

FARM FINANCIAL OUTLOOK: LAND VALUES & CASH RENTS

Where have they been? And where will they go?

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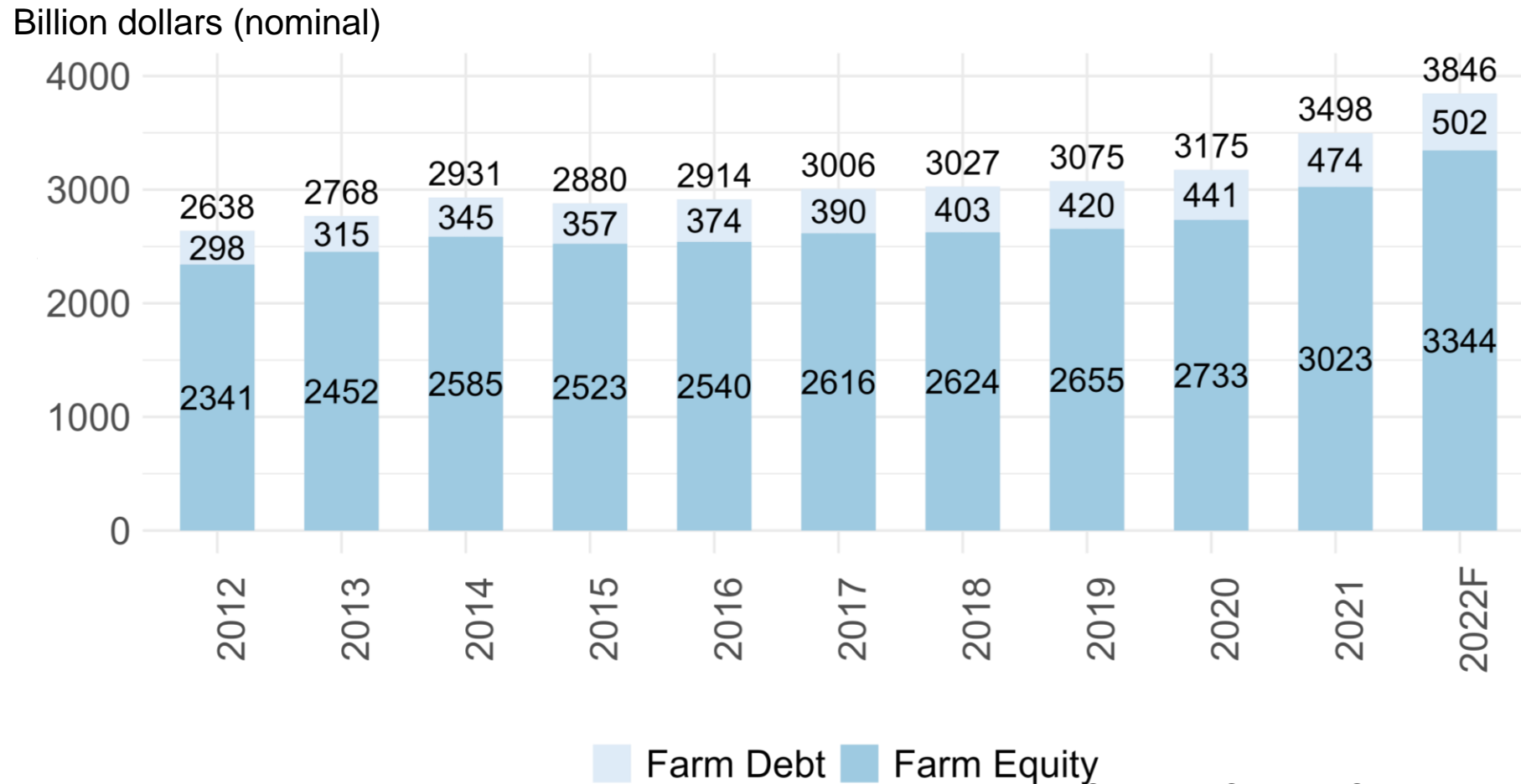


Outline

- Farm balance sheets stronger in 2022; a major contribution was increase in farm asset (majorly land) values.
- Interest rates and inflation (impacting farm income through commodity and input prices) have been most important factors for farmland market.
- Concerns for overpriced farmland exist, but land values are still expected to increase.



Stronger Balance Sheets in 2022



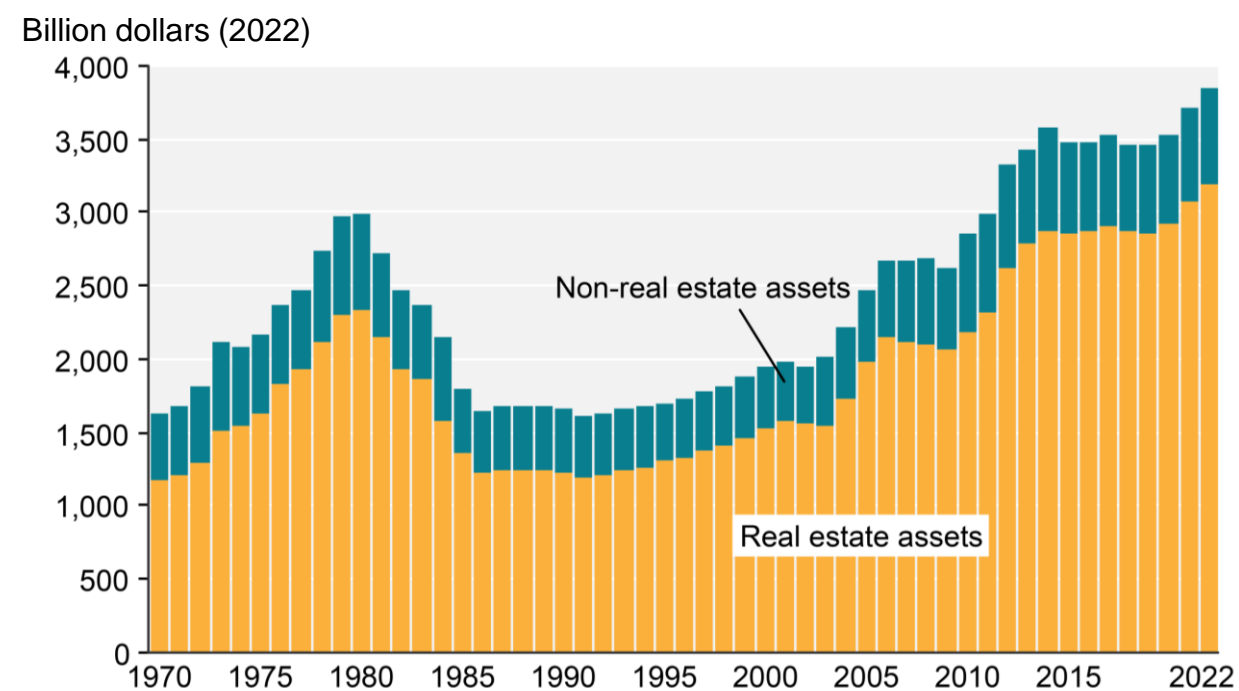
Source: USDA, ERS, Data as of December 1, 2022



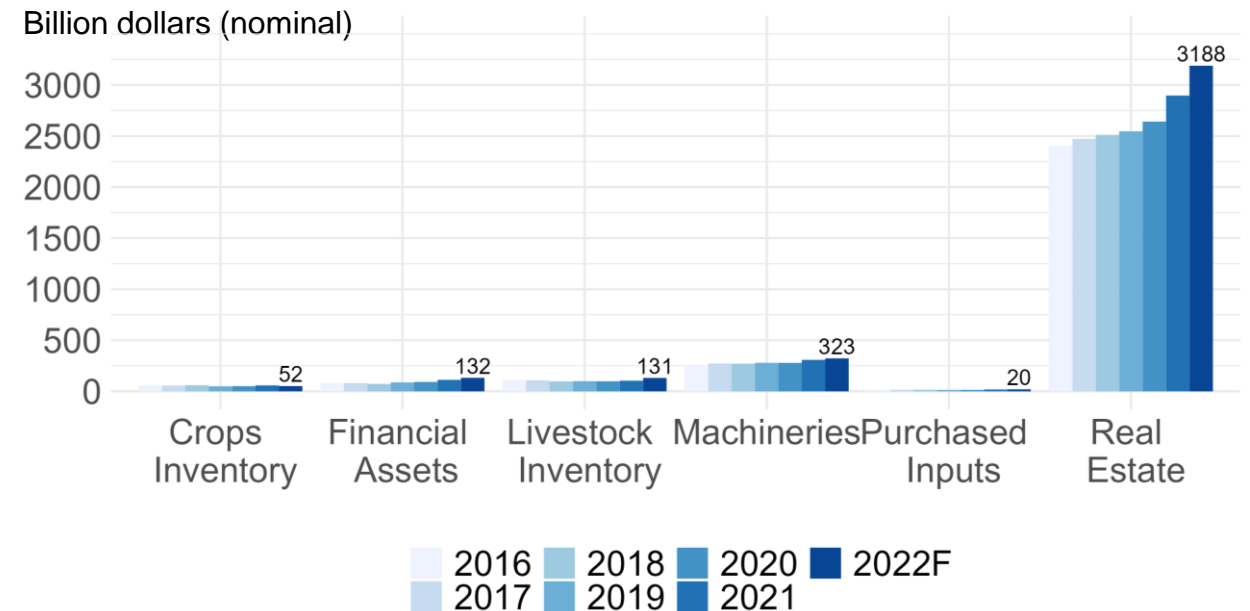
U.S. Farm Sector Assets

(inflation adjusted)

(by type)



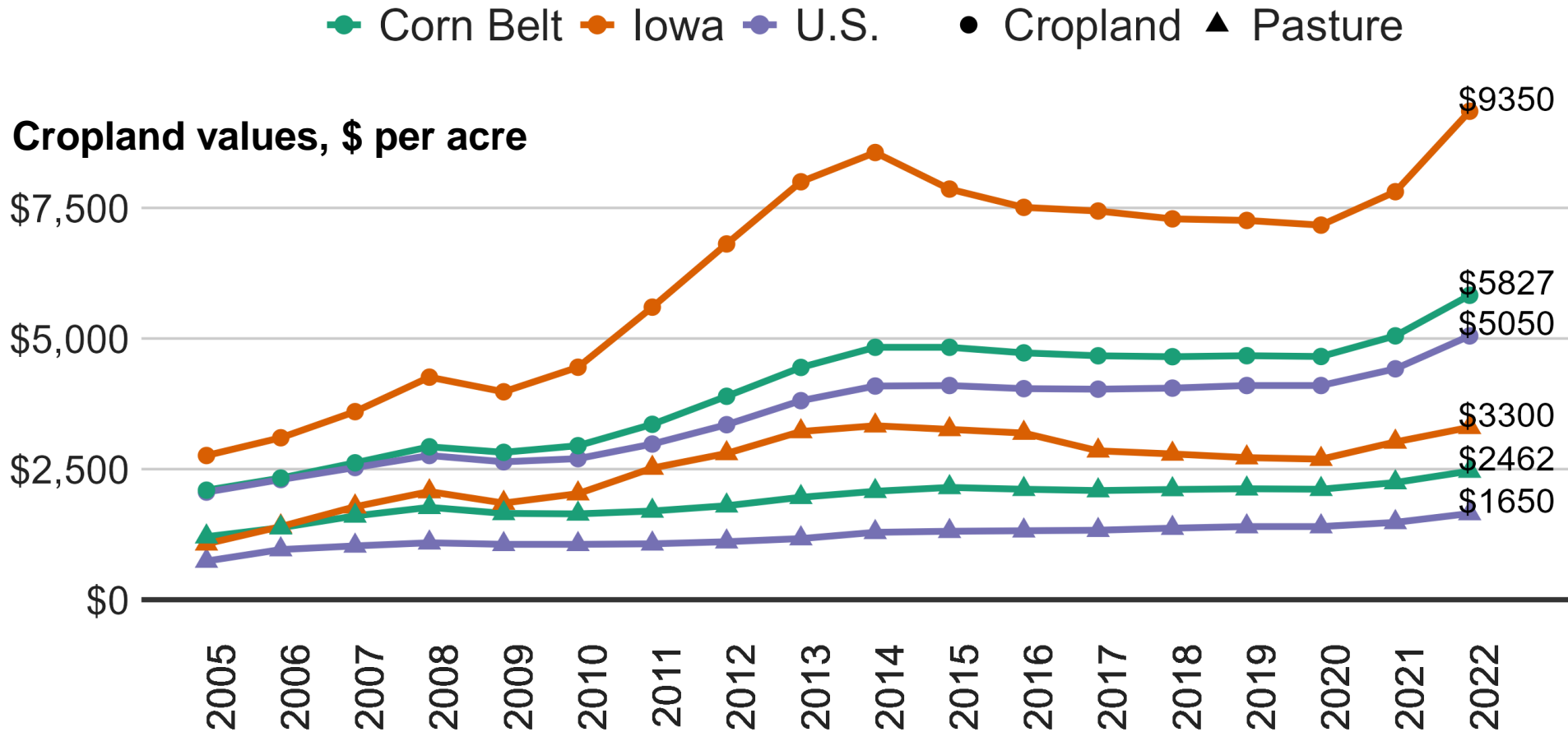
Source: USDA, ERS, Data as of December 1, 2022



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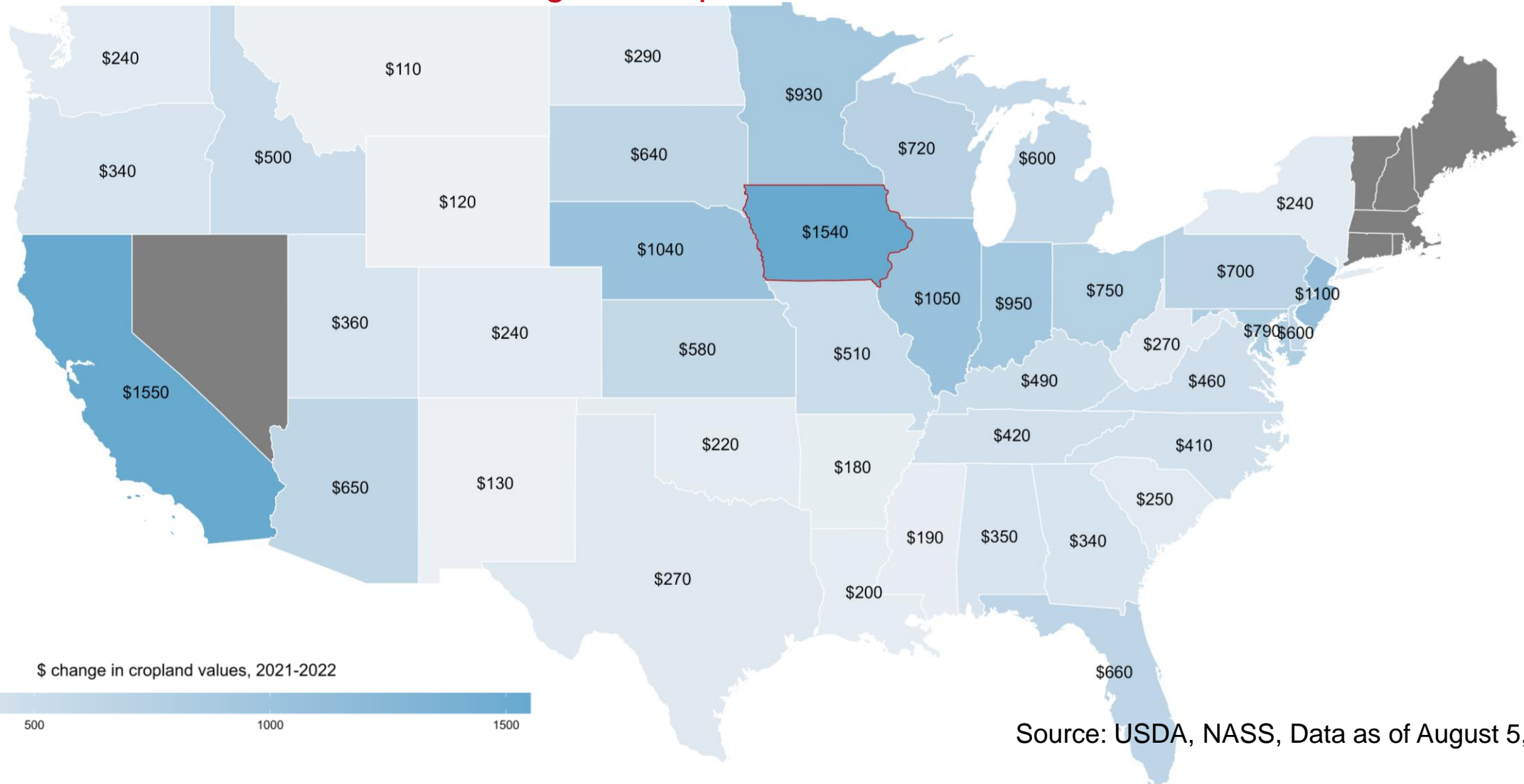
Land Values on the Rise Through 2022



Source: USDA, NASS, Data as of August 5, 2022



\$ Change in Cropland Values 2021-2022

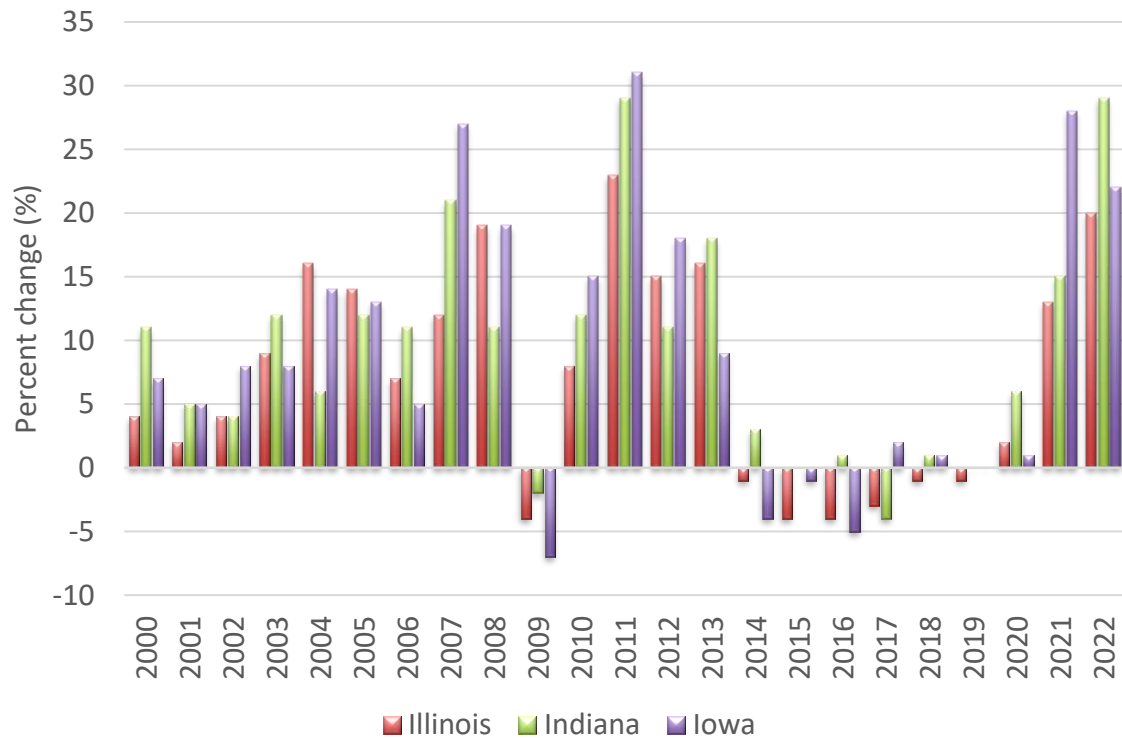


Source: USDA, NASS, Data as of August 5, 2022

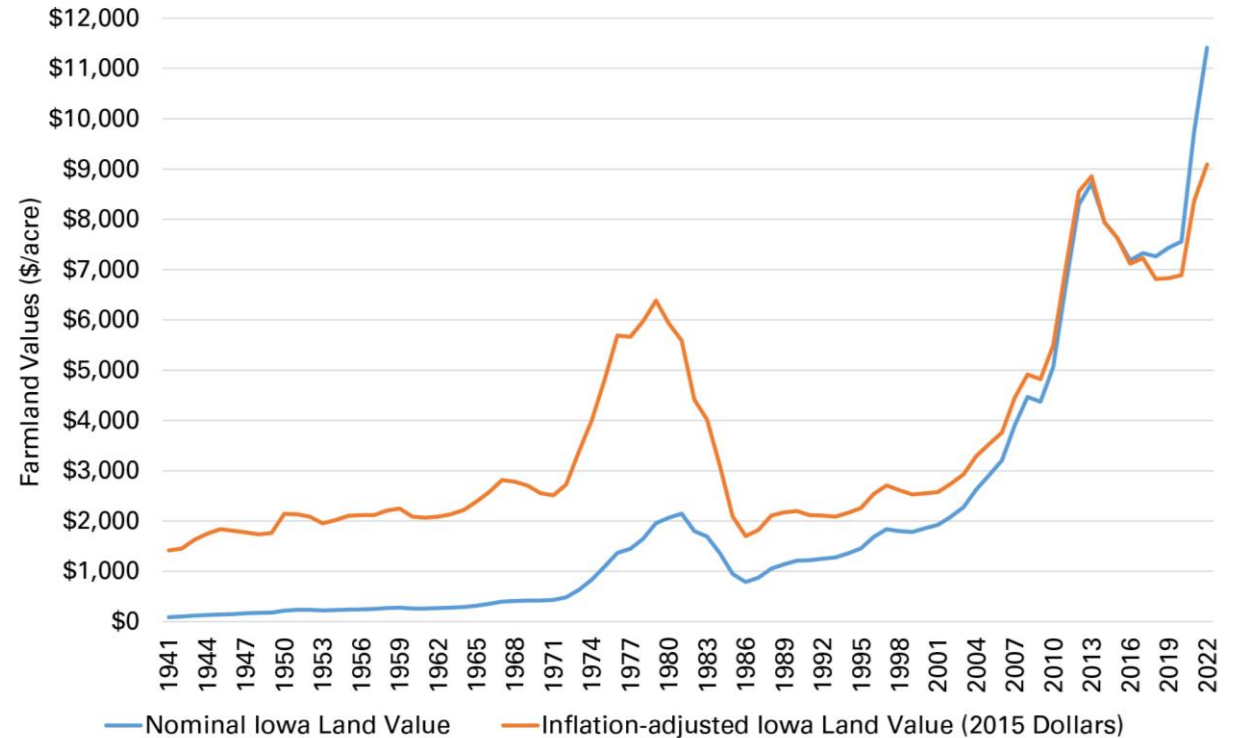


Farmland Values Trends: Other Sources

Year-over-Year changes in Farmland Values | Nominal & Inflation-adjusted Iowa Farmland Values



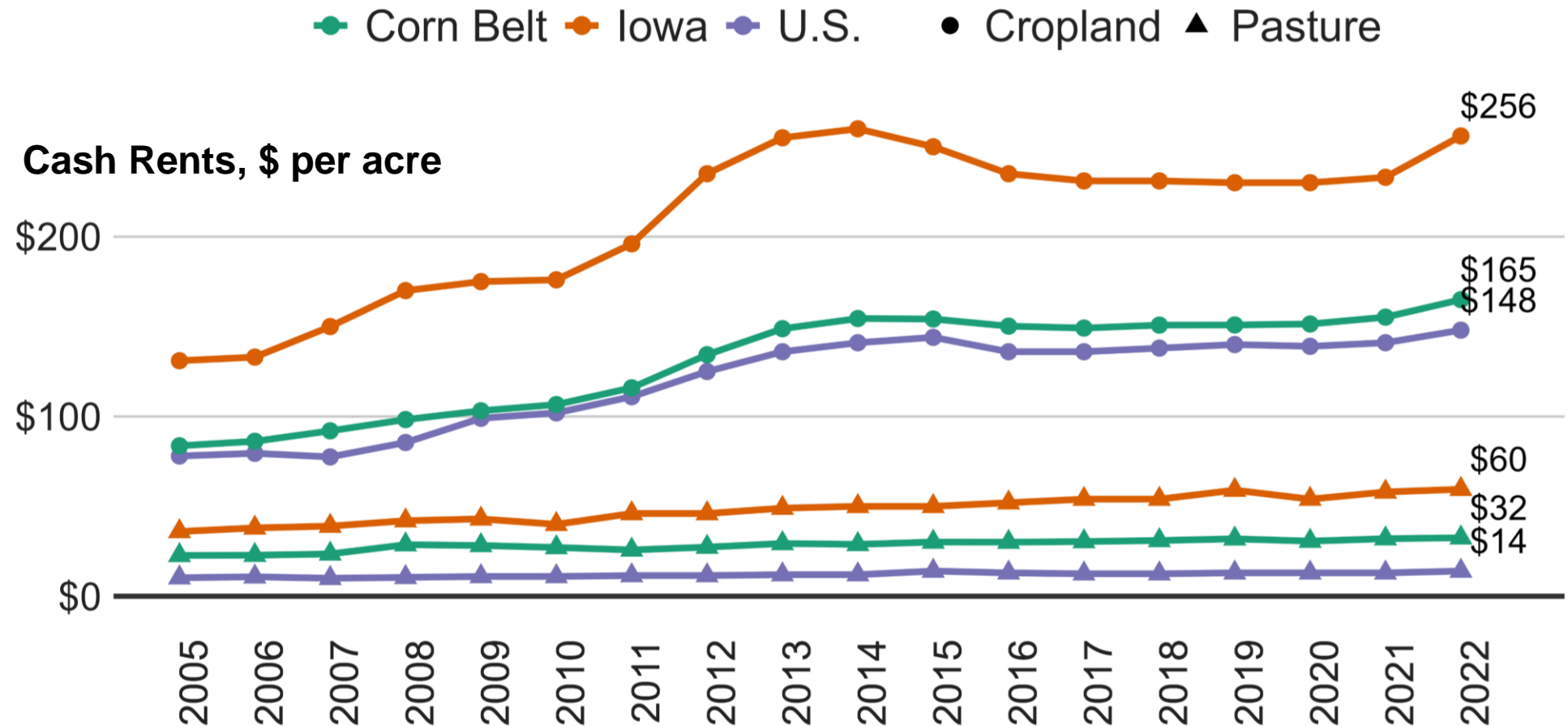
Source: Federal Reserve Bank of Chicago, 2022



Source: Iowa Land Values Survey, 2022



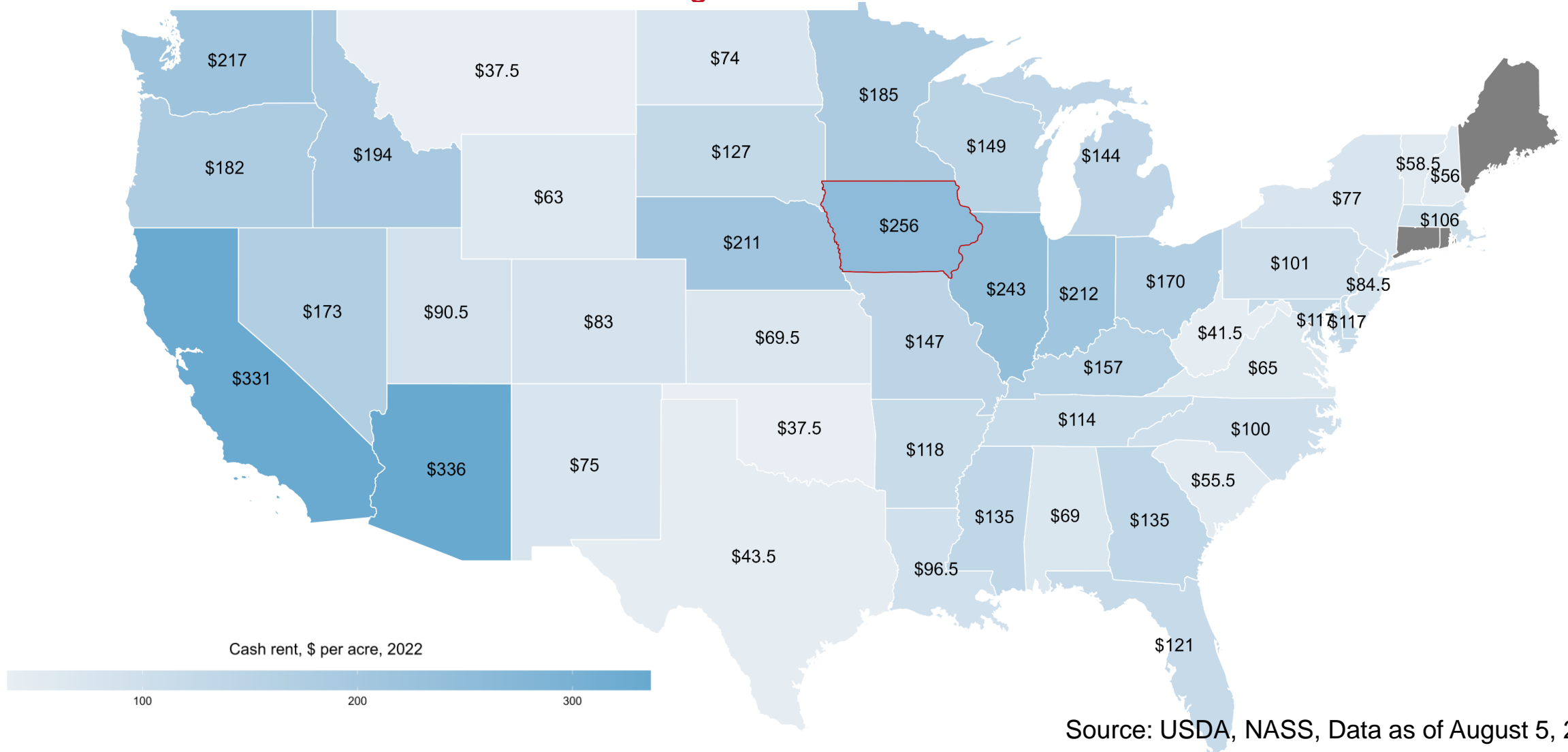
Cash Rents Rising with Land Values



Source: USDA, NASS, Data as of August 5, 2022



\$ Change in Cash Rents 2021-22



Source: USDA, NASS, Data as of August 5, 2022



What Influences Land Values?

Land Values

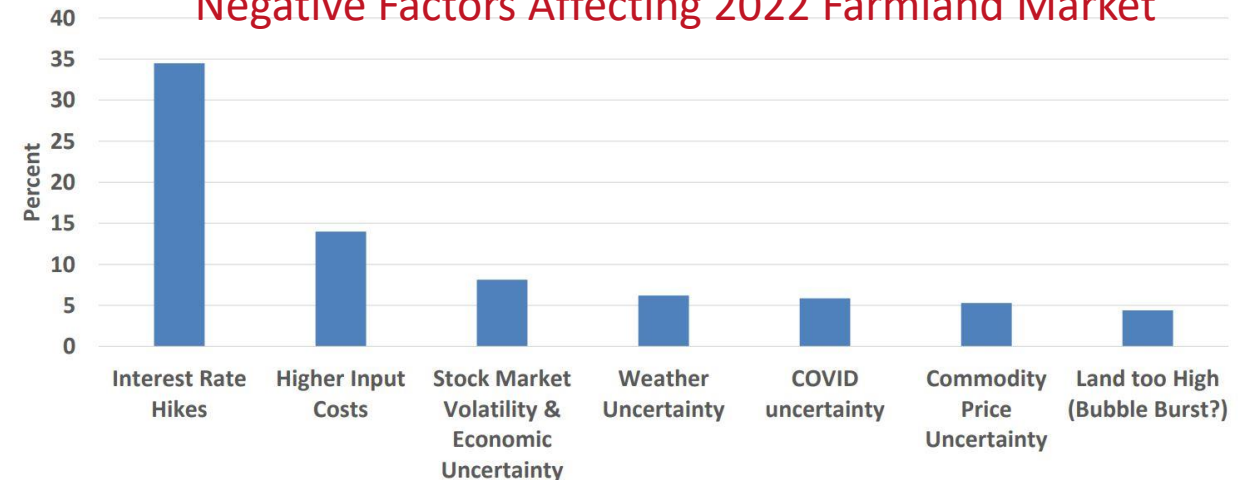
$$= \frac{\text{Localized Net Income}}{\text{Universal Interest Rate}}$$

- Inflation (commodity prices)
- Interest rate
- Land supply

Positive Factors Affecting 2022 Farmland Market



Negative Factors Affecting 2022 Farmland Market





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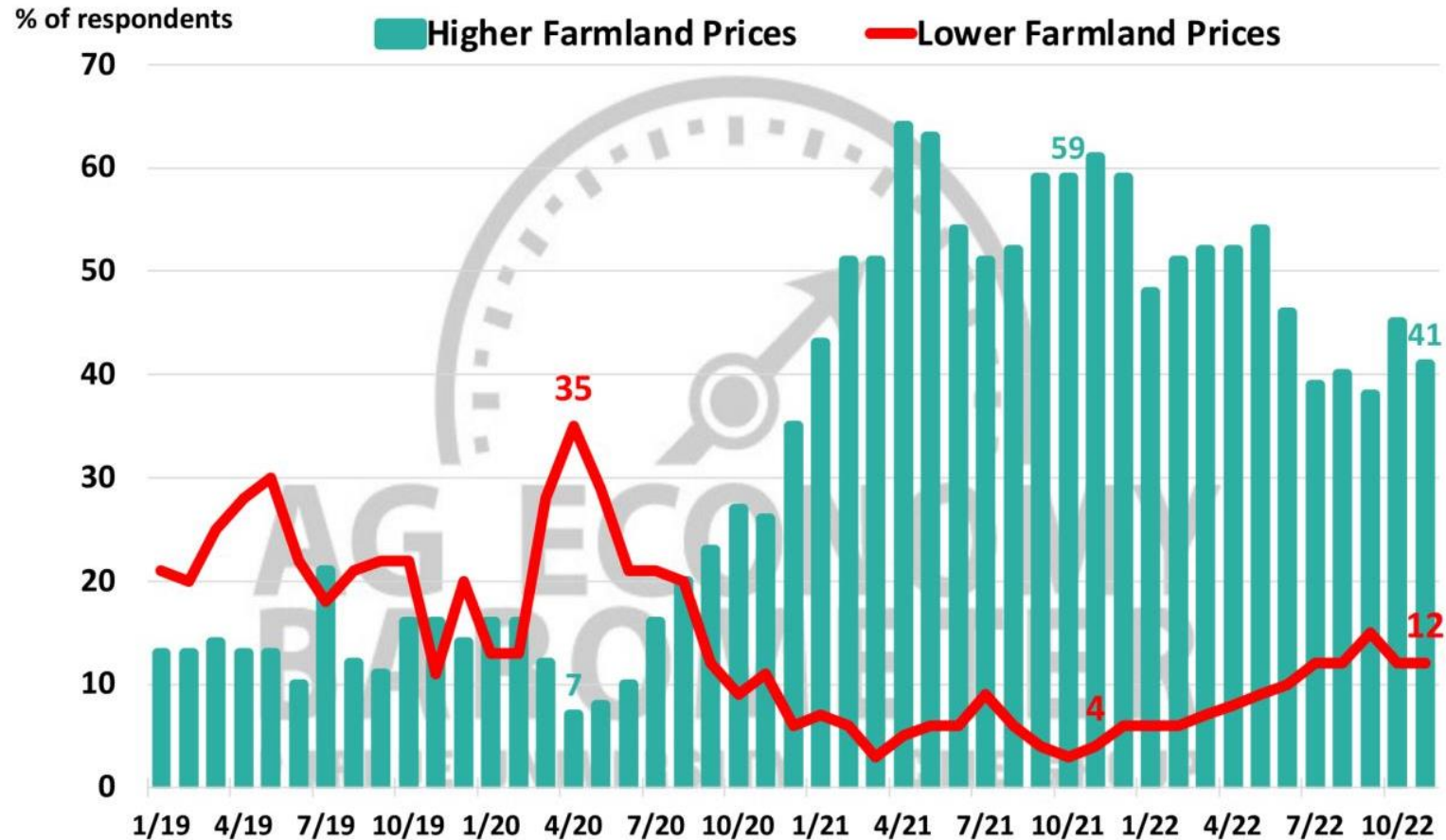
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**WILL LAND VALUES CONTINUE TO
RISE?**

IT DEPENDS ON ITS DETERMINANTS



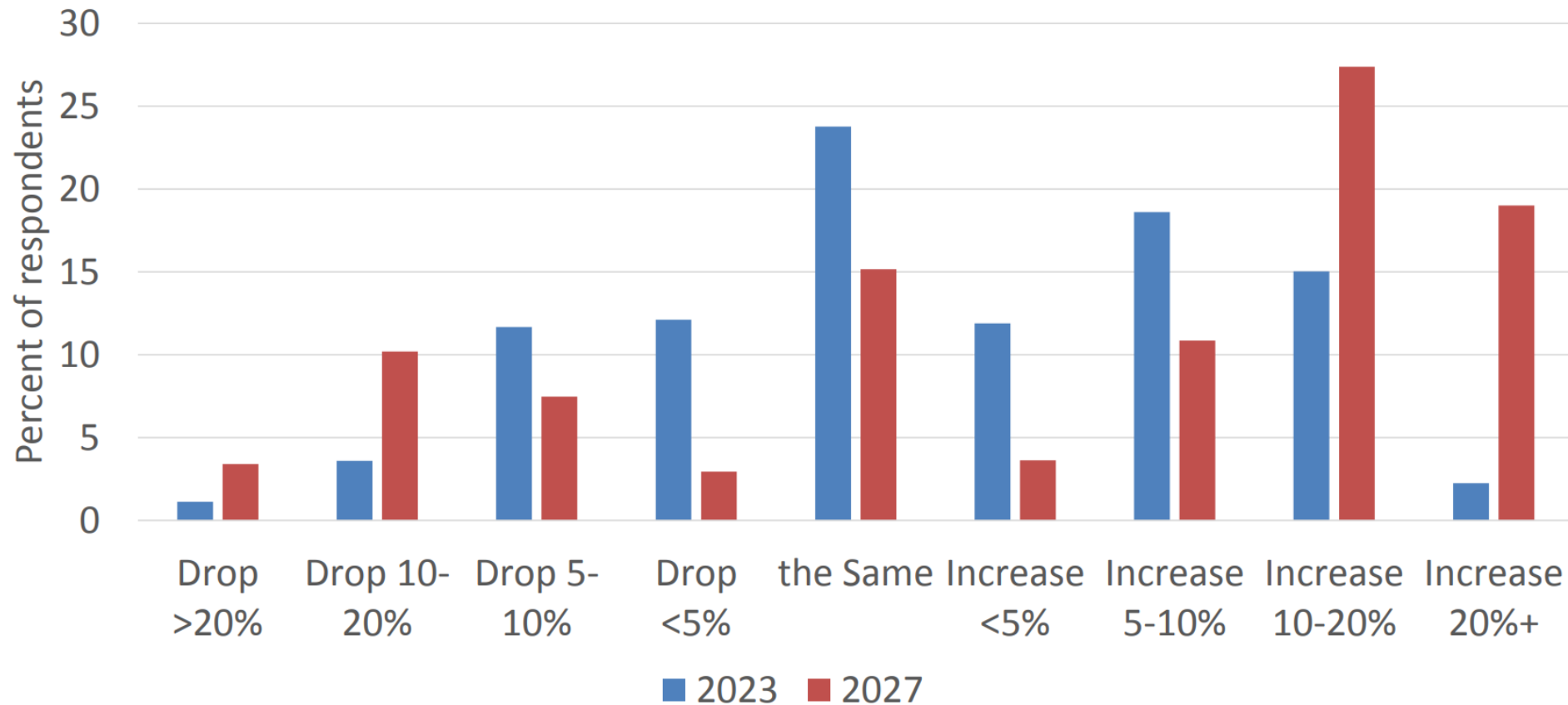
Farmland Price Expectations, 12 Months Ahead



Source: Purdue Center for Commercial Agriculture,
Producer Survey, 2022



Farmland Price Expectations, 2023 and 2027



Source: Iowa Land Values Survey, 2022

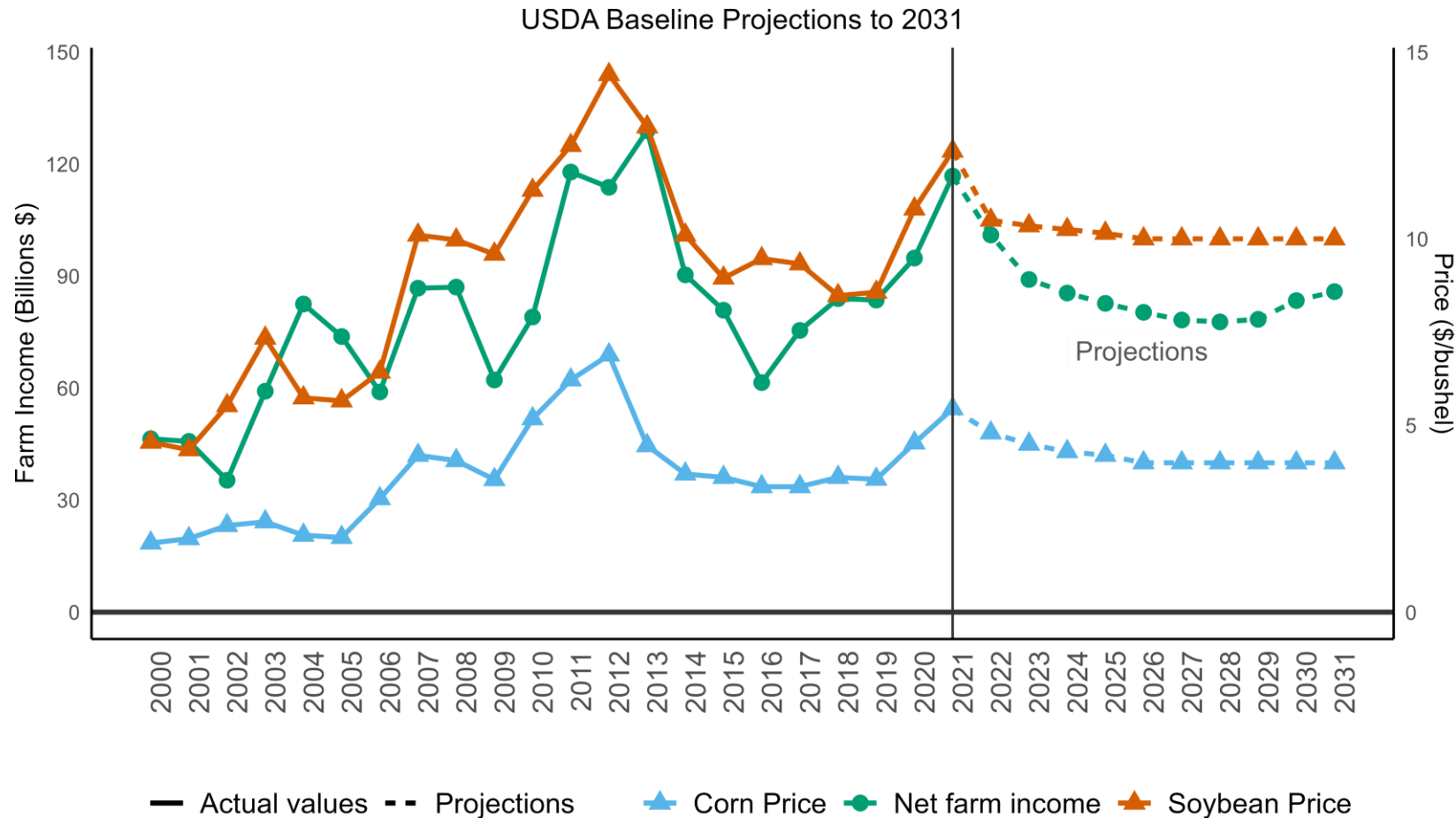


CONTRIBUTOR # 1

FARM INCOME



Net Farm Income Expectations, 10 Years Ahead



Source: USDA long-term projections,
Data as of February 16, 2022



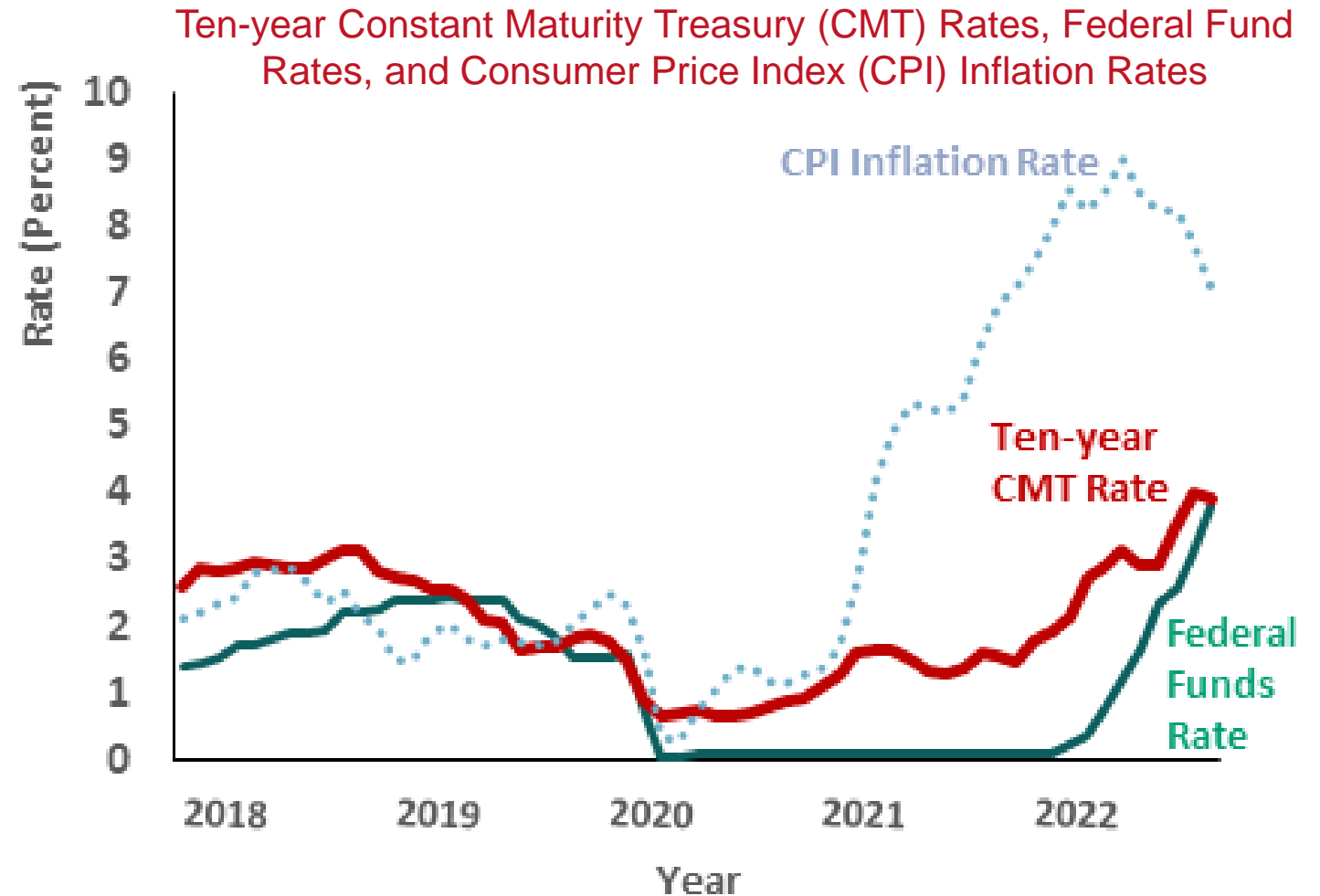
CONTRIBUTOR # 2

INTEREST RATES



Trends in Interest Rates

- 9% inflation in June 2022 to 7.1% in Nov 2022
- Federal Funds rate of 4.33% with prospects of increase
- Unless quantitative easing continues with a more accommodative monetary policy

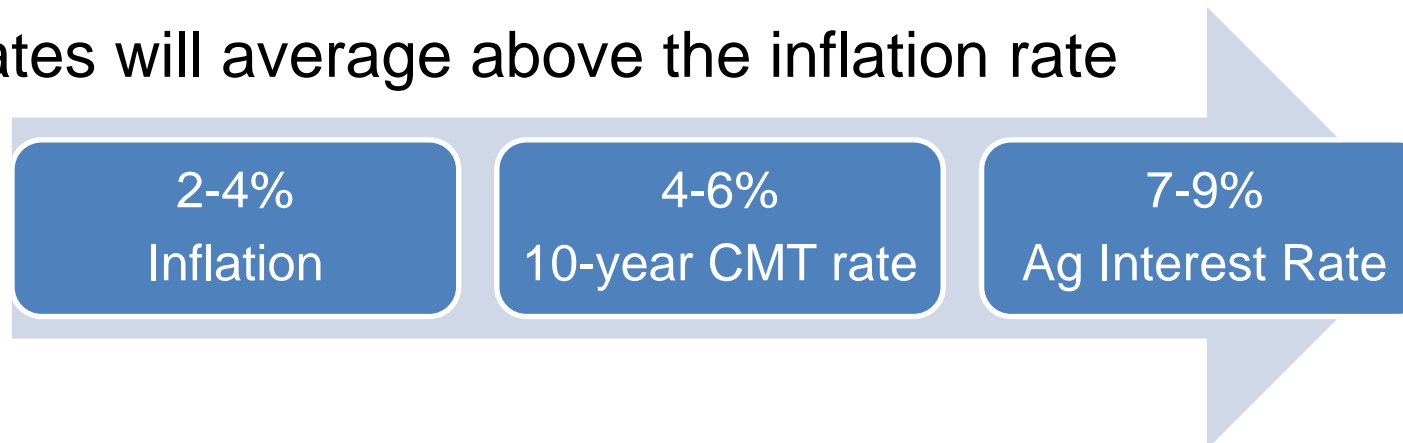


Source: St. Louis Federal Reserve Bank,
Federal Reserve Economic Data, 2022



Why would Interest Rates be higher?

- 2 - 4% Inflation or higher
- Quantitative easing is exception rather than the rule
 - Federal Open Markets Committee (FOMC) expectations suggest an increase
 - Federal Funds rate at or above 5.0% for 2023
 - Moving back towards 3% by 2025
- Interest rates will average above the inflation rate





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IMPLICATIONS OF HIGH INTEREST RATES FOR THE FARM SECTOR



Implications of High Interest Rates for Farm Sector

Downward pressure on
assets, including land
values

Land Values

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

Higher costs of debt

\$20 per acre

(\$800 x 1/2 year x 5% interest rate).

to

\$32 per acre

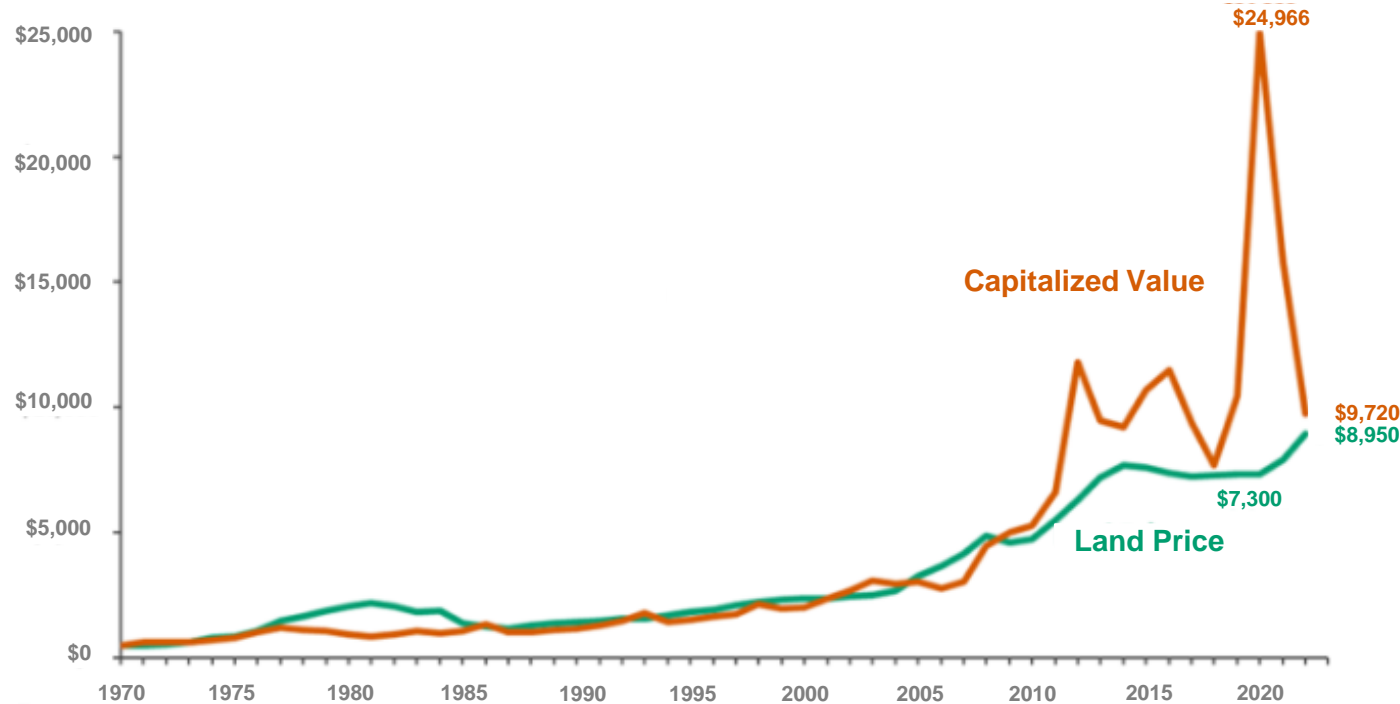
(\$800 x 1/2 year x 8% interest rate).

Higher breakeven return
level for investments
(purchasing an asset)



Are we in an Asset Bubble?

Farmland Prices and Capitalized Values in Illinois



Source: Farmdoc Daily Report, January 03, 2023

Asset bubble \Rightarrow price of land exceeds its income potential

Capitalized Value

$$= \frac{\text{Cash Rent}}{\text{10 year CMT Rate}}$$

Land values are in line with fundamentals



Main Mechanisms



Rising interest rates directly put downward pressure on land values



Rising interest rates also decrease farm income, further downward pressure



Commodity prices may remain high in 2023, upward pressure on land values



Limited supply and strong demand for land, upward pressure

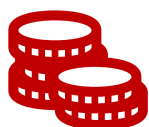


Key Takeaways



Land Values are on the rise

Experts expect increases both in the short run and long run



Land values are capitalized in cash rents in 12-18 months

Cash rents will follow the increase in land values



As long as land value reflects its income potential, we are not in an asset bubble