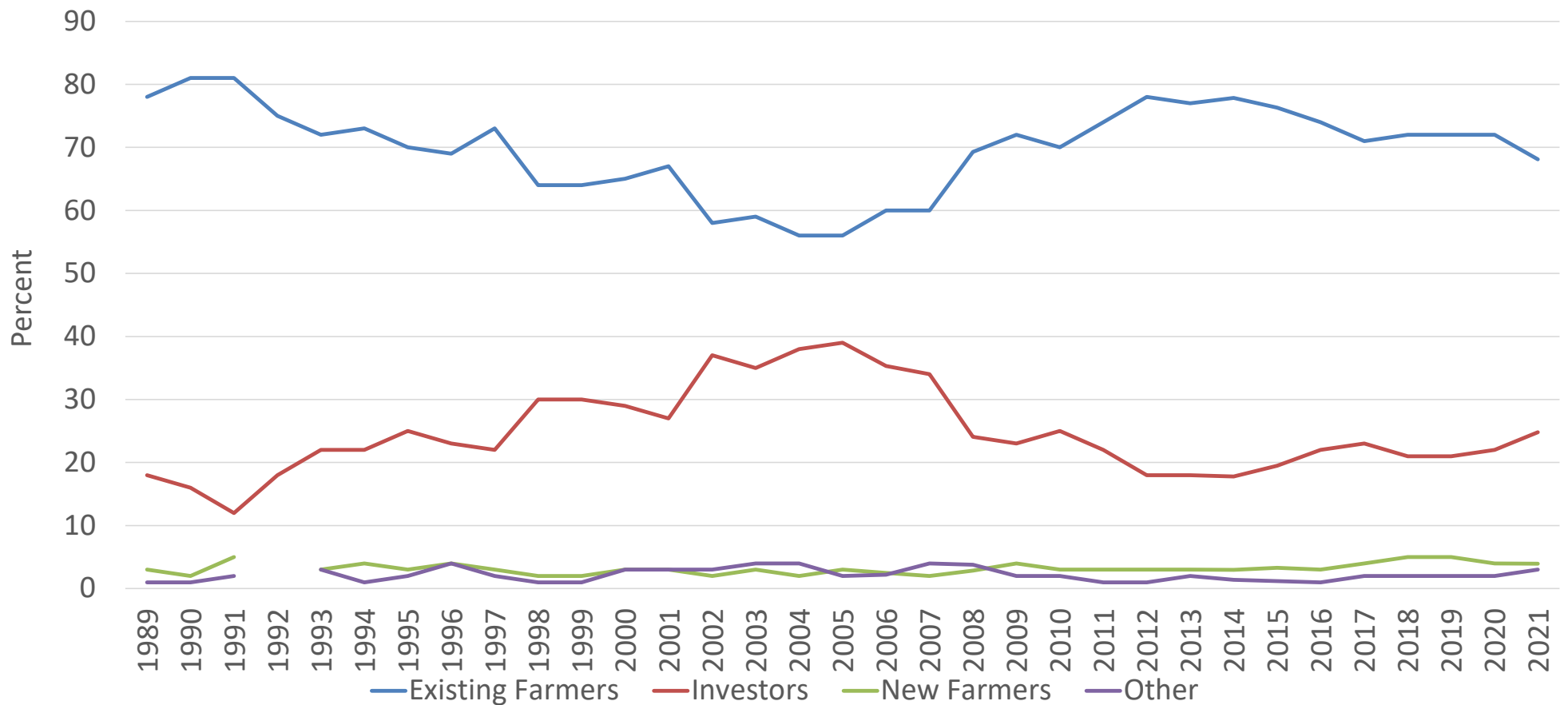


Percentage Change in Iowa Land Values 2020 to 2021



**Percent
Changes in
Land
Values
from Nov
2020**

Iowa Farmland Purchases by Buyer Types 1989–2021



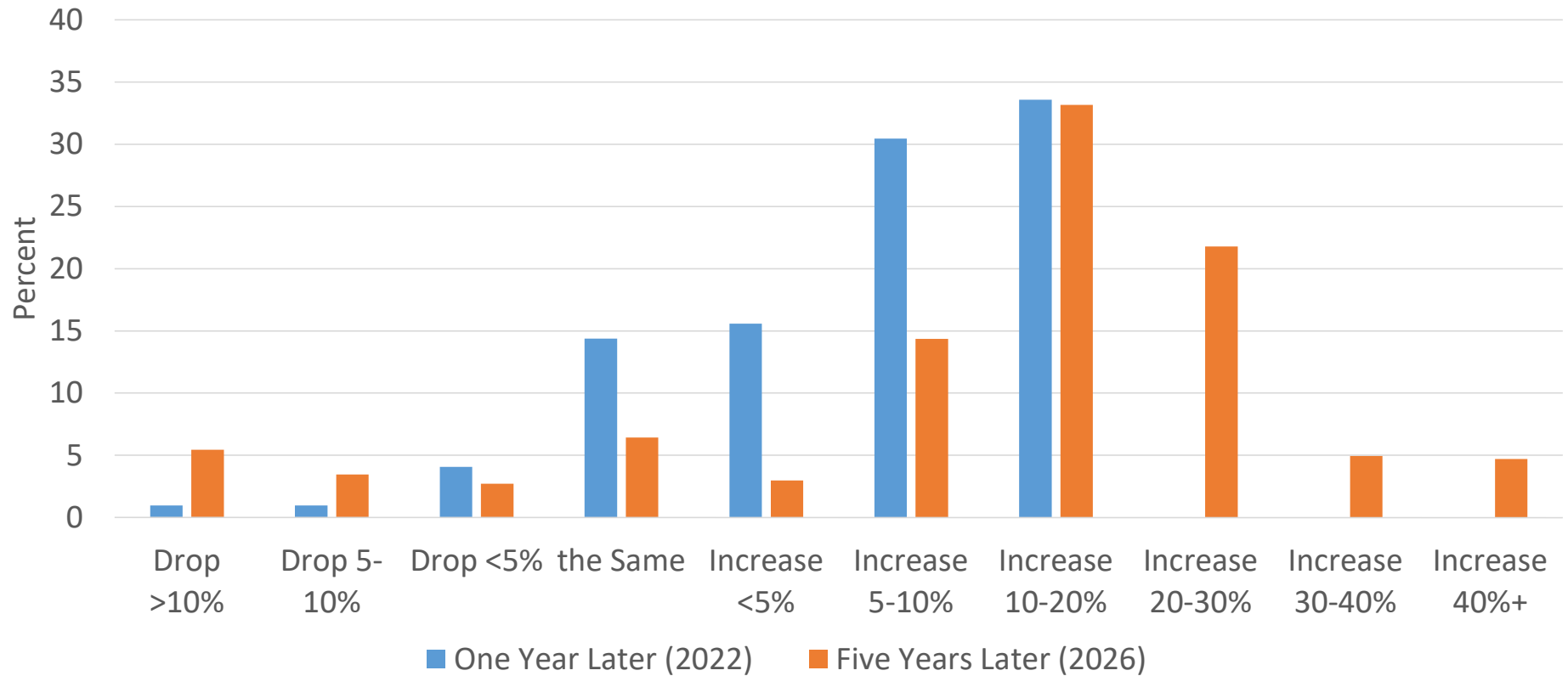
Iowa Farmland Purchases by Seller Types, 2021

	Active Farmers	Retired Farmers	Estate Sales	Investors	Other
	PERCENT				
Northwest	4	18	66	8	4
North Central	8	19	60	12	2
Northeast	13	33	45	8	1
West Central	7	26	57	5	5
Central	8	26	54	9	3
East Central	9	25	54	9	3
Southwest	12	28	43	14	3
South Central	8	23	49	18	2
Southeast	7	26	57	6	3
STATE	9	24	54	10	3

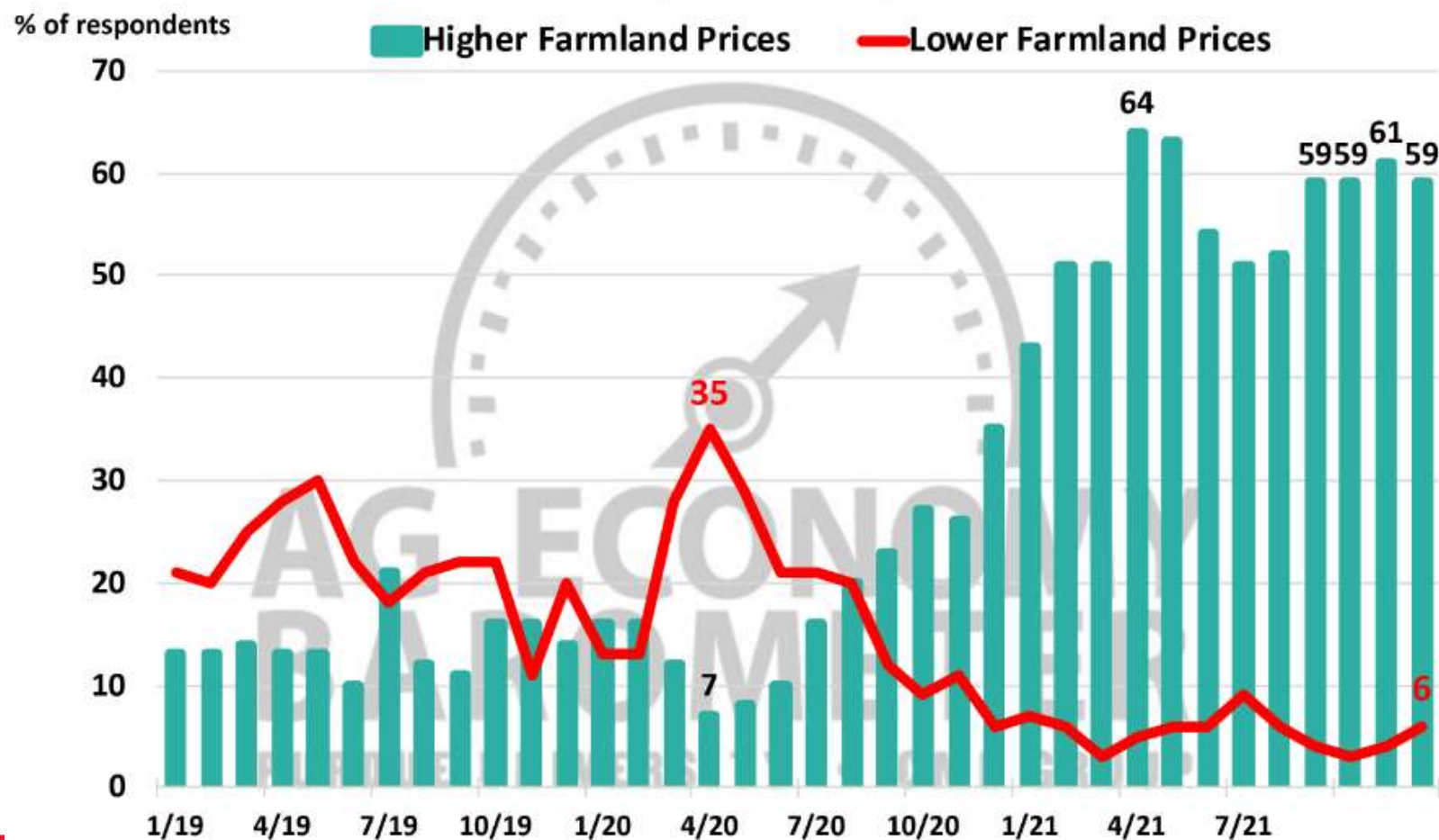
One- and Five-year Cash Crop Price Predictions, 2021

	Predicted Cash Corn Prices		Predicted Cash Soybean Prices	
	One Year Later	Five Years Later	One Year Later	Five Years Later
Northwest	\$5.04	\$5.04	\$11.45	\$11.60
North Central	\$5.07	\$5.13	\$11.34	\$11.67
Northeast	\$5.25	\$5.29	\$11.95	\$12.32
West Central	\$5.09	\$5.02	\$11.45	\$11.58
Central	\$5.10	\$5.14	\$11.79	\$11.85
East Central	\$5.22	\$5.33	\$12.27	\$12.29
Southwest	\$4.99	\$5.26	\$11.50	\$11.50
South Central	\$4.75	\$4.90	\$11.00	\$11.43
Southeast	\$5.26	\$5.37	\$12.25	\$12.15
STATE (2020 Prediction)	\$5.09	\$5.11	\$11.55	\$11.72
2019 Prediction	\$3.51	\$4.10	\$8.50	\$9.79
2020 Prediction	\$3.92	\$4.24	\$9.97	\$10.59

Land value predictions for 2022 and 2026

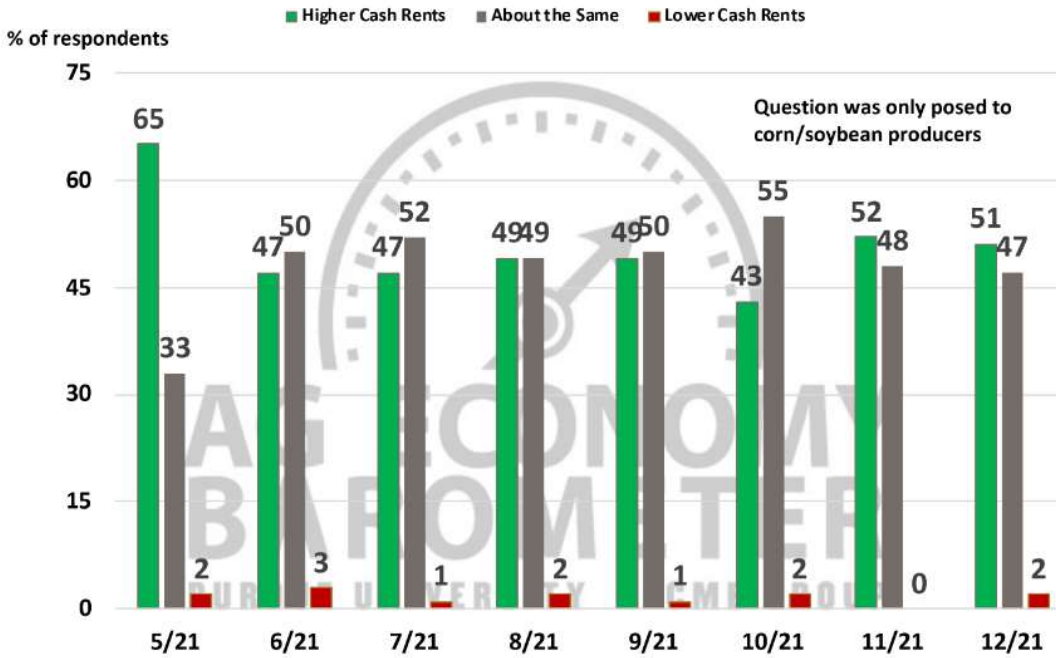


Farmland Price Expectations, 12 Months Ahead



**AG ECONOMY
BAROMETER**
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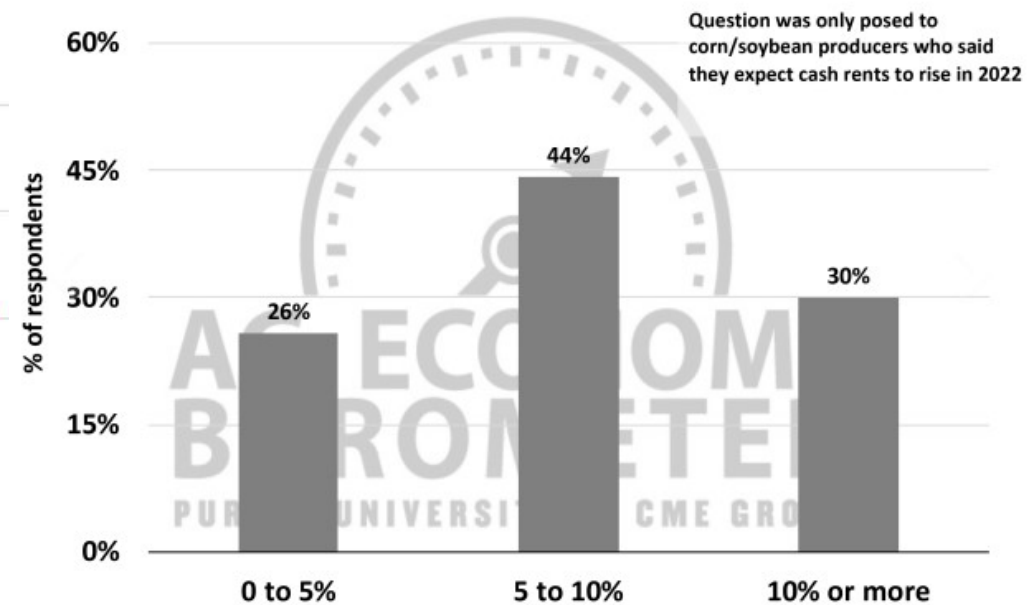
Compared to 2021, what are your expectations for cash rents in your area in 2022?



Source: Purdue Center for Commercial Agriculture, Producer Survey, December 2021



Compared to this year, by how much do you expect 2022 cash rents in your area to increase?

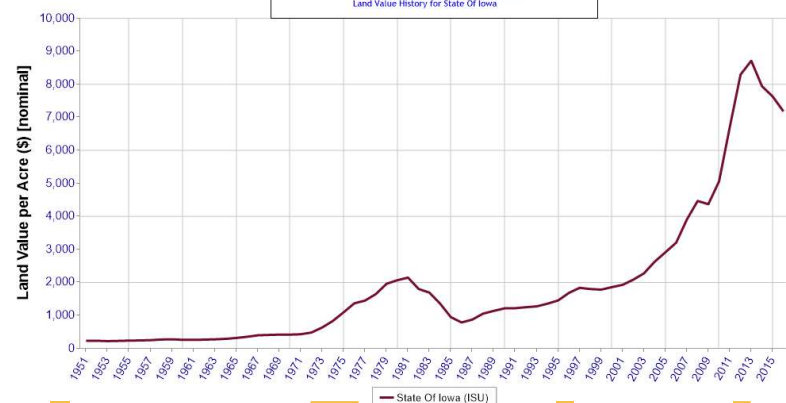


Source: Purdue Center for Commercial Agriculture, Producer Survey, September 2021

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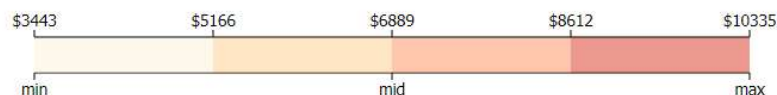
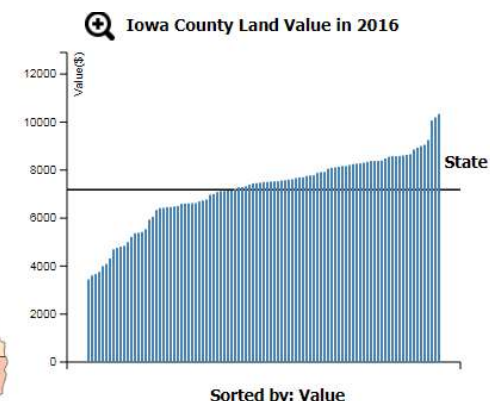
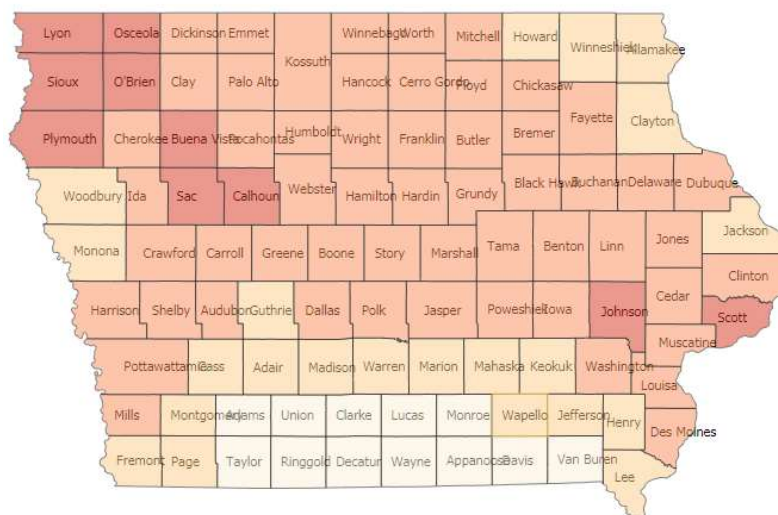
<https://www.card.iastate.edu/farmland>



Iowa Farmland Portal



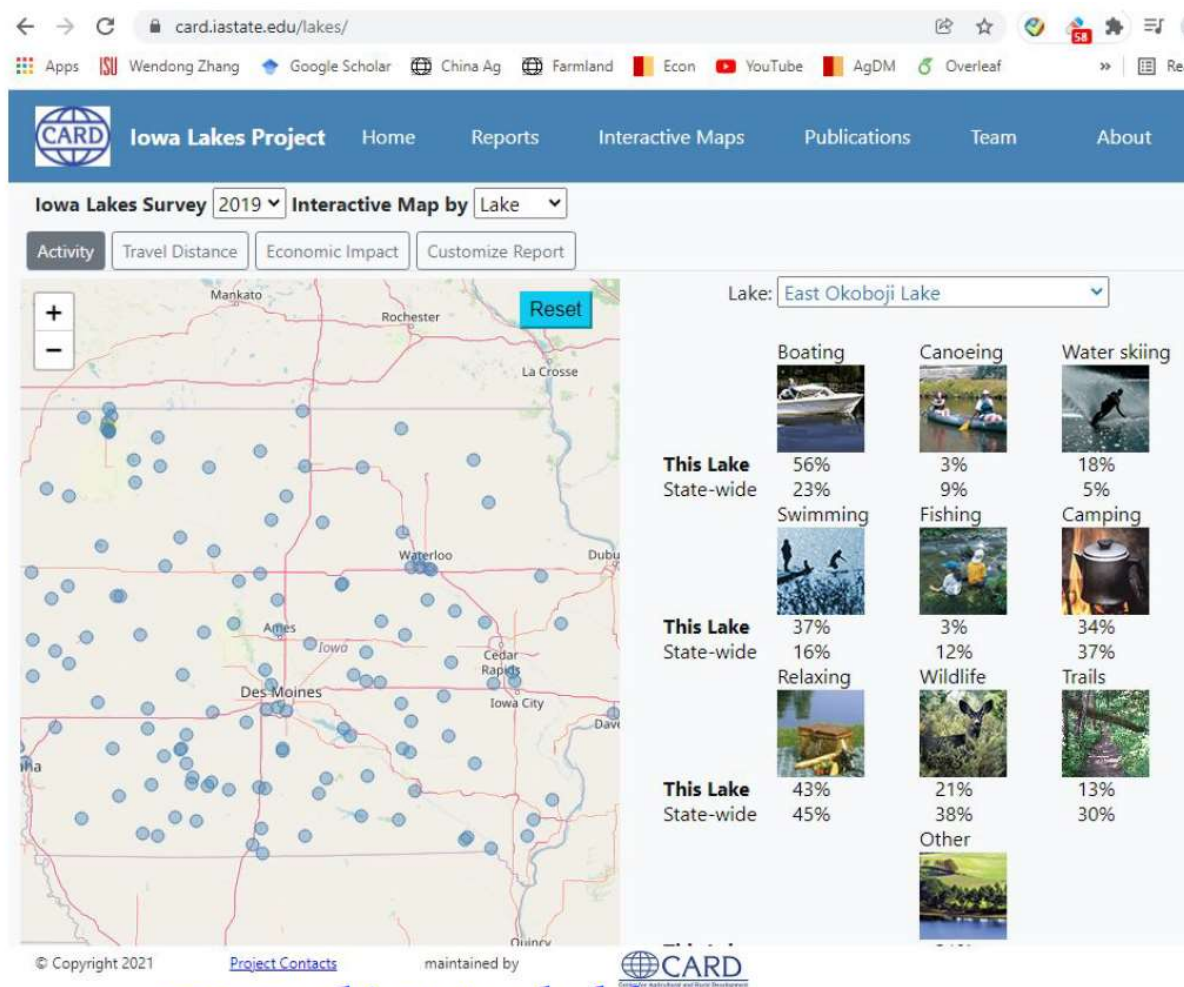
#ISUlandvalue



Questionnaire: [Iowa Lakes Survey 2019](#) Survey Report: [Iowa Lakes Report 2019](#)

Summary

- Sixty-five percent of Iowa respondents reported at least one single-day trip, while about 20% reported taking at least one overnight trip.
- In 2019, Iowa households took around 9 million single-day trips across Iowa. The top-10 most visited lakes in 2019 were Clear Lake, Saylorville Reservoir, Ada Hayden Lake, Coralville Lake, Lake Macbride, Grays Lake, Big Creek Lake, Red Rock Lake, George Wyth Lake, and Lost Grove Lake, respectively.
- Respondents made most of their lake trips in the summer, and the top three activities selected by respondents were relaxing and/or picnicking, fishing, and nature/wildlife watching, respectively.
- On average, Iowa respondents took around 8 trips and traveled 48 miles to visit Iowa lakes in 2019; neighboring states' respondents took one trip and traveled 84 miles to visit Iowa lakes in 2019.
- We estimate that the total statewide expenses from all single-day trip takers was \$1.023 billion, or an average of \$7.4 million per lake.



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FINDING FIRMER GROUND:

The Role of Agricultural Cooperation in U.S.–China Relations

A Report by the US Heartland China Association and The Carter Center

September 2021

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<https://usheartlandchina.org/wp-content/uploads/2021/09/Finding-Firmer-Ground-The-Role-of-Agricultural-Cooperation-in-US-China-Relations.pdf>

Thank You!



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Extension and Outreach

2019 ISU Land Value Survey

The 2019 ISU Land Value Survey shows a 2.3 percent increase in average Iowa farmland values from November 2018 to November 2019. The average statewide value of an acre of farmland is now estimated at \$7,432. This modest increase, which barely exceeds the pace of inflation, is the second rise over the past six years, but still represents a 15 percent decrease from the 2013 peak in nominal land values, or a 23 percent drop in inflation-adjusted values.

2017 Iowa Farmland Ownership & Tenure Survey Paper Copy Available for Order (\$5 Only)

The new, 60-page 2017 Iowa Farmland Ownership and Tenure Survey report is available for order at the Extension Store for only \$5 each paper copy. This is a unique survey across the nation which provides statistically representative information on many aspects of land ownership, tenure and transitions in Iowa. For example, the survey finds that 60% of Iowa land is owned by people 65 years or older, 82% of Iowa land is owned free of debt, and 29% of all acres is primarily owned for family or sentimental reasons.

1. What are you interested in?

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China Ag Center · Publications

Xi He and Wendong Zhang. 2020. "Implications of Hong Kong's Special Status Revocation for Agricultural Trade between the United States, Hong Kong, and Mainland China." *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

In 1992, the United States granted Hong Kong status as a customs territory separate from mainland China. On June 29, 2020, however, the US Department of Commerce withdrew that status due to recent tensions between China and the United States. Hong Kong, as the world's largest re-exporting port, plays a large intermediary role in US-China trade, and the revocation of its special status may provoke China into taking retaliatory economic and/or political actions. He and Zhang examine trends in Hong Kong's import/export of US agricultural products and how that trade may be affected. They find that the revocation itself is not likely to directly affect US-China agricultural trade prospects much if neither China nor the United States responds with further actions.

Chen-Ti Chen, Tao Xiong, and Wendong Zhang. 2020. "Large Hog Companies Gain from China's Ongoing African Swine Fever." *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Since November 2018, China has reduced its hog and sow inventory by almost 32% due to ongoing outbreaks of African Swine Fever (ASF).

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