

Overview of the Farmland Market

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Ag Credit School, Ames, Iowa, June 8, 2023



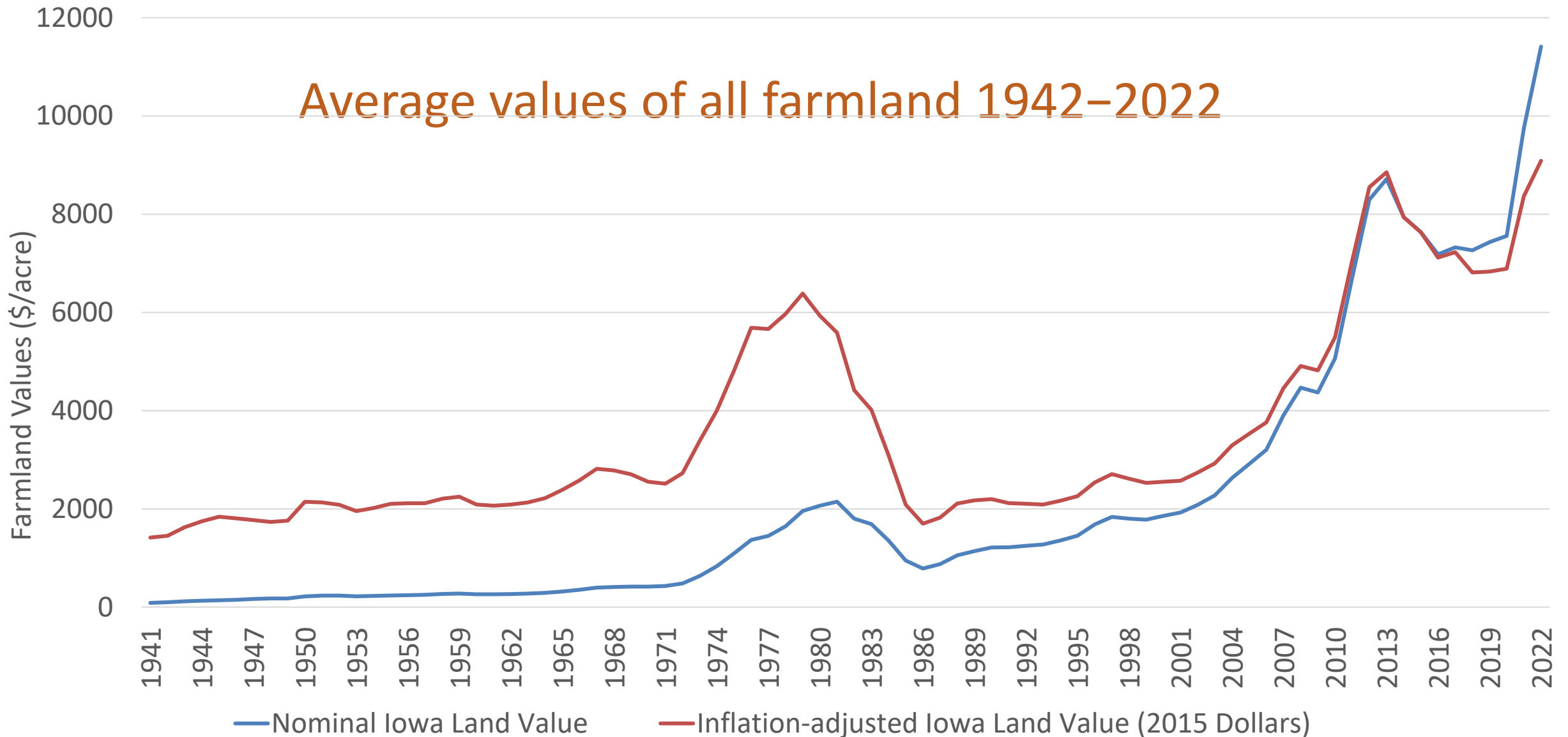
Dyson
Cornell
SC Johnson College of Business

Cornell CALS
College of Agriculture and Life Sciences

A Quick Introduction: Dr. Wendong Zhang

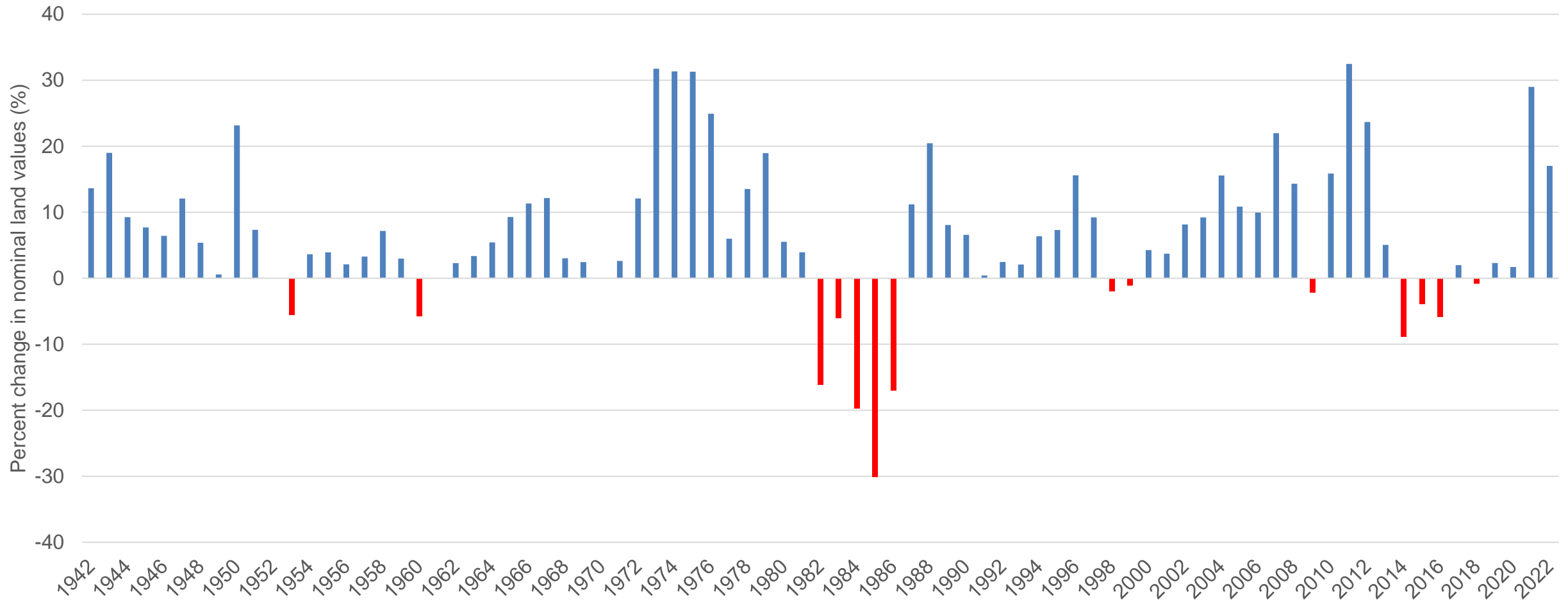
- Grew up in a rural county in Shandong Province, China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ from Ohio State in 2015
- Worked at Iowa State for 7 years, leading the Iowa Land Value Survey 15-22
- Moved to Cornell University Dyson School of Applied Economics & Mgmt in July 2022 (50% extension appointment)
- **New hire: Dr. Rabail Chandio (Ohio State Ag Econ)** <https://rabailchandio.com/>
- 2022 Iowa Farmland Ownership and Tenure Survey released in early June at <https://www.card.iastate.edu/farmland/ownership/>
- Research and extension interests:
 - Iowa land value/ownership** <https://www.card.iastate.edu/farmland>
 - ISU China Ag Center** <https://www.card.iastate.edu/china>
 - Cornell Institute for China Economic Research (CICER) <http://china.dyson.cornell.edu/>

Nominal and inflation-adjusted land values all reach historic highs (Nominal values +17%; Inflation-adjusted values +8.6%)



2022 hike: 17% nominal, 8.6% inflation-adjusted

% Change in Nominal Iowa Farmland Values 1942–2022



Land Values by District and Quality, Nov 2022

District	Average Value	% Change	High Quality	% Change	Medium Quality	% Change	Low Quality	% Change
Northwest	\$14,878	22.3%	\$17,121	22.3%	\$13,710	24.2%	\$9,569	18.3%
North Central	\$12,449	16.7%	\$14,271	18.3%	\$11,171	15.9%	\$7,849	12.3%
Northeast	\$11,627	16.8%	\$13,806	12.2%	\$11,122	21.9%	\$8,047	19.8%
West Central	\$12,411	18.6%	\$14,821	20.6%	\$11,654	20.1%	\$8,161	15.9%
Central	\$12,582	17.1%	\$14,720	17.6%	\$11,527	15.5%	\$7,927	11.1%
East Central	\$12,595	14.0%	\$15,097	11.8%	\$11,876	16.7%	\$8,441	17.0%
Southwest	\$9,264	22.2%	\$11,419	21.2%	\$8,769	22.7%	\$6,081	18.0%
South Central	\$6,824	13.1%	\$9,478	15.7%	\$6,872	12.8%	\$4,379	7.9%
Southeast	\$9,276	9.8%	\$12,829	10.3%	\$8,677	6.2%	\$5,406	14.2%
Iowa Avg.	\$11,411	17.0%	\$13,817	16.8%	\$10,673	17.7%	\$7,369	15.2%

Cash Rents Tend to Follow Land Values

2019-2023 Overall Average of Typical Cash Rents for Corn and Soybean Acres by Iowa Crop Reporting District (dollars per tillable acre).

	2019	2020	2021	2022	2023
District 1	\$231	\$239	\$242	\$270	\$302
District 2	219	225	238	261	285
District 3	237	248	253	278	307
District 4	235	237	247	276	298
District 5	231	232	245	271	292
District 6	229	232	243	265	283
District 7	207	203	214	243	265
District 8	174	176	188	203	227
District 9	210	205	221	240	252
State	\$219	\$222	\$232	\$256	\$279

Table 1. Average and Professionally Managed Cash Rents, Illinois, 2021, 2022, and 2023P

Land Class	Soil Productivity Index	Average Corn Yield ¹ Bushels/Acre	Average Rent ² \$/Acre		ISPFMRA Rents \$/Acre		
			2021	2022	2021	2022	2023P
Excellent	133 to 147	211	\$277	\$314	\$309	\$369	\$386
Good	117 to 132	204	\$240	\$263	\$265	\$322	\$336
Average	100 to 116	190	\$185	\$215	\$225	\$275	\$284
Fair	<100	142	\$135	\$171	\$166	\$240	\$248

¹ Average corn yields from 2017 to 2021 for counties with average SPIs in the various ranges.

² Average of NASS cash rents for counties with average SPIs in the various ranges.

Data Sources:

National Agricultural Statistics Service, USDA, for corn yields and average rents

Illinois Society of Professional Farm Managers and Rural Appraisers (ISPFMRA) rents come from their land value effort available on the ISPFMRA.org website.

ILLINOIS



farmdocDAILY

<https://www.extension.iastate.edu/agdm/wholefarm/pdf/c2-10.pdf>

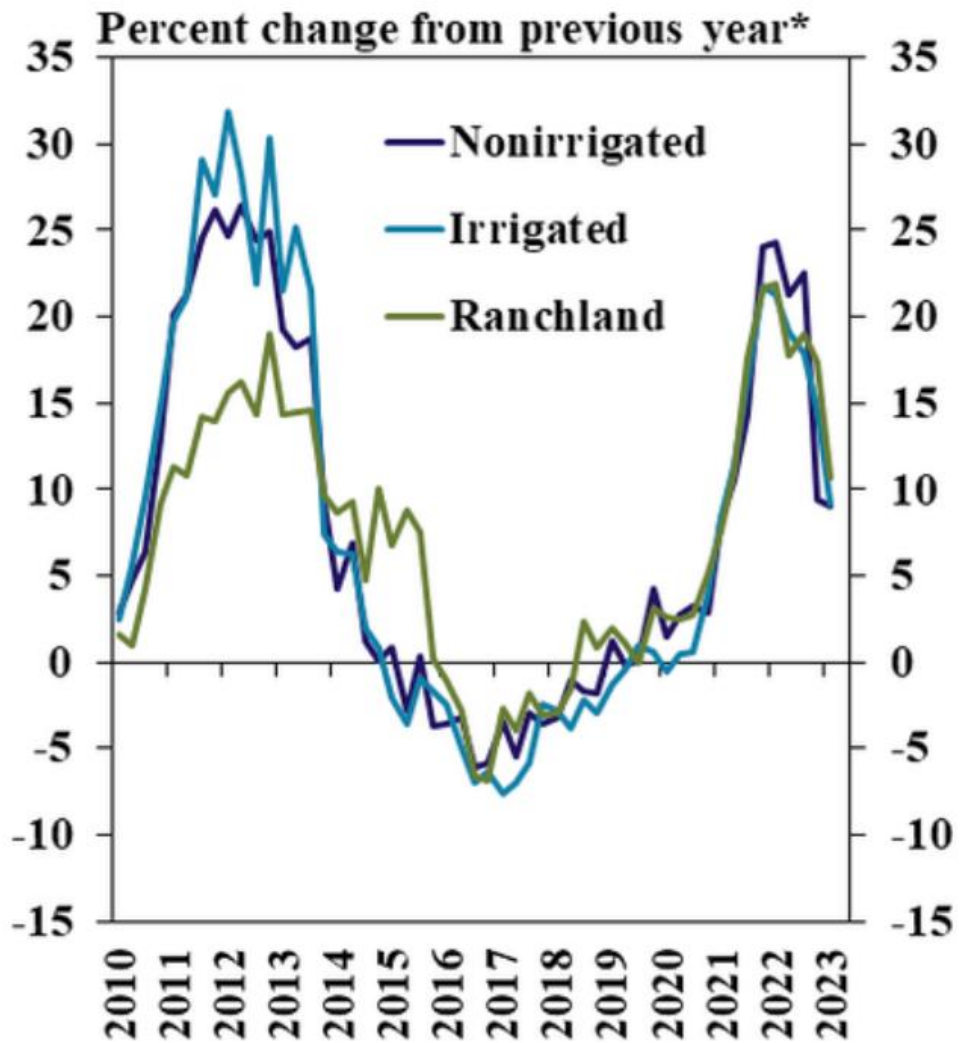


Federal Reserve Bank of Kansas City

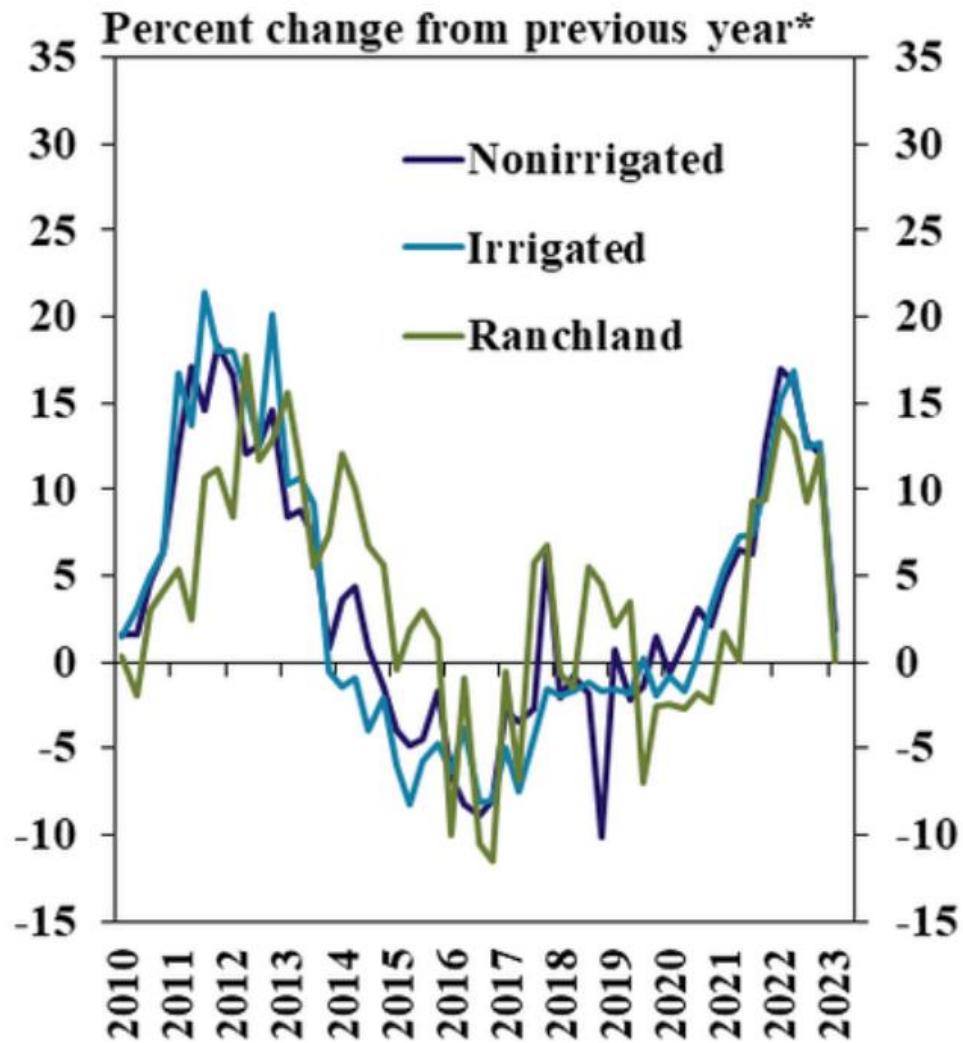
DENVER / OKLAHOMA CITY / OMAHA

May 11, 2023

Farmland Values



Cash Rents



FEDERAL RESERVE BANK *of* CHICAGO

Last Updated: 05/11/23

AgLetter

A quarterly newsletter on agricultural land values and credit conditions, based on data from the Bank's survey.

In the Latest Edition of *AgLetter*

Midwest Farmland Values Still Rose but More Slowly in the First Quarter

According to the most recent *AgLetter*, Seventh District farmland values in the first quarter of 2023 were 10 percent higher than a year ago. Values for “good” agricultural land in the first quarter of 2023 were 2 percent higher than in the fourth quarter of 2022.

Percent change in dollar value of “good” farmland

	January 1, 2023 to April 1, 2023	April 1, 2022 to April 1, 2023
Illinois	+2	+11
Indiana	+8	+22
Iowa	+1	+7
Michigan	*	*
Wisconsin	+2	+15
Seventh District	+2	+10

NCREIF Farmland Property Index

• Permanent Cropland

0.53%	0.90%	0.68%	0.17%	2.30%
2Q2022	3Q2022	4Q2022	1Q2023	

• Annual Cropland

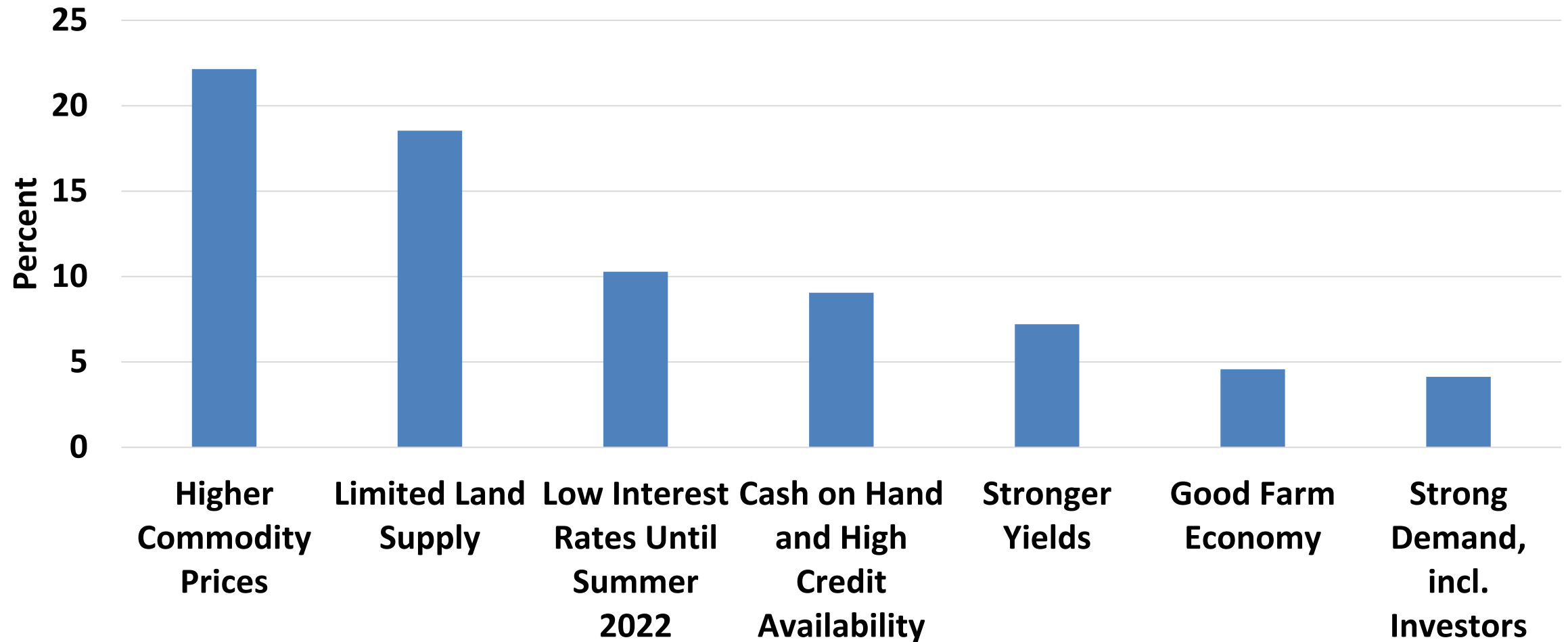
2.05%	2.67%	4.65%	3.30%	13.27%
2Q2022	3Q2022	4Q2022	1Q2023	

Local Land Supply and Demand Explain Variations in Land Market

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

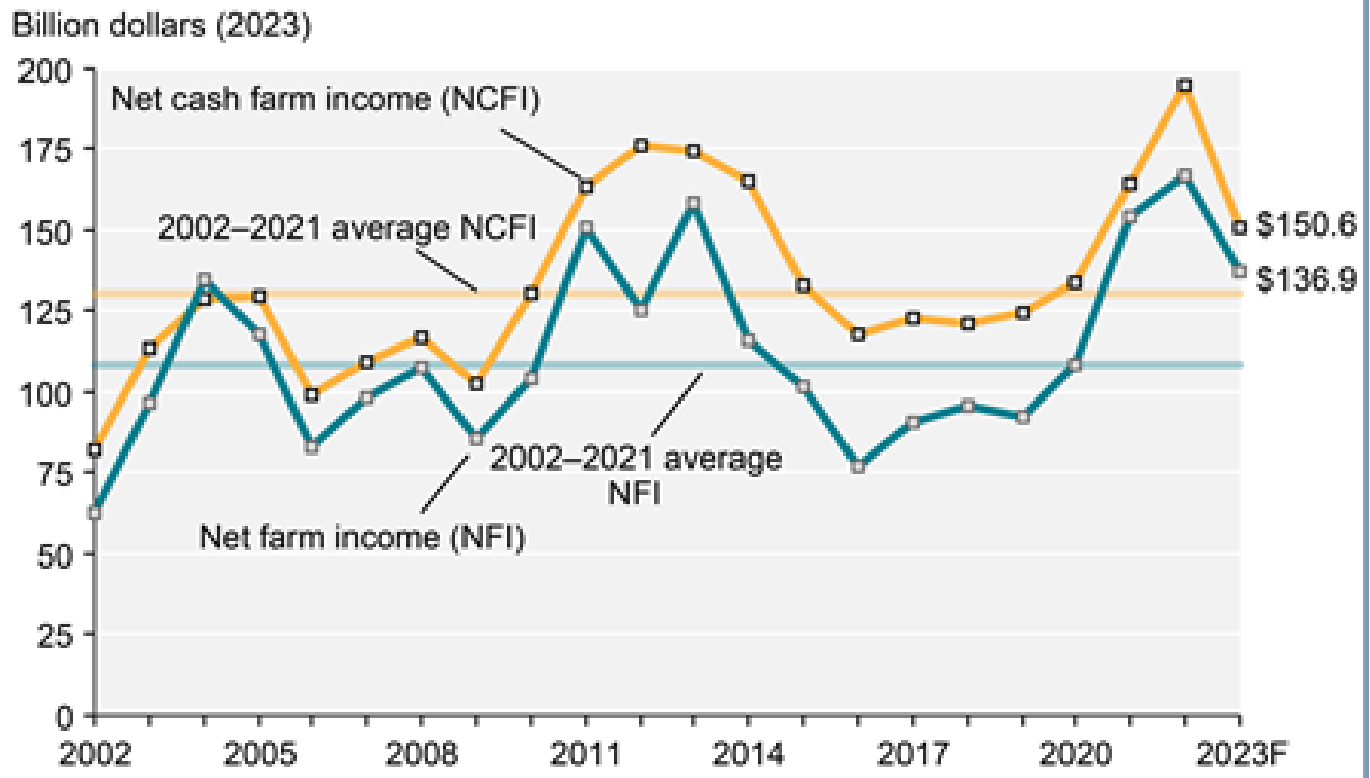
Major Positive Factors Affecting Iowa Farmland Market, 2022

Positive Factors Affecting 2022 Farmland Market



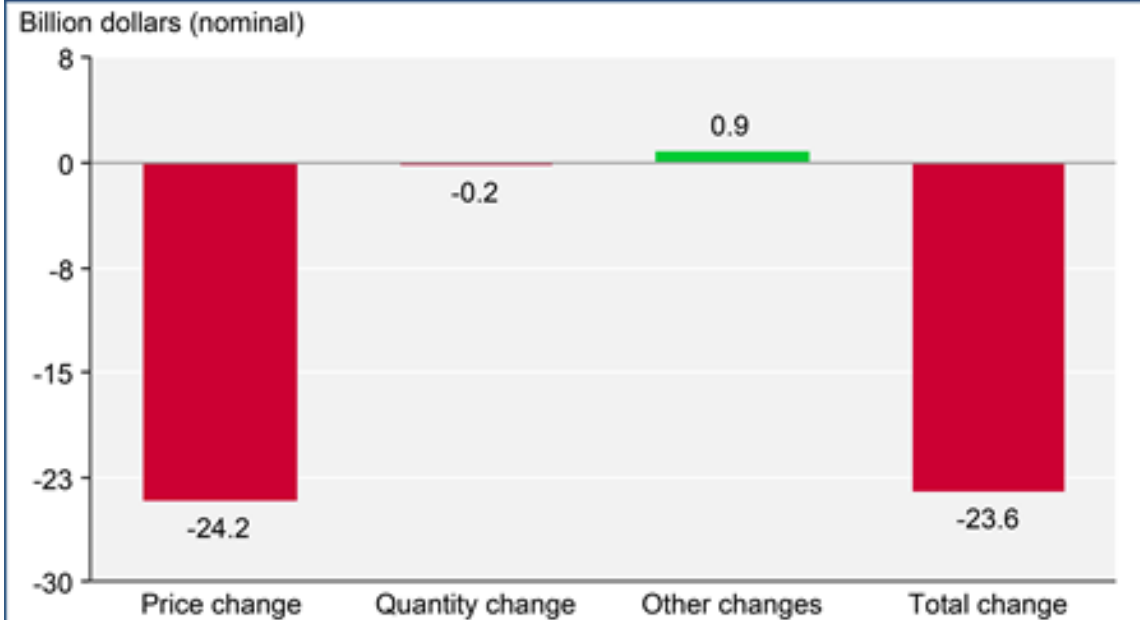
2023 Farm Income is Stronger, But is Smaller

U.S. net farm income and net cash farm income, inflation adjusted, 2002–2023F



Note: F = forecast. Data for 2022 and 2023 are forecasts. 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 2023 by USDA, Economic Research Service. Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of February 7, 2023.

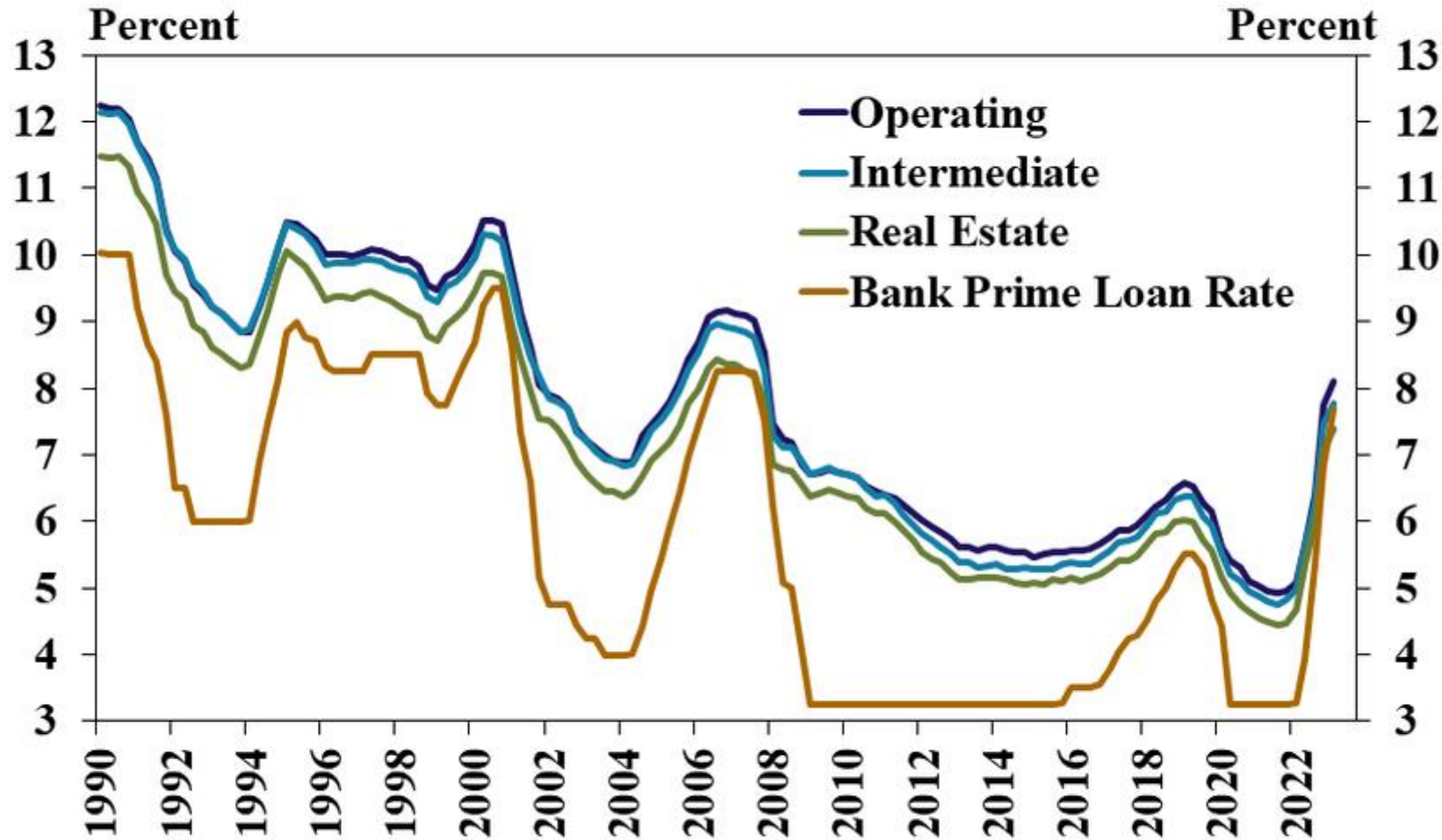
Change in U.S. farm cash receipts, 2022F–2023F, by component of change



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 February 7, 2023.

<https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/>

Chart 1: Tenth District Average Interest Rates

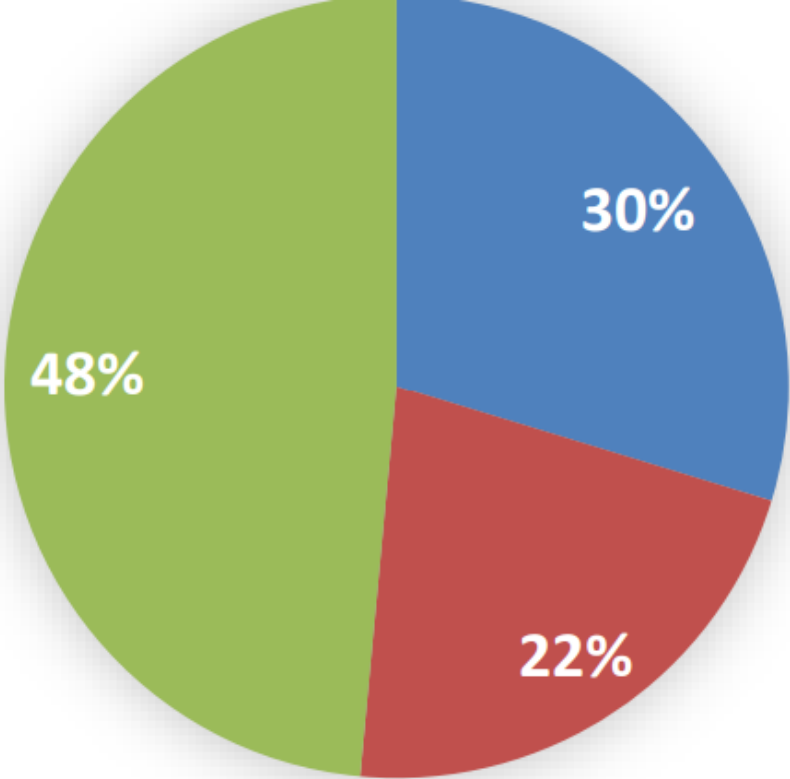


Interest Rates are Much Higher

Note: Average rates are calculated as the average of fixed and variable rates for each loan category.

Sources: Federal Reserve Board and Haver Analytics

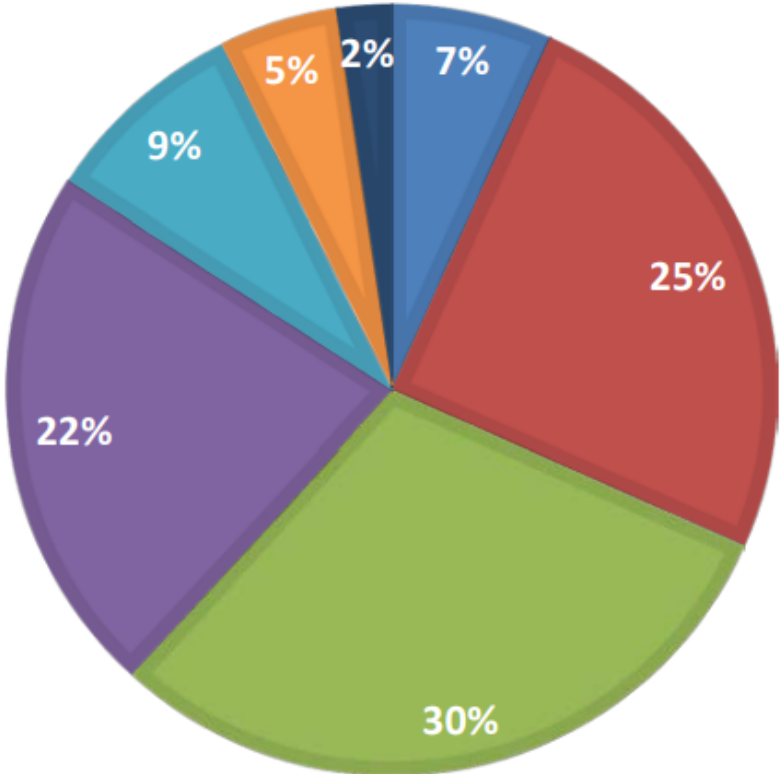
Who are the tenants? – Iowa data from 2017



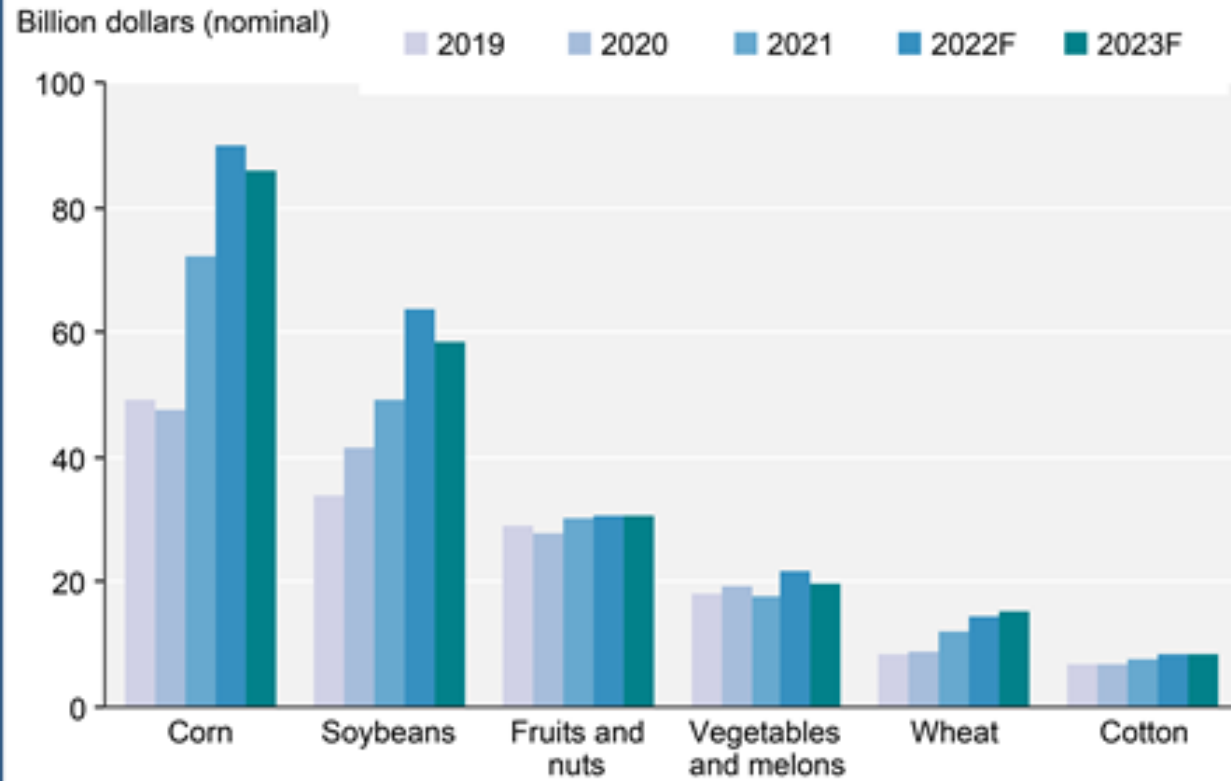
- relative
- close friend
- someone else

YEARS OF LEASING RELATIONSHIP (NOT LEASE)

- 1 Year
- 2 to 5 Years
- 6 to 10 Years
- 11 to 20 Years
- 21 to 30 Years
- 31 to 40 Years
- 41 Years or More

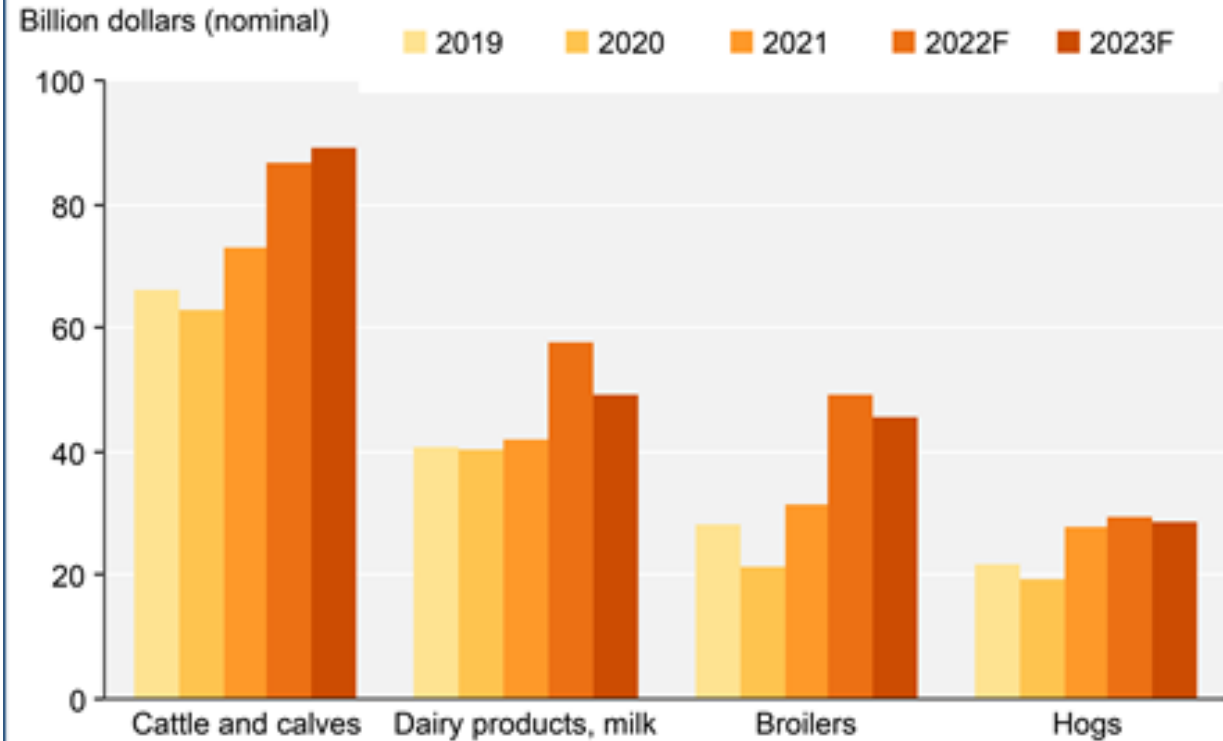


U.S. cash receipts for selected crops, 2019–23F



Note: F = forecast.
 Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
 Data as of February 7, 2023.

U.S. cash receipts for selected animals/products, 2019–23F



Note: F = forecast.
 Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
 Data as of February 7, 2023.

84% of Iowa land is owned debt-free

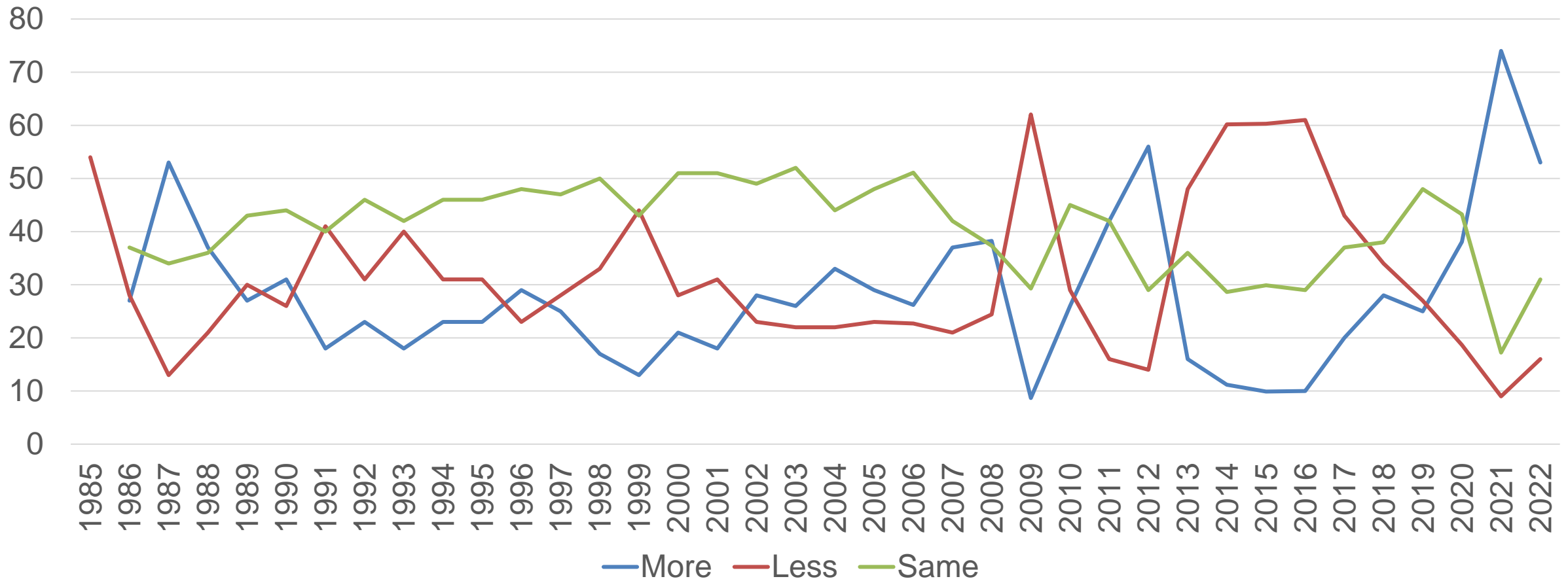
	1982	1992	2002	2007	2012	2017	2022
Free of debt	62%	70%	74%	75%	78%	82%	84%
Under contract	18%	11%	4%	4%	3%	2%	2%
Mortgaged	20%	19%	22%	21%	19%	16%	14%

2022 Iowa Farmland Ownership and Tenure Survey;
www.card.iastate.edu/farmland/ownership

>50% of Iowa farmland is owned by the same owner 20+ years

	2012	2017	2022
> 50 Years	20%	8%	10%
40-50 Years		12%	9%
30-40 Years	15%	13%	15%
20-30 Years	19%	20%	21%
10-20 Years	21%	24%	22%
< 10 Years	24%	24%	22%

Limited land supply is a key supporting factor, even when half of the respondents reporting more sales



Why Investors Buy Farmland?

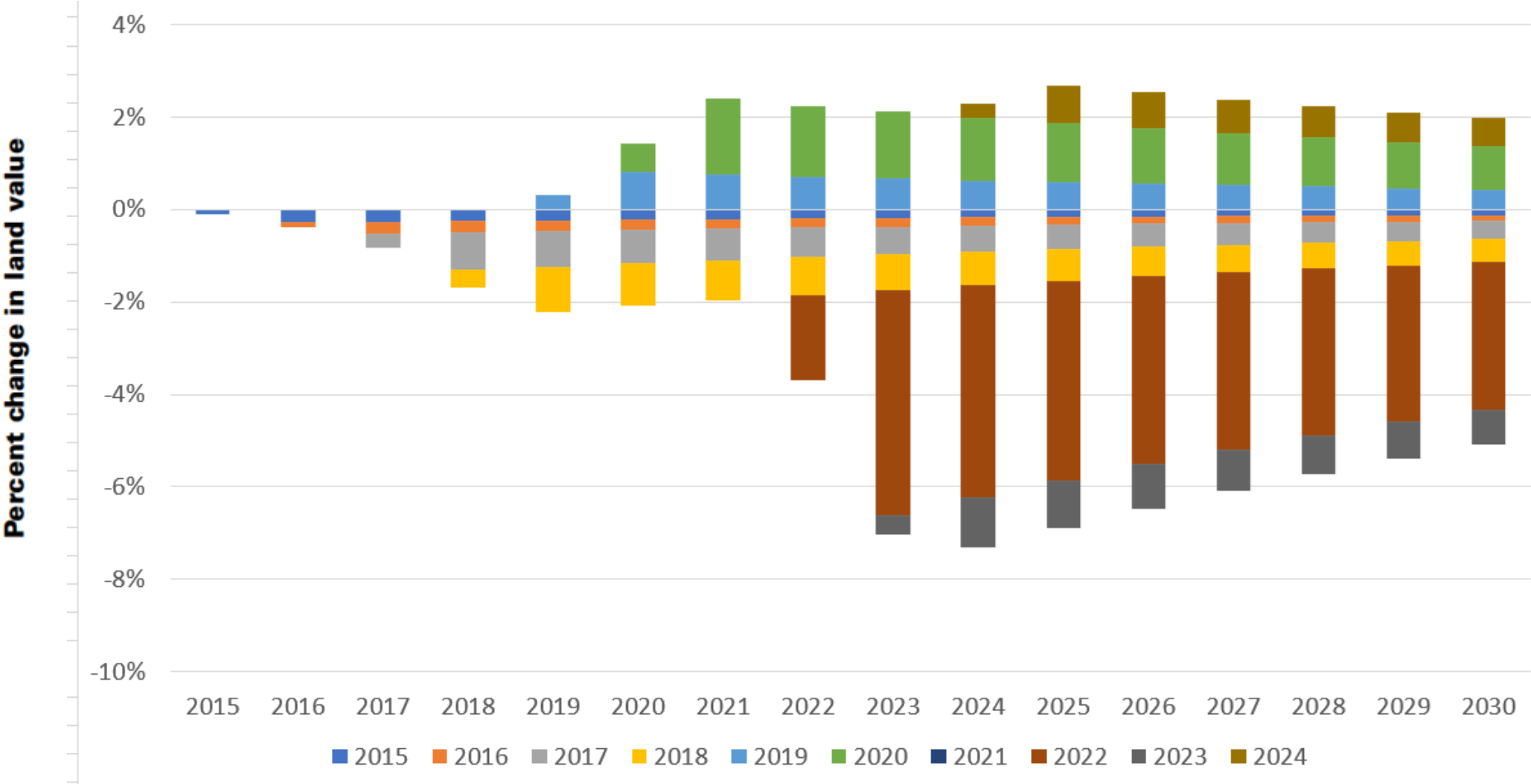
- Beta

- The risk of a well-diversified portfolio depends on the market risk of the investments included in the portfolio
- Beta (β) measures the sensitivity of an individual investment to market movements (Market: S&P 500)
- Farmland, Indiana: 0.107
- Individual Farms, Kansas: 0.064

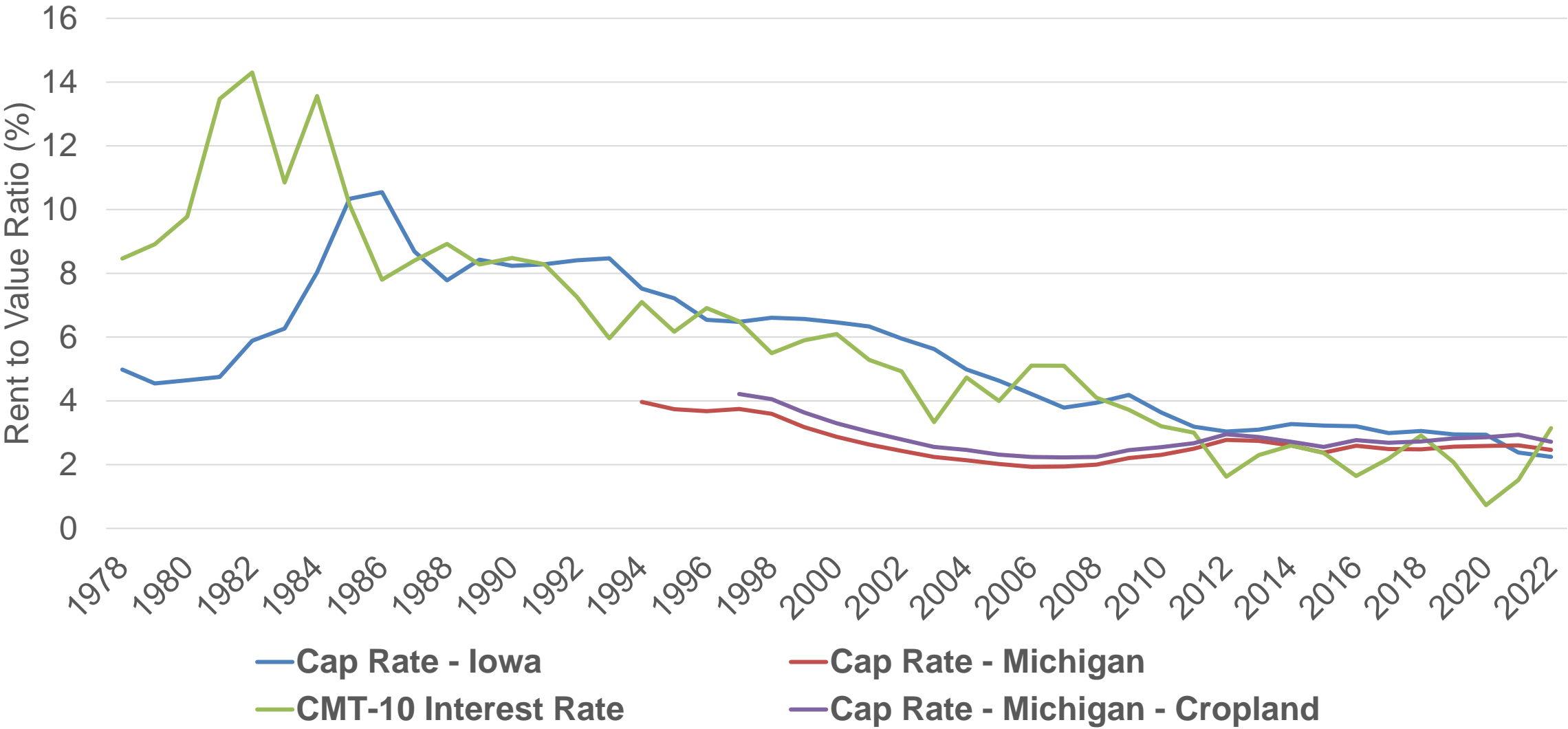
Excess Returns

- Farmland, Indiana:
 - 0.06 to 0.08
- Individual Farms, Kansas:
 - Average = 0.018
 - Top quartile = 0.057

The short- & long-term impacts of recent and projected federal interest rate changes on 1 states' farmland values

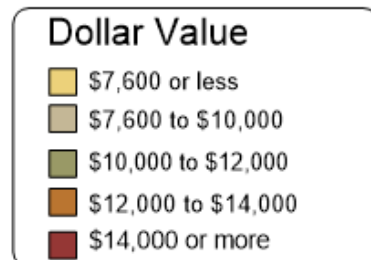
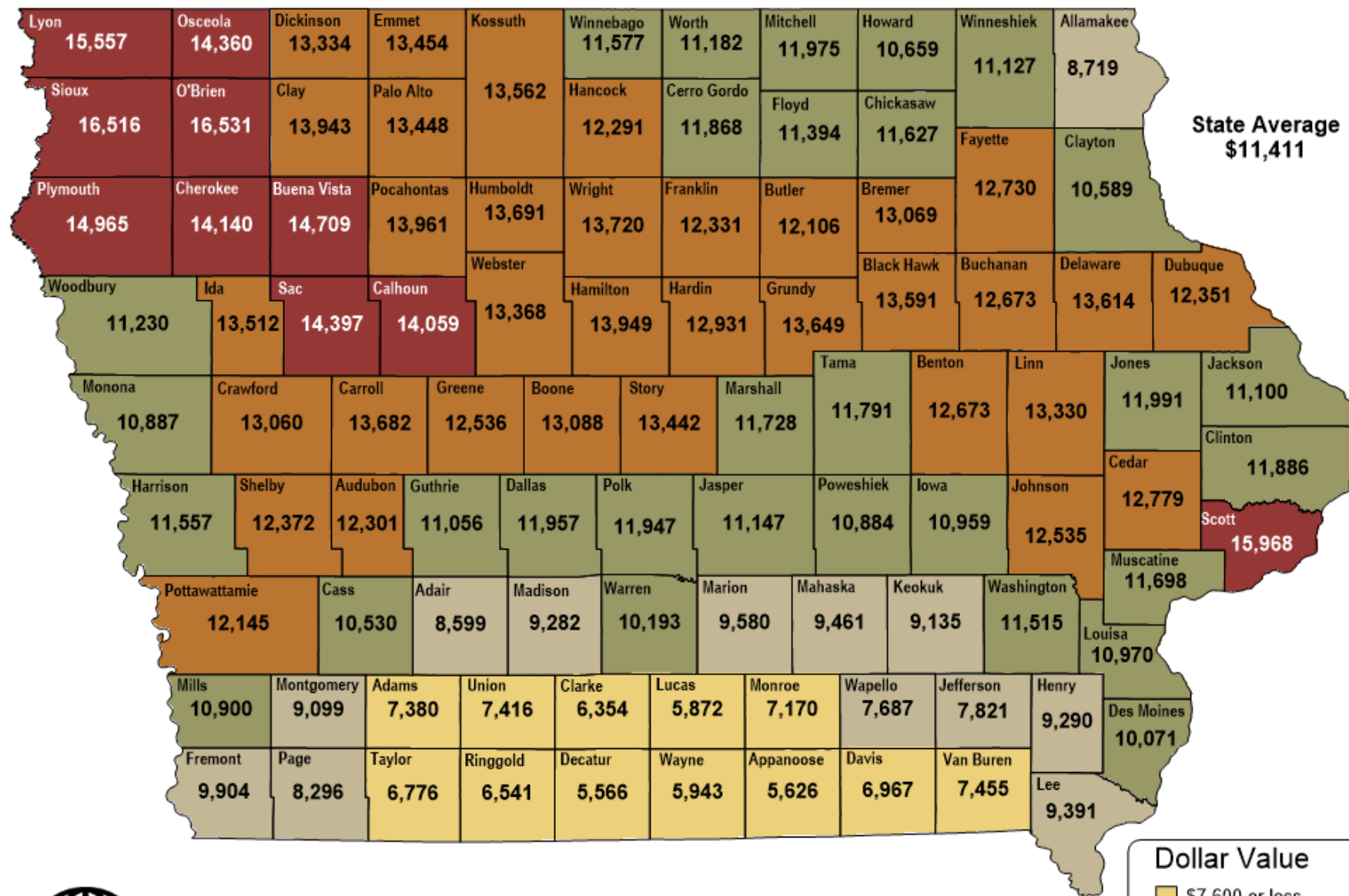


Rent to Value Ratio vs. 10-Year Interest Rate

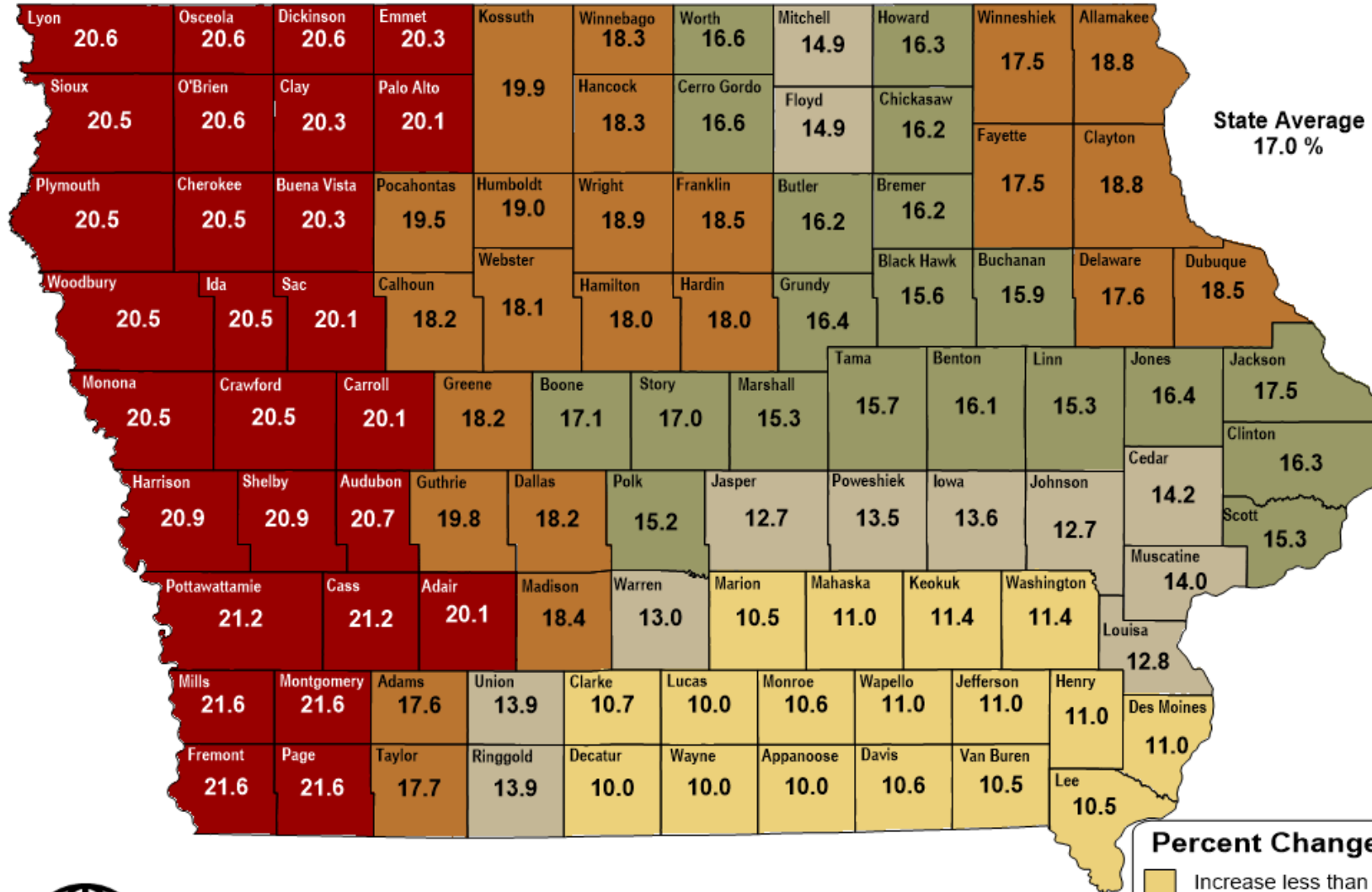


2022 Iowa Land Values

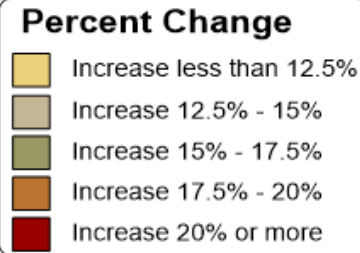
Land Values by County, 2022



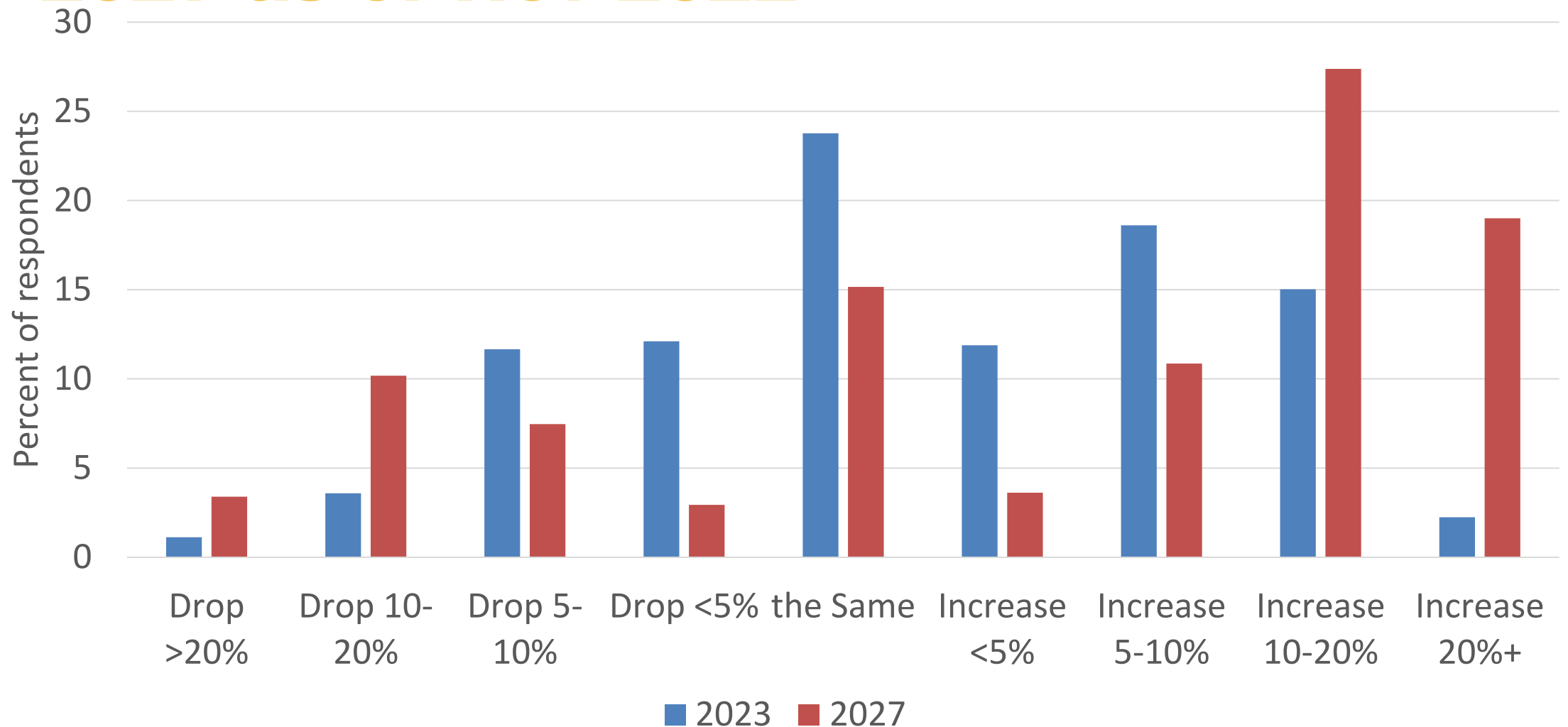
Percentage Change in Iowa Land Values 2021 to 2022



Percent Changes in Land Values from Nov 2021



Land value predictions for 2023 and 2027 as of Nov 2022



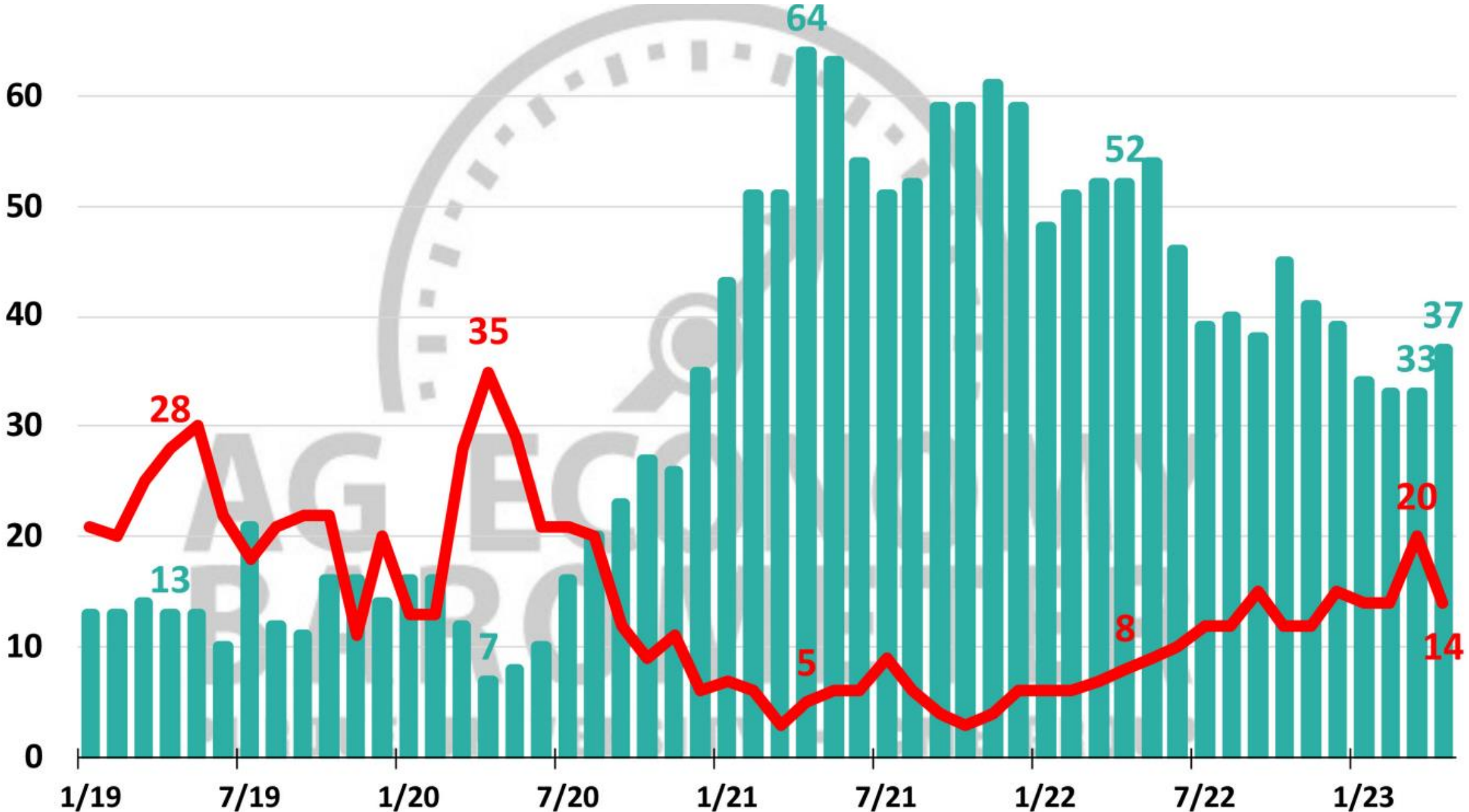
From 2022 Iowa State University Land Value Survey
www.card.iastate.edu/farmland

Iowa Ag Professionals' Expected Land Value Changes in % Relative to May 2023 at SMLV

	Iowa	NW	NE	SW	SE
Nov. 2023	-2.25%	-3.19	-1.89	-2.55	1.39%
Nov. 2024	-7.09%	-9.99	-4.78	-10.61	5.60%
Nov. 2025	-5.70%	-6.62	-3.89	-13.28	8.00%
Nov. 2030	+17.02%	19.03	16.35	8.54	24.42
Nov. 2040	+44.50%	46.20	43.03	33.48	59.91

Farmland Price Expectations, 12 Months Ahead

Higher Farmland Prices Lower Farmland Prices



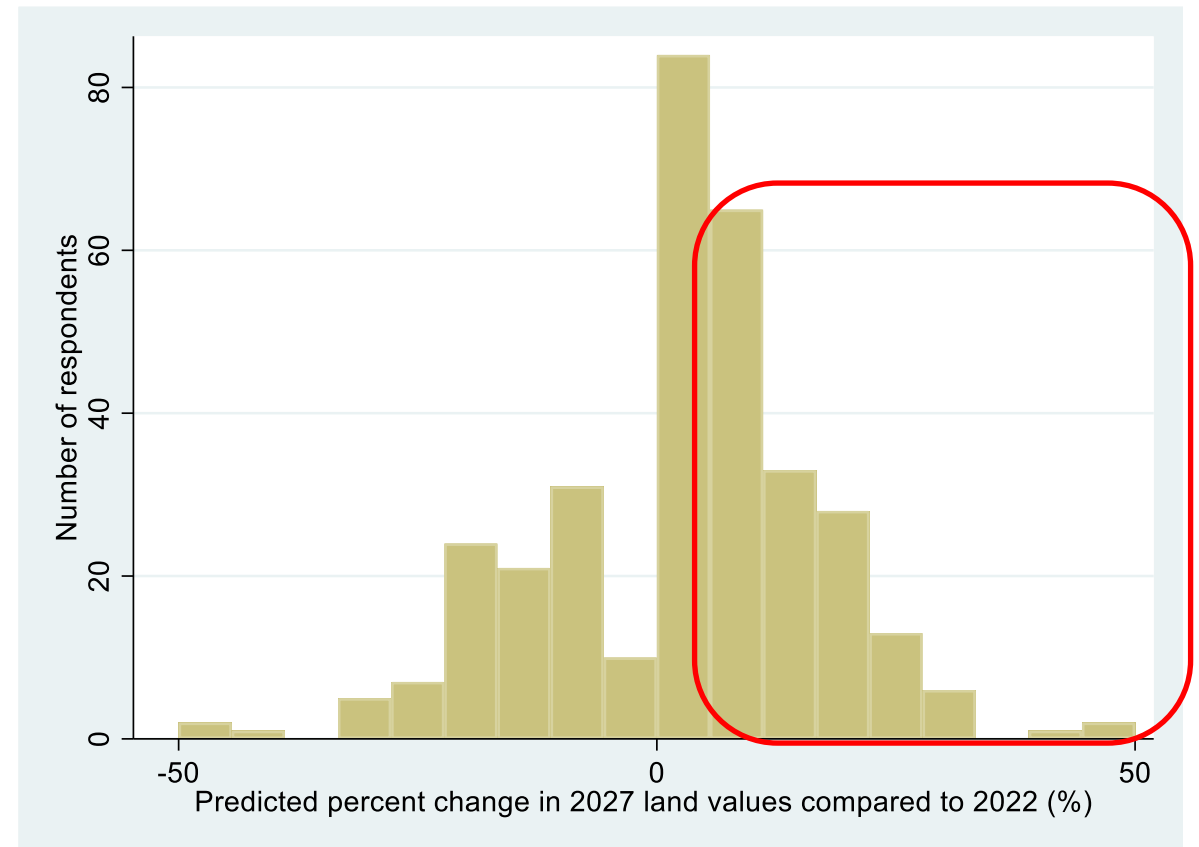
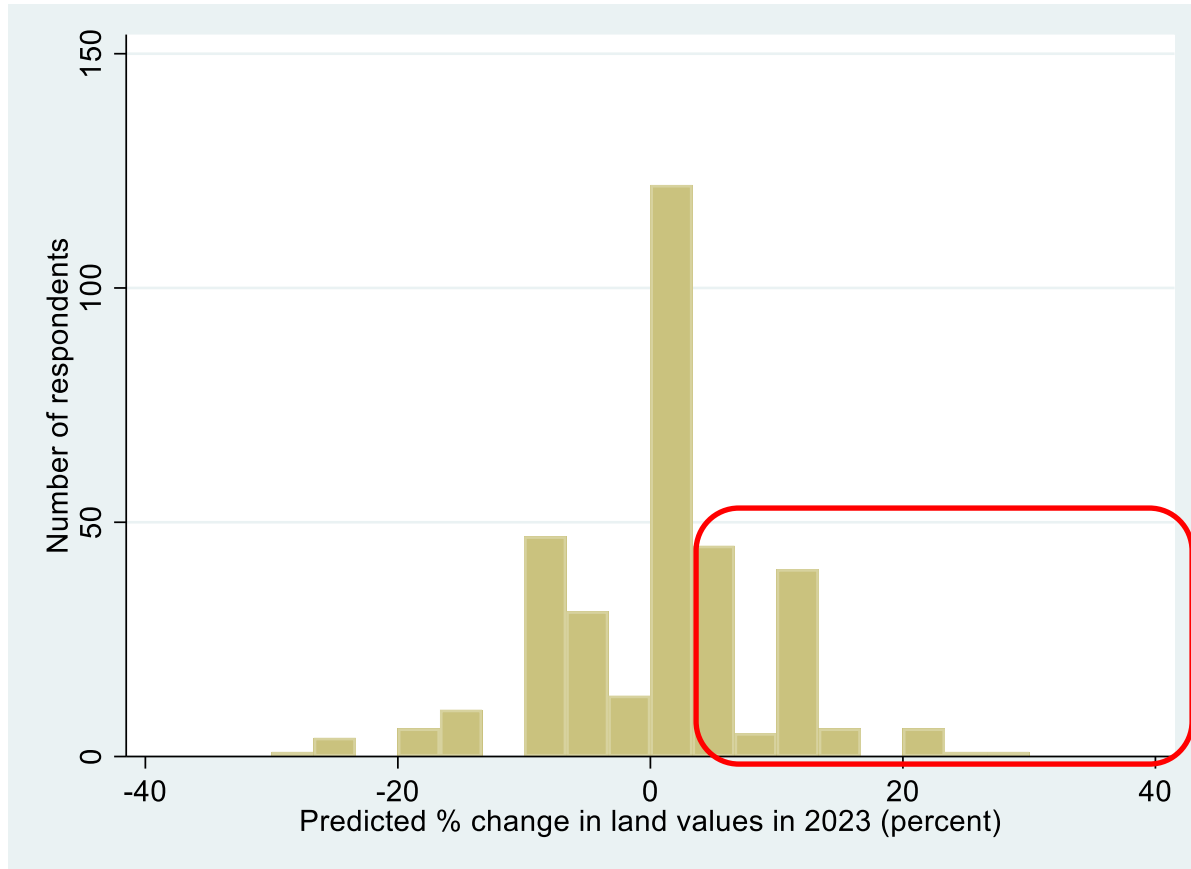
Perceptions of current land values

	Way Too Low	Too Low	Just Right	Too High	Way Too High
	Percent of respondents				
Northwest	3	3	22	59	13
North Central	3	2	21	65	9
Northeast	0	1	16	57	26
West Central	7	0	19	62	12
Central	7	2	41	43	7
East Central	0	2	17	70	11
Southwest	0	0	26	62	12
South Central	0	2	20	70	8
Southeast	2	11	38	42	7
STATE	3%	2%	24%	59%	12%

From 2022 Iowa State University Land Value Survey
www.card.iastate.edu/farmland

Farmland bubble?

What the respondents who think land values are too high predict future land values?

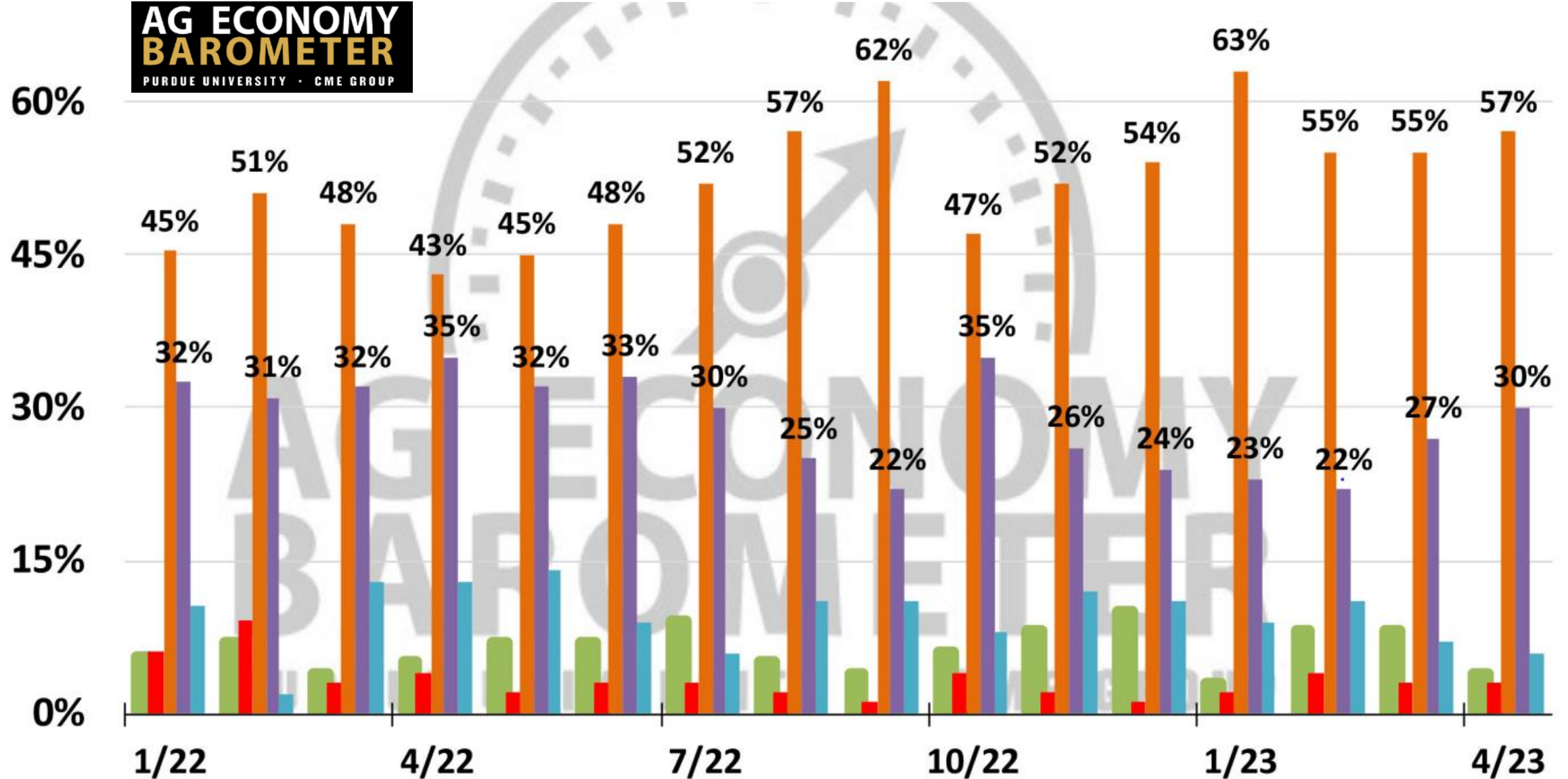


From 2022 Iowa State University Land Value Survey
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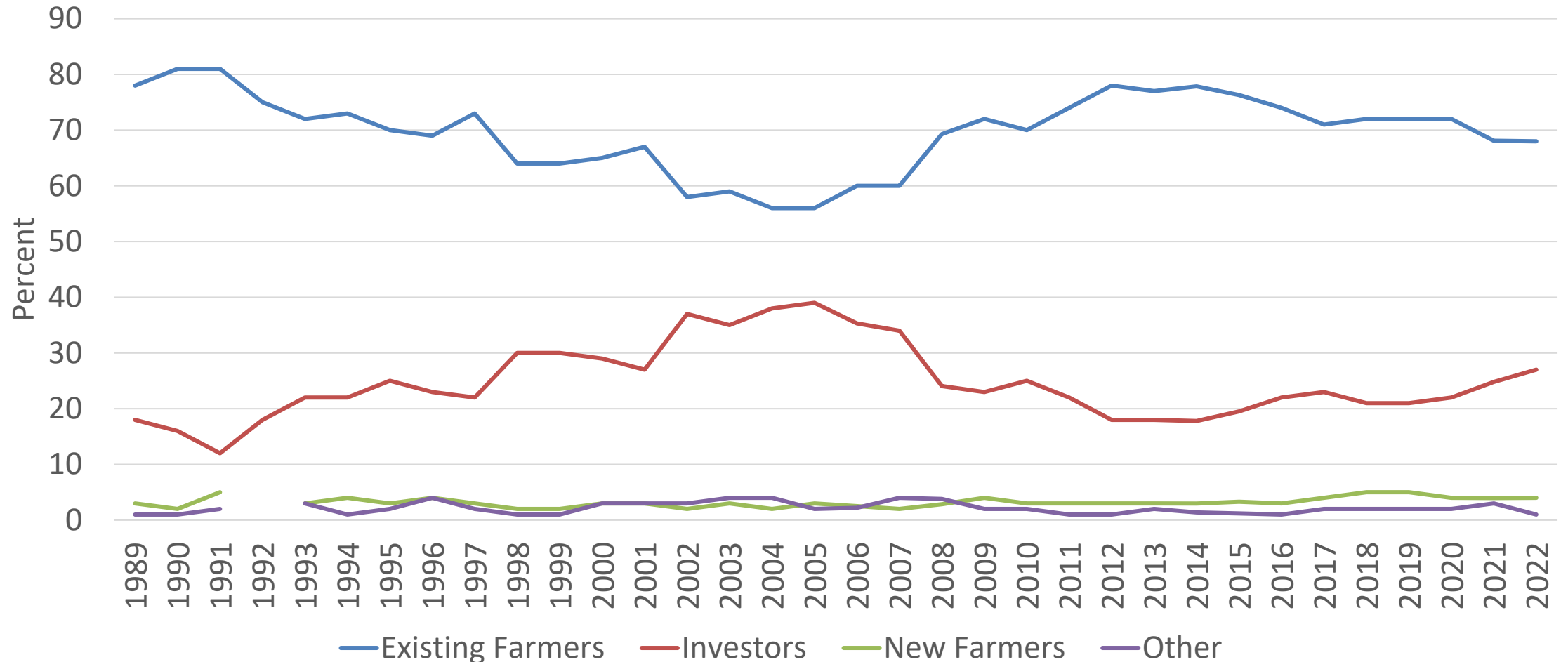
What is the main reason you expect farmland values to rise?

Strong farm cash flows Low interest rates Non-farm investor demand Inflation Other

**AG ECONOMY
BAROMETER**
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Iowa Farmland Purchases by Buyer Types 1989–2022



Distribution of Iowa Farmland by Control, 2017 and 2022

	2017	2022
Owner Controlled:	47%	42%
Owner operated	37%	32%
Custom farmed	2%	3%
Government programs and other uses	8%	8%
Leased:	53%	58%
Cash rent (fixed)	35%	42%
Cash rent (flexible)	9%	9%
Crop share	9%	7%
Other types of leases	<1%	<1%
Total:	100%	100%

Land ownership patterns 1982-2022

	1982	1992	2002	2007	2012	2017	2022
Sole owner	41%	38%	28%	29%	25%	22%	23%
Joint tenancy	39%	38%	37%	35%	32%	28%	29%
Tenancy in common	7%	7%	12%	10%	8%	8%	5%
Partnership	<1%	2%	2%	3%	3%	3%	2%
Estates	4%	3%	4%	3%	3%	4%	2%
Trusts	1%	5%	8%	10%	17%	20%	23%
Corporations	8%	8%	7%	9%	7%	10%	6%
LLC	N/A	N/A	1%	1%	5%	5%	9%
Government/institution	N/A	N/A	1%	1%	<1%	N/A	<1%

Iowa Farmland Owners are getting older & more living outside Iowa

	Owners	Acres
Early stage		
< 25	<1%	<1%
25 - 34	2%	1%
Mid-stage		
35 - 44	3%	3%
45 - 54	8%	9%
55 - 64	21%	20%
Late stage		
65 - 74	31%	29%
> 74	34%	37%

	Owners	Acres
Full-time Iowa resident	80%	75%
Part-time Iowa resident	6%	5%
Not an Iowa resident	14%	20%

Conservation practice adoption in 2022

	2017		2022	
	Owners	Acres	Owners	Acres
No till	21%	27%	29%	30%
Cover crops	5%	4%	7%	7%
Buffer strips	3%	3%	3%	2%
Saturated buffers	NA	NA	<1%	<1%
Bioreactor	NA	NA	<1%	<1%
Nutrient removal wetland	NA	NA	<1%	<1%
Reduced tillage	NA	NA	36%	40%
Grassed waterway	NA	NA	62%	NA

Iowa landowners are not eager to sell their land, especially to non-family members

	1982	1992	2002	2007	2012	2017	2022
Will to family	48%	49%	39%	43%	63%	40%	35%
Will to others	<1%	1%	2%	1%	1%	2%	1%
Give to family	5%	4%	12%	10%	9%	14%	12%
Give to others	<1%	<1%	1%	1%	1%	1%	1%
Sell to family	12%	7%	12%	10%	8%	11%	8%
Sell to others	13%	10%	9%	8%	7%	7%	4%
Put in trust	6%	14%	13%	18%	10%	26%	26%
Put in business entity	NA	NA	NA	NA	NA	NA	12%
Other	16%	16%	12%	10%	1%	0%	1%

Thank you!

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