

An Update on the Farm Economy

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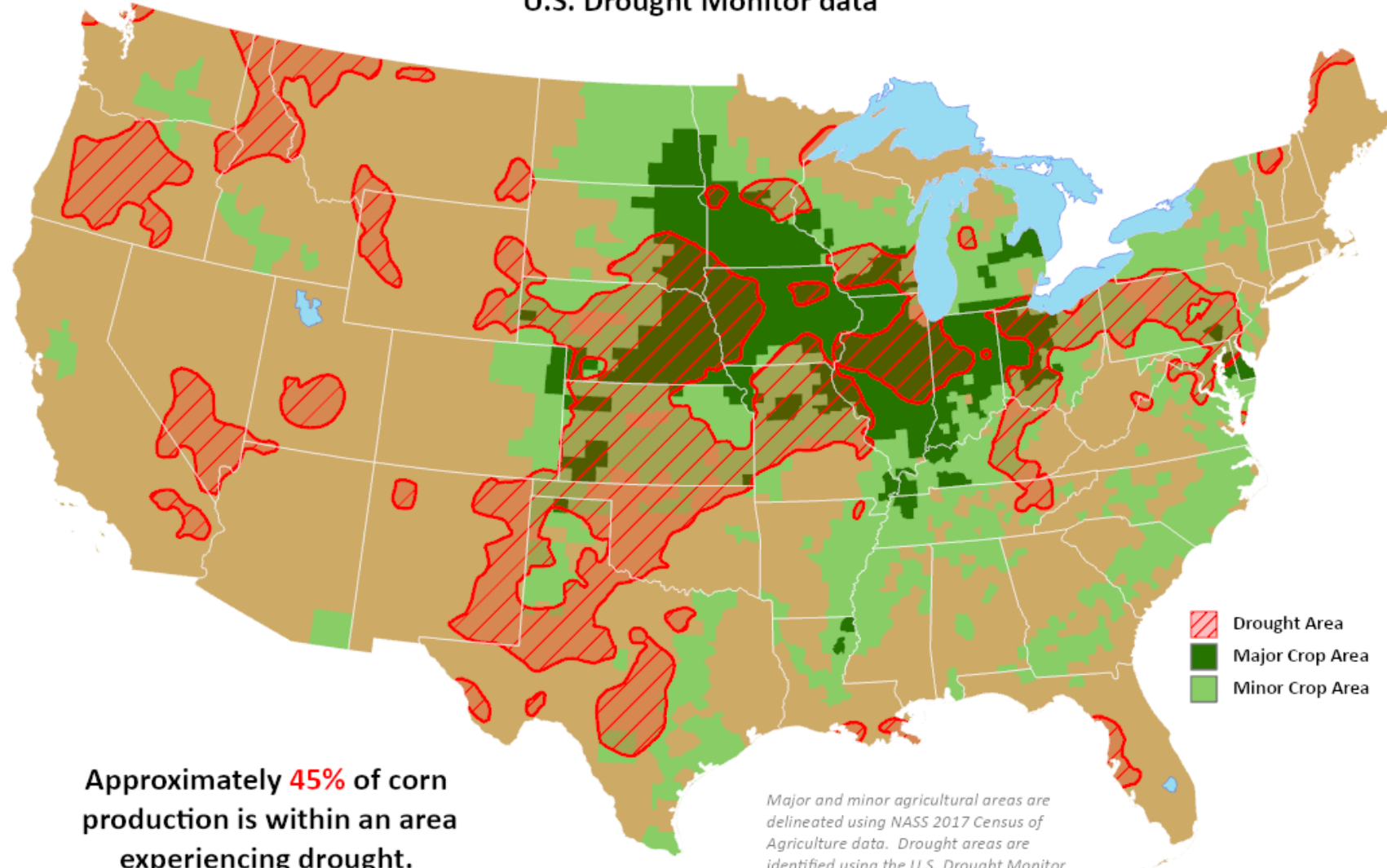
June 14, 2023



THE VIEWS EXPRESSED HERE DO NOT NECESSARILY REFLECT THOSE OF THE FEDERAL RESERVE BANK OF CHICAGO OR THE FEDERAL RESERVE SYSTEM.

Corn Areas in Drought

Reflects **June 6, 2023**
U.S. Drought Monitor data

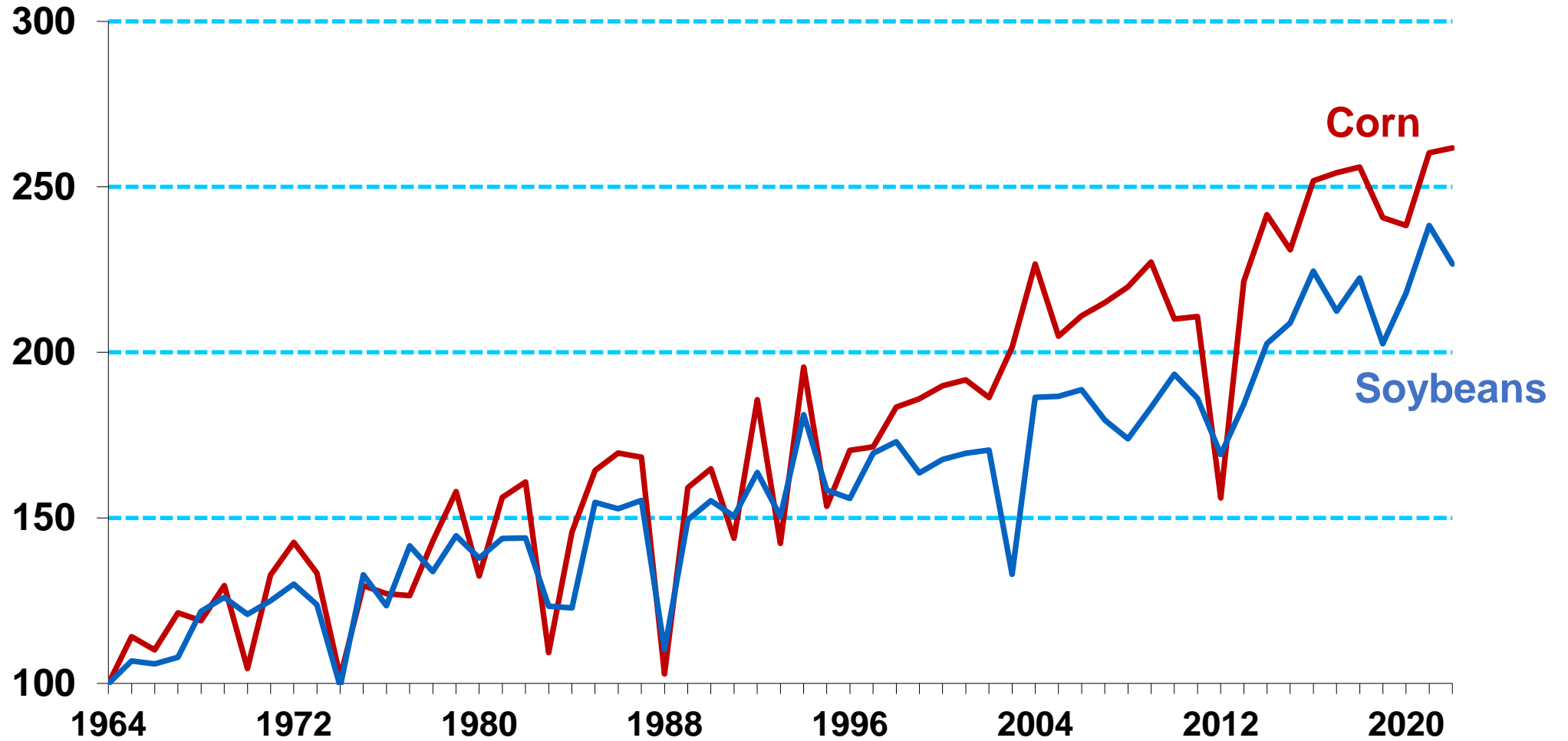


Approximately **45%** of corn production is within an area experiencing drought.

Major and minor agricultural areas are delineated using NASS 2017 Census of Agriculture data. Drought areas are identified using the U.S. Drought Monitor product.

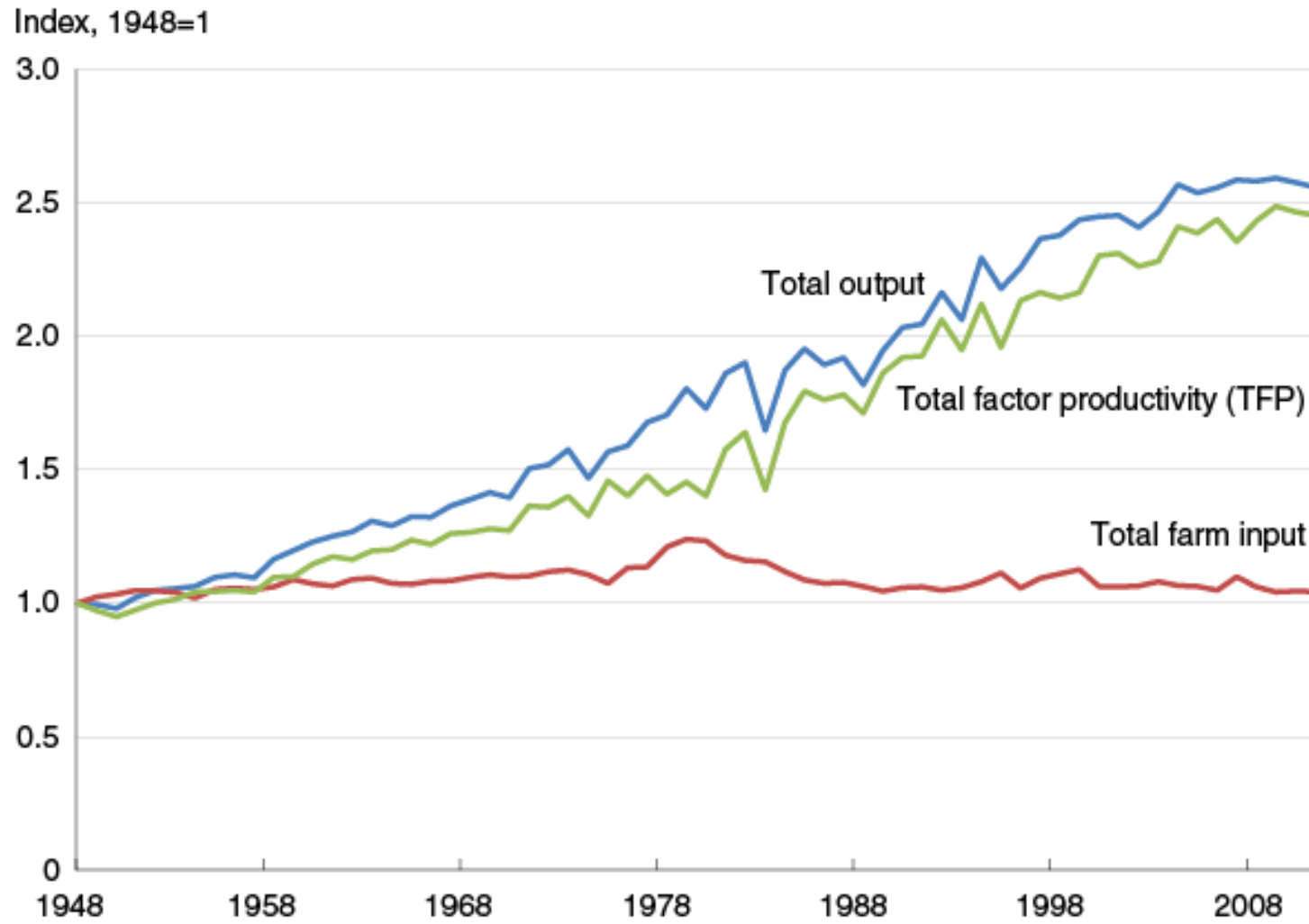
District yield indexes up a lot over time, with new record corn yield in 2022

(1964=100)



Source: USDA, National Agricultural Statistics Service

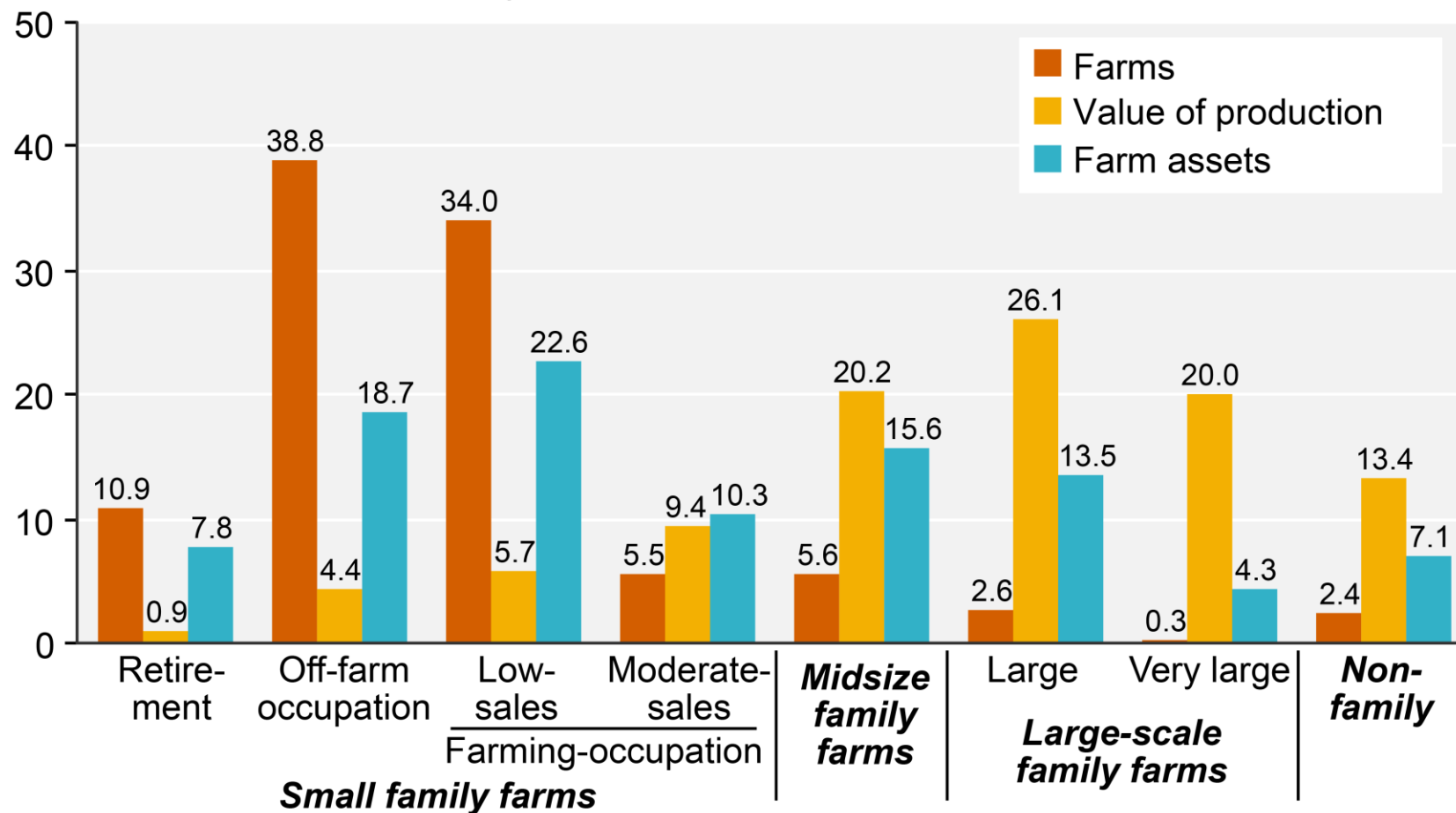
U.S. agricultural productivity growth accounts for most of output growth between 1948 and 2011



Source: USDA, Economic Research Service.

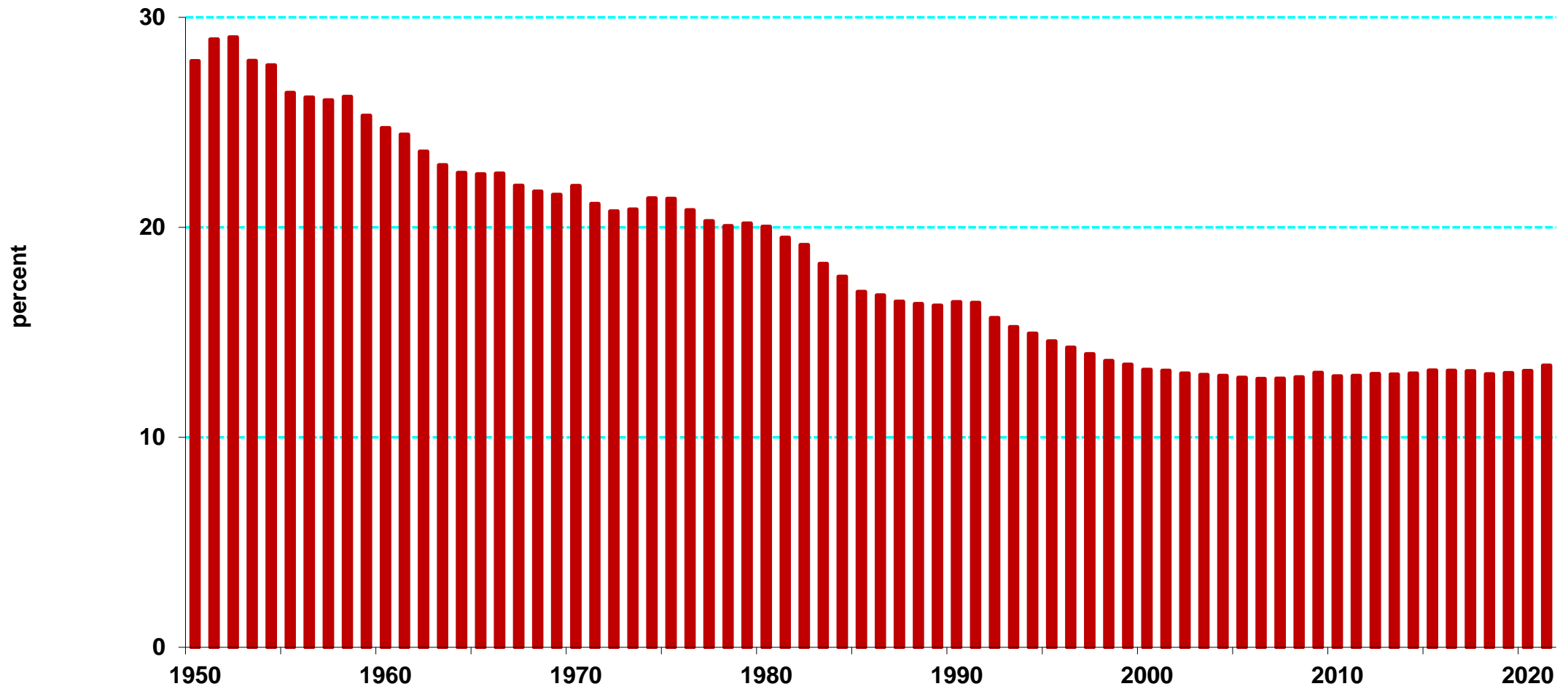
Distribution of farms, value of production, and farm assets, 2020

Percent of U.S. farms, value of production, and assets



Note: Details may not add up to 100 percent due to rounding. Small family farms have annual gross cash farm income (GCFI) less than \$350,000, measured before deducting expenses. Midsize family farms have GCFI of \$350,000–\$999,999. Large-scale family farms have GCFI of \$1,000,000 or more. Source: USDA, Economic Research Service and USDA, National Agricultural Statistics Service, 2020 Agricultural Resource Management Survey (data as of December 2021).

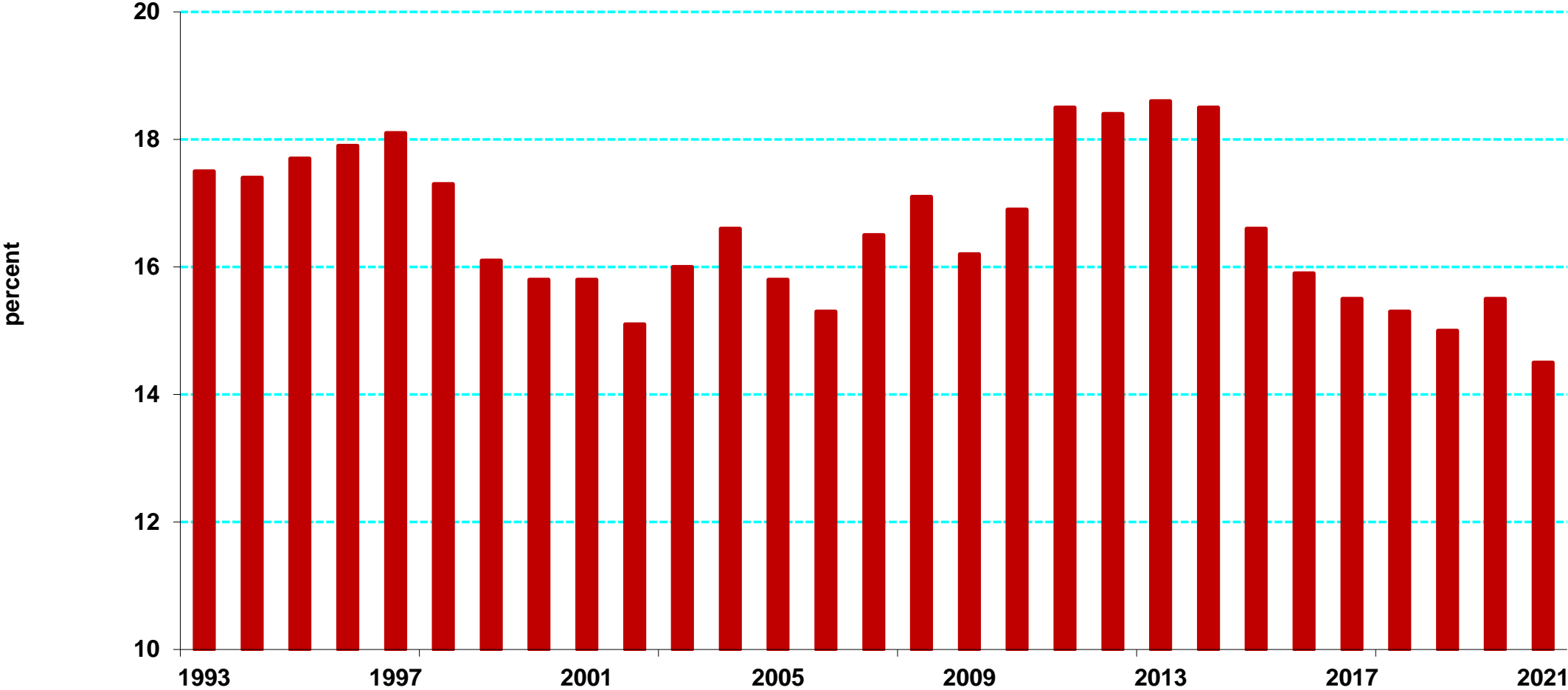
Share of Personal Consumption Expenditures spent on food & beverages and food services



Food Dollar Shares for 2020



Farm Share of Food Dollar moving lower



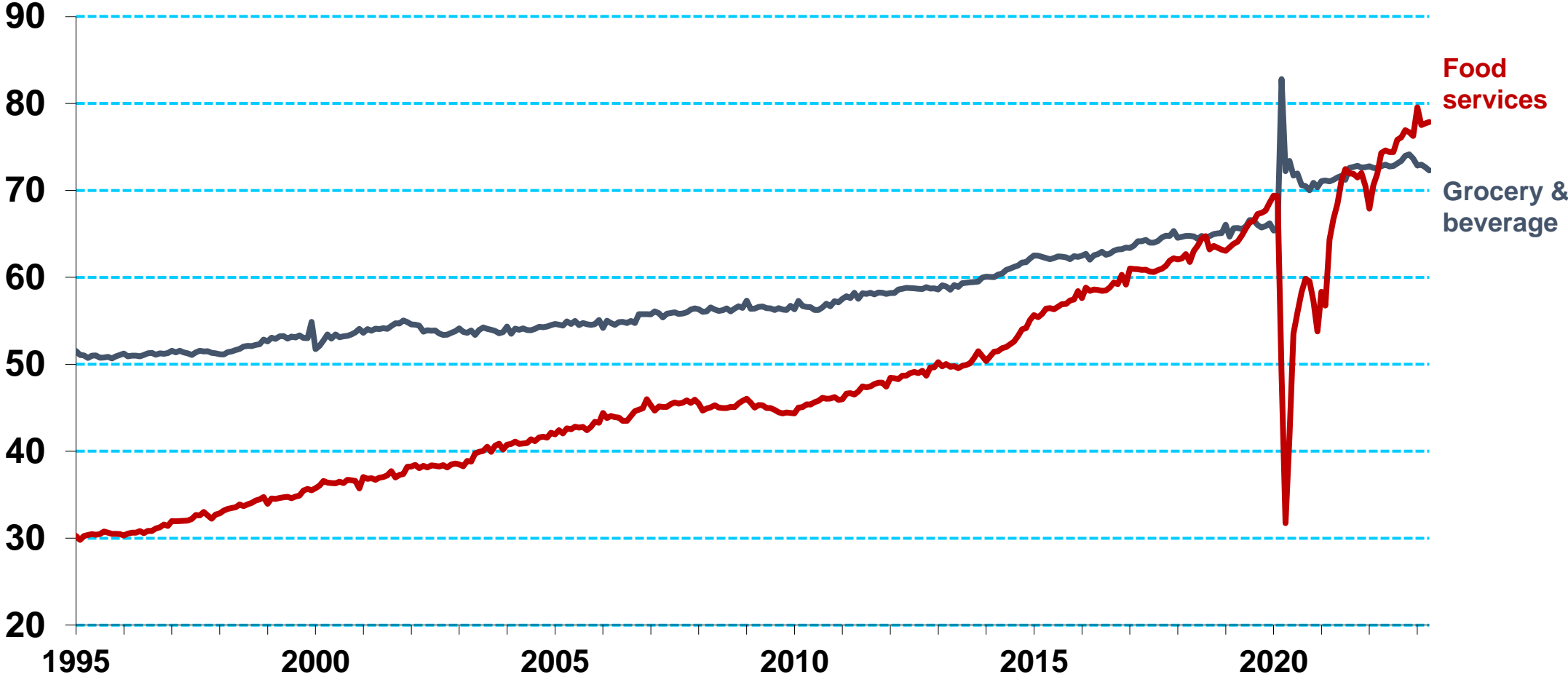
Pandemic impacts on the food economy

- Disruptions to food distribution networks
- Loss of demand for food services, including schools
- Milk dumped even as grocery shelves empty out
- Food production hurt by Covid-19 cases and logistics
- Jump in food eaten at home and food prices
- Divergence in employment outcomes



Food services overtook grocery sales again

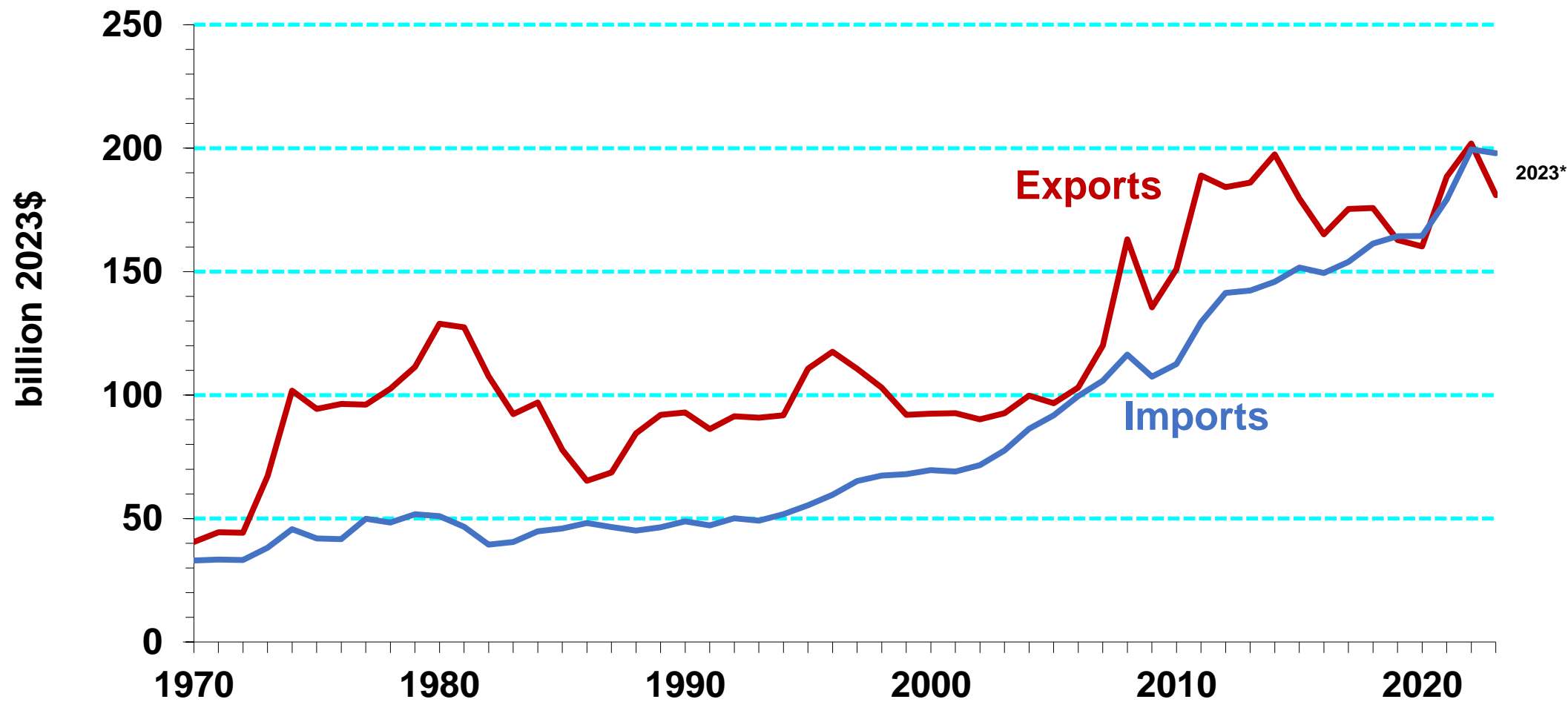
(retail sales in billion \$ adjusted by PCE for Dec. 2020)



Data Sources: U.S. Census Bureau and Bureau of Economic Analysis

Value of U.S. agricultural exports and imports

(Fiscal Year, adjusted for inflation)

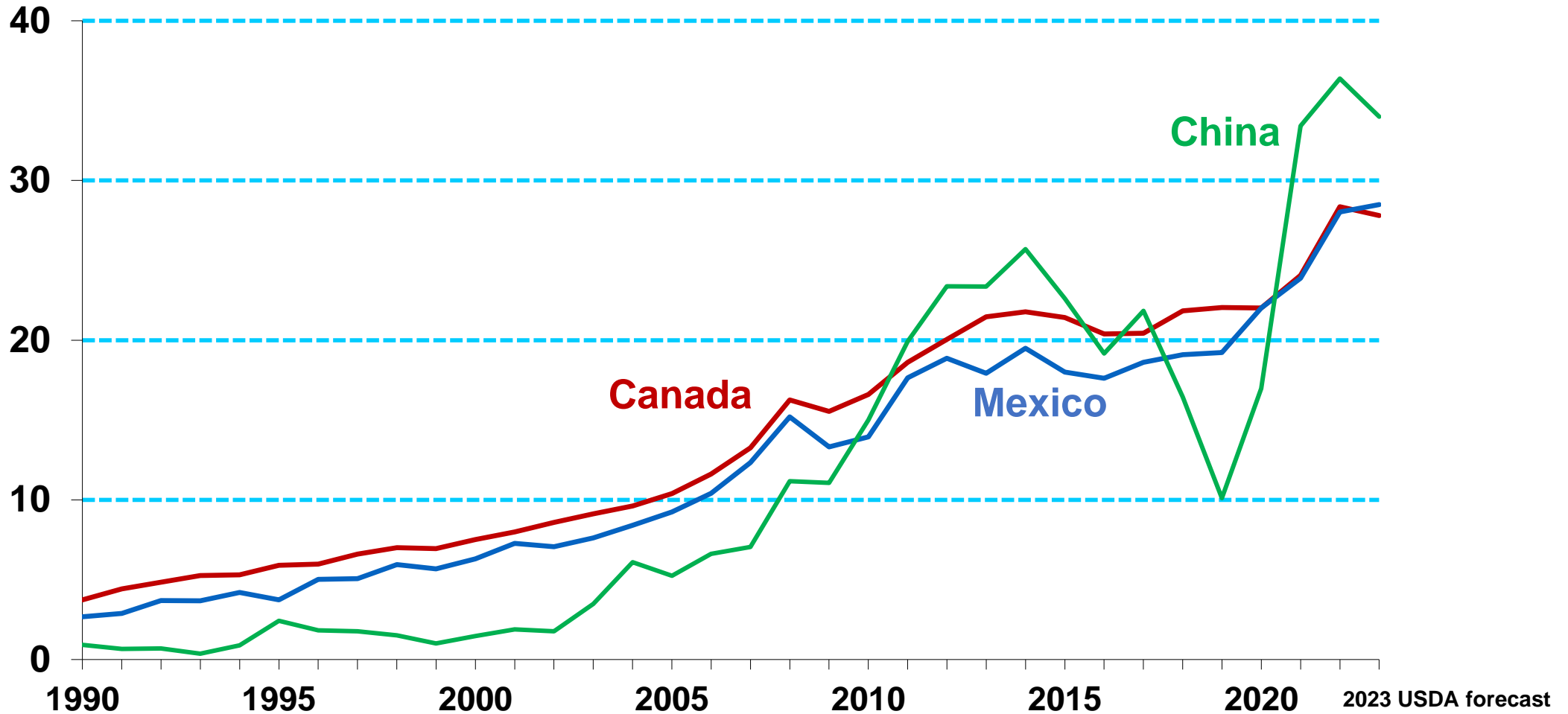


*USDA forecast

Source: USDA, Economic Research Service

Agricultural exports to China expected to remain higher than to NAFTA partners in FY 2023

(Fiscal Year in billion \$)

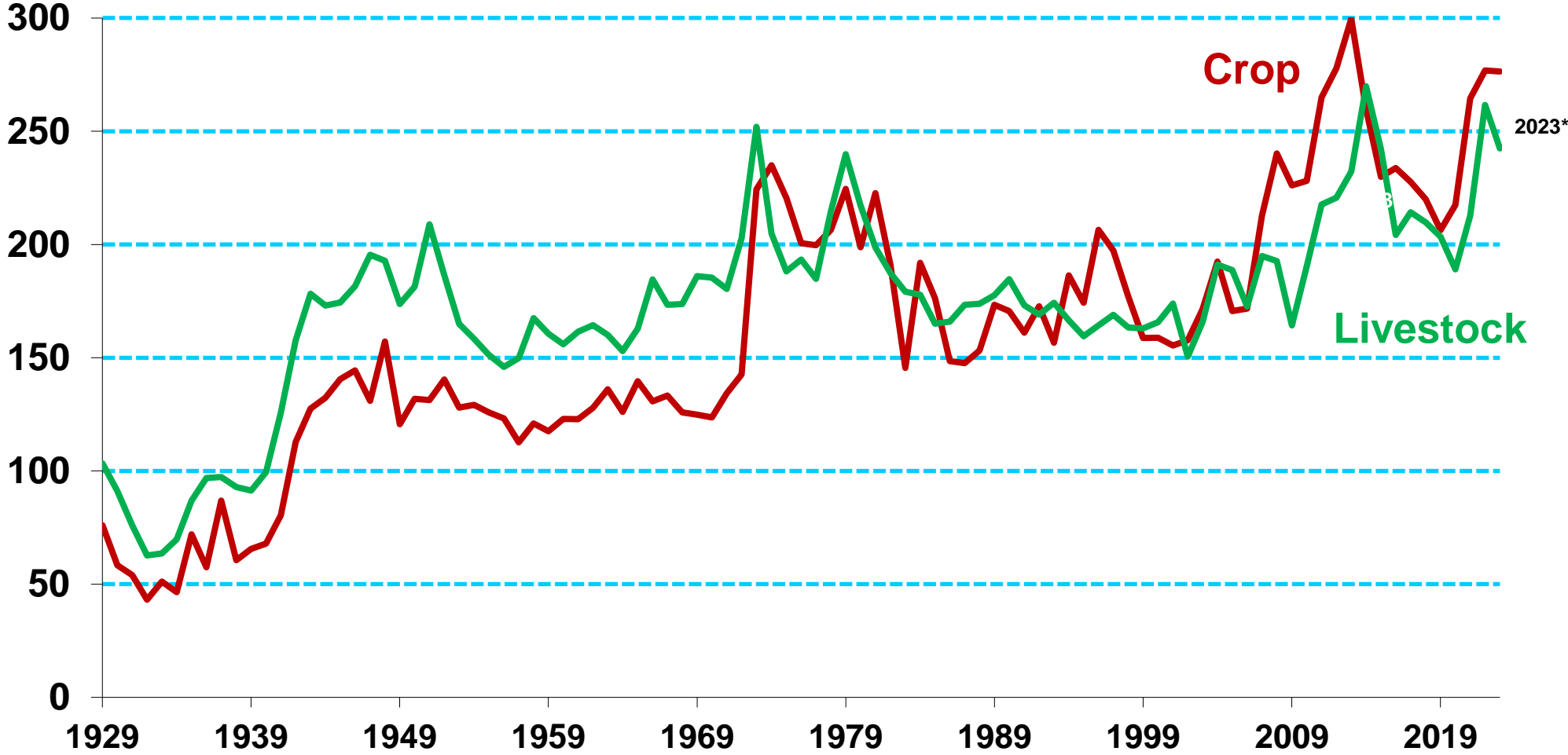


Source: USDA, Economic Research Service

FEDERAL RESERVE BANK of CHICAGO

U.S. Farm Production Value

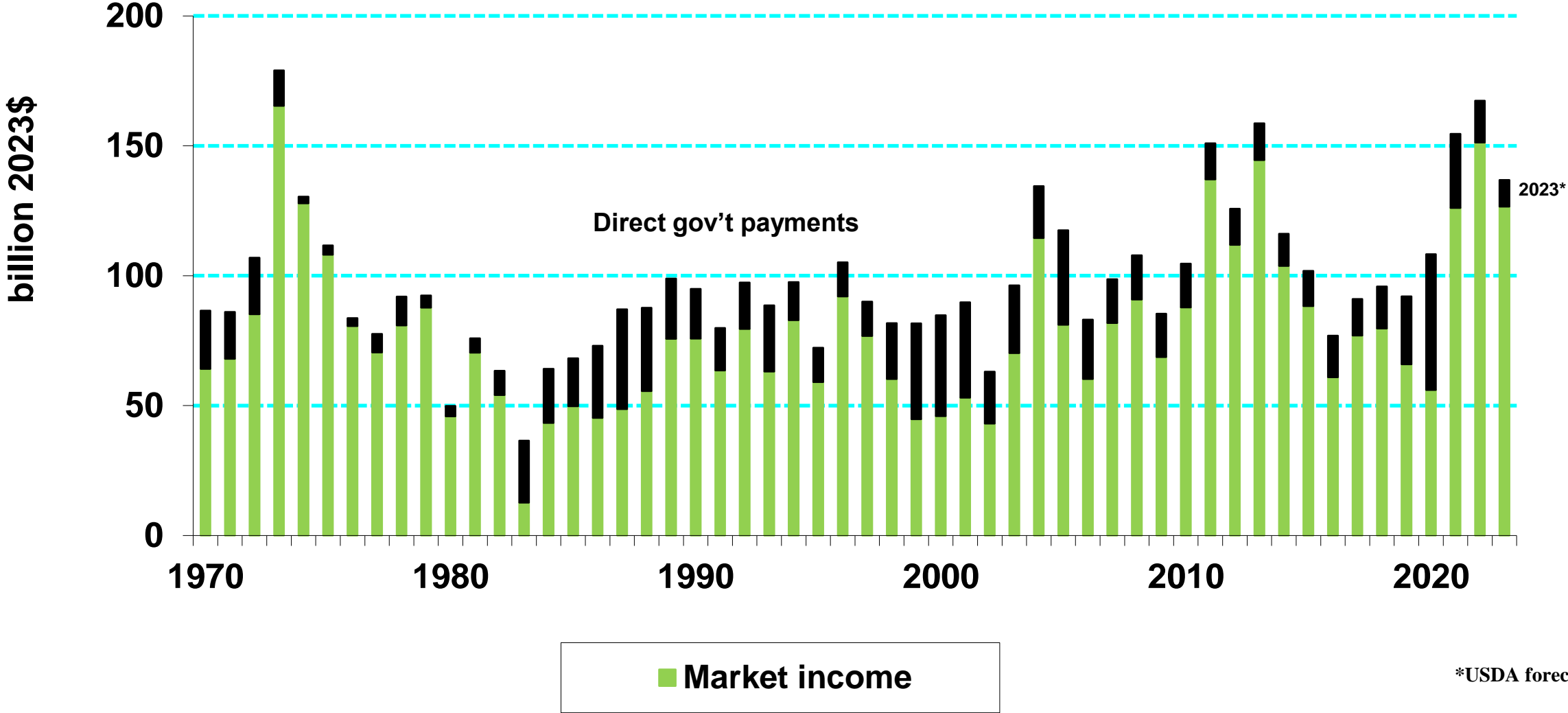
(billion dollars, 2023\$)



*USDA forecast

Source: USDA, Economic Research Service

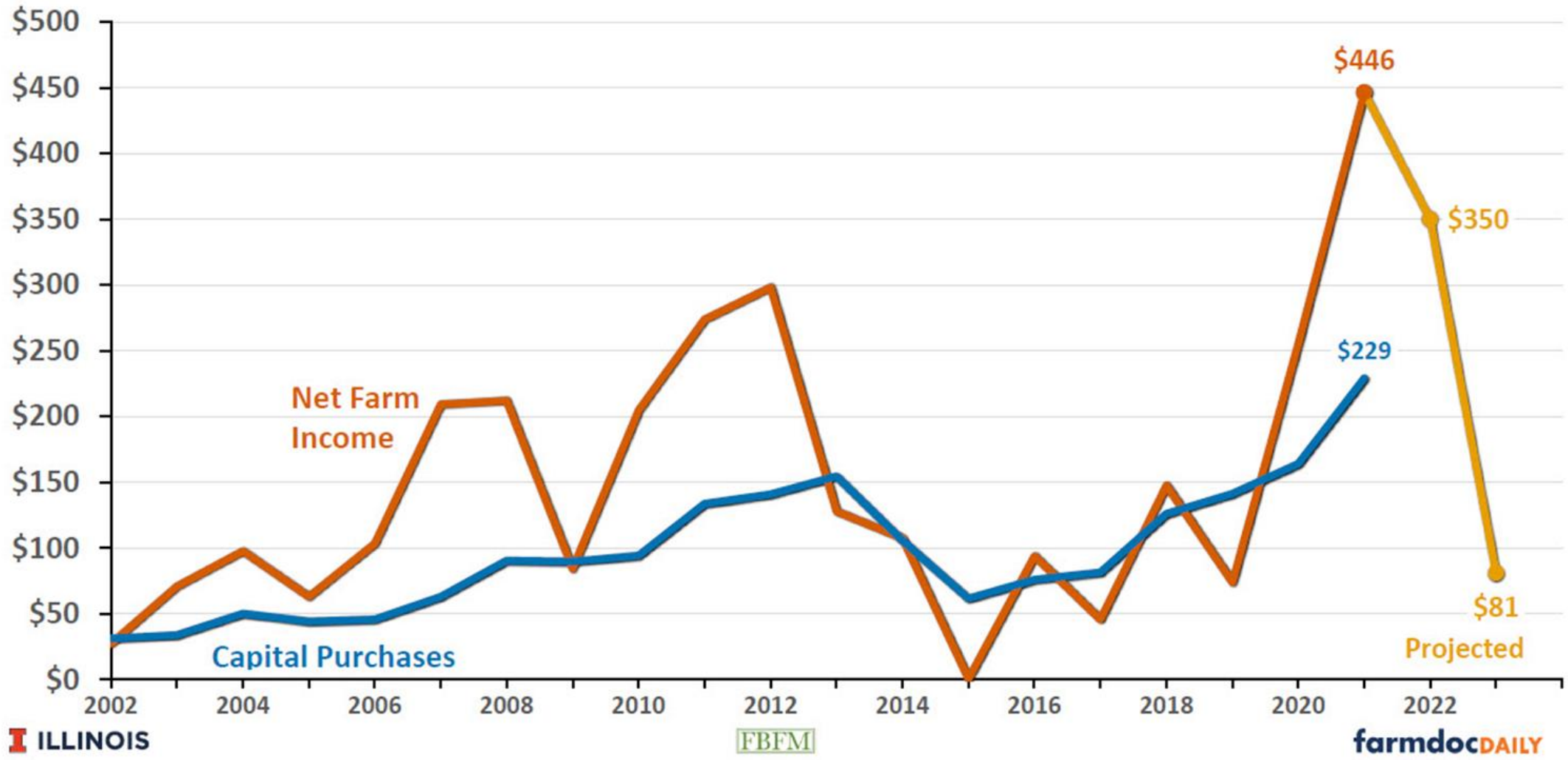
Real net farm income is expected decline in 2023



Source: USDA, Economic Research Service

Net Farm Income and Capital Purchases on Grain Farms in \$1,000

Enrolled in Illinois Farm Business Farm Management



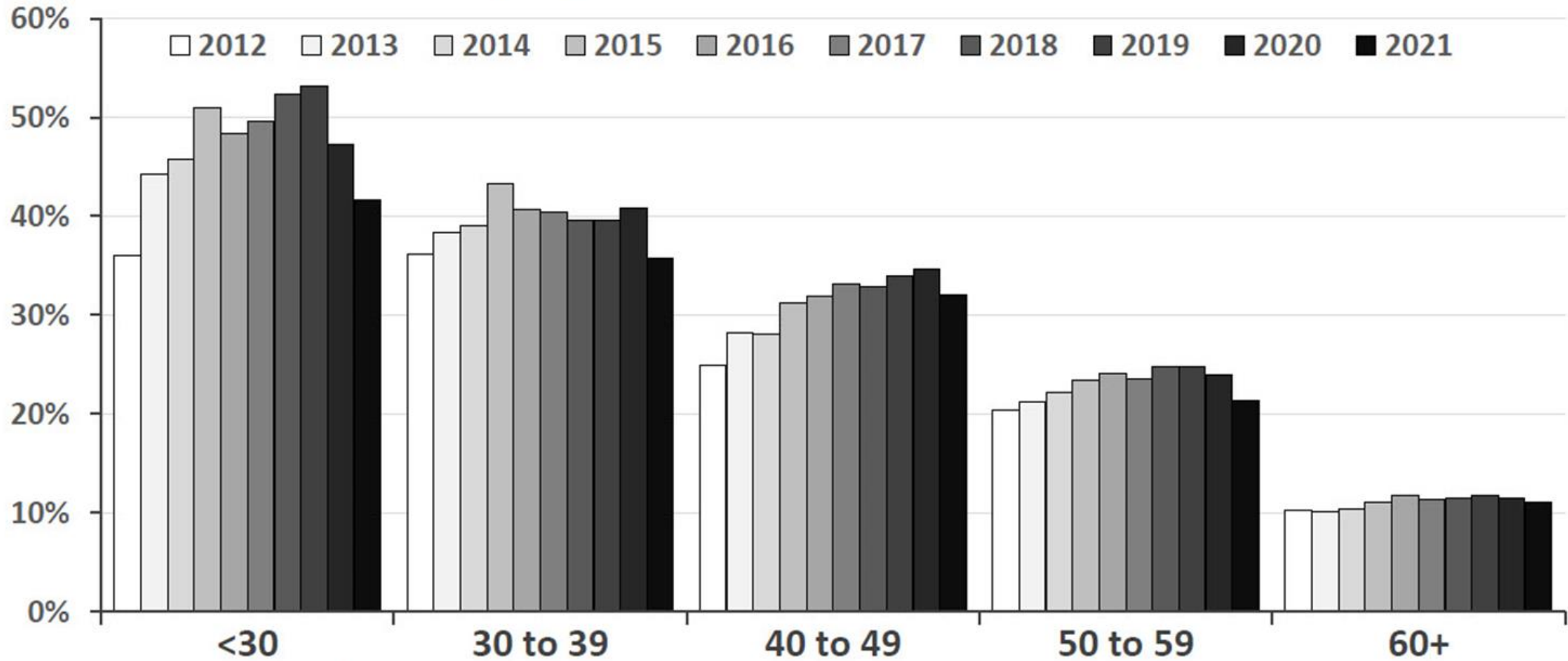
ILLINOIS

FBFM

farmdocDAILY

FBFM Records Summary

Debt to Asset Ratio by Age

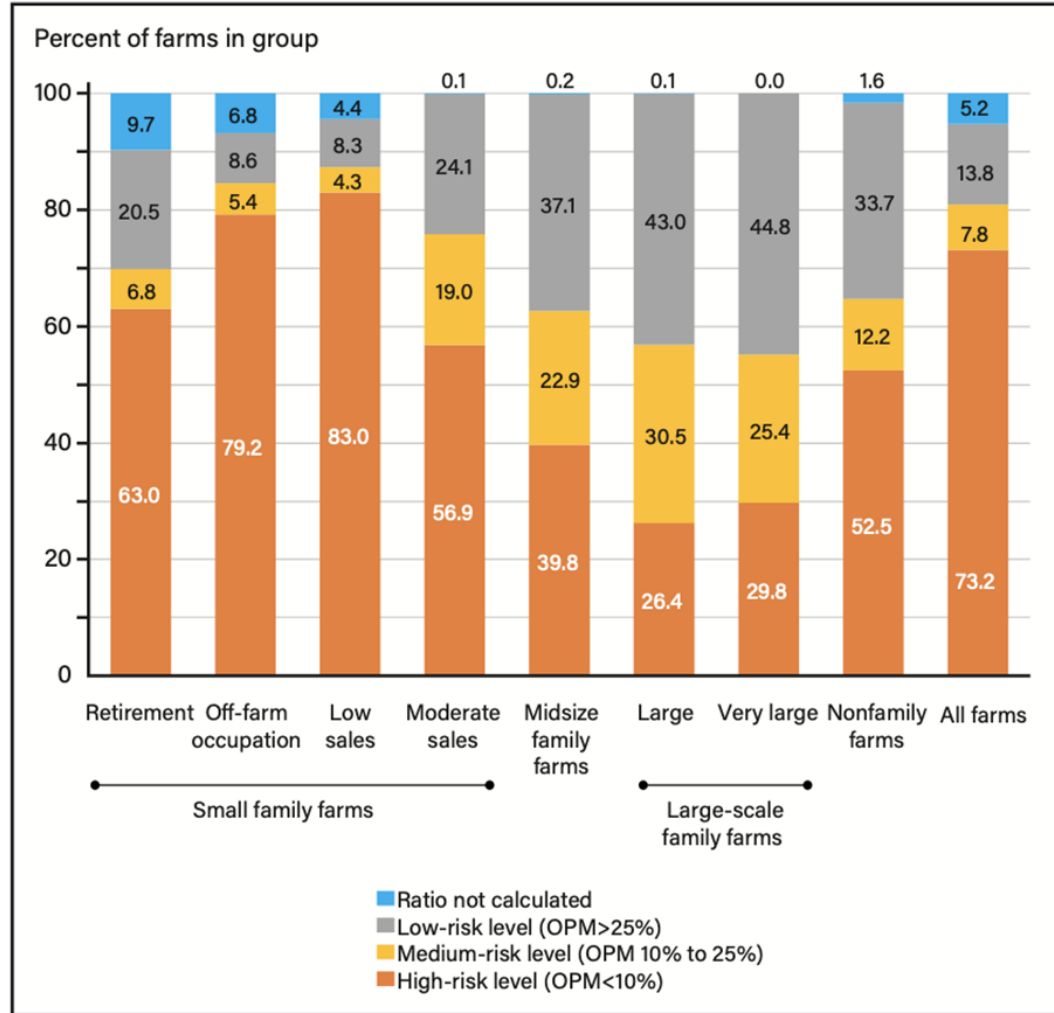


ILLINOIS

Farmer's Age

farmdoc

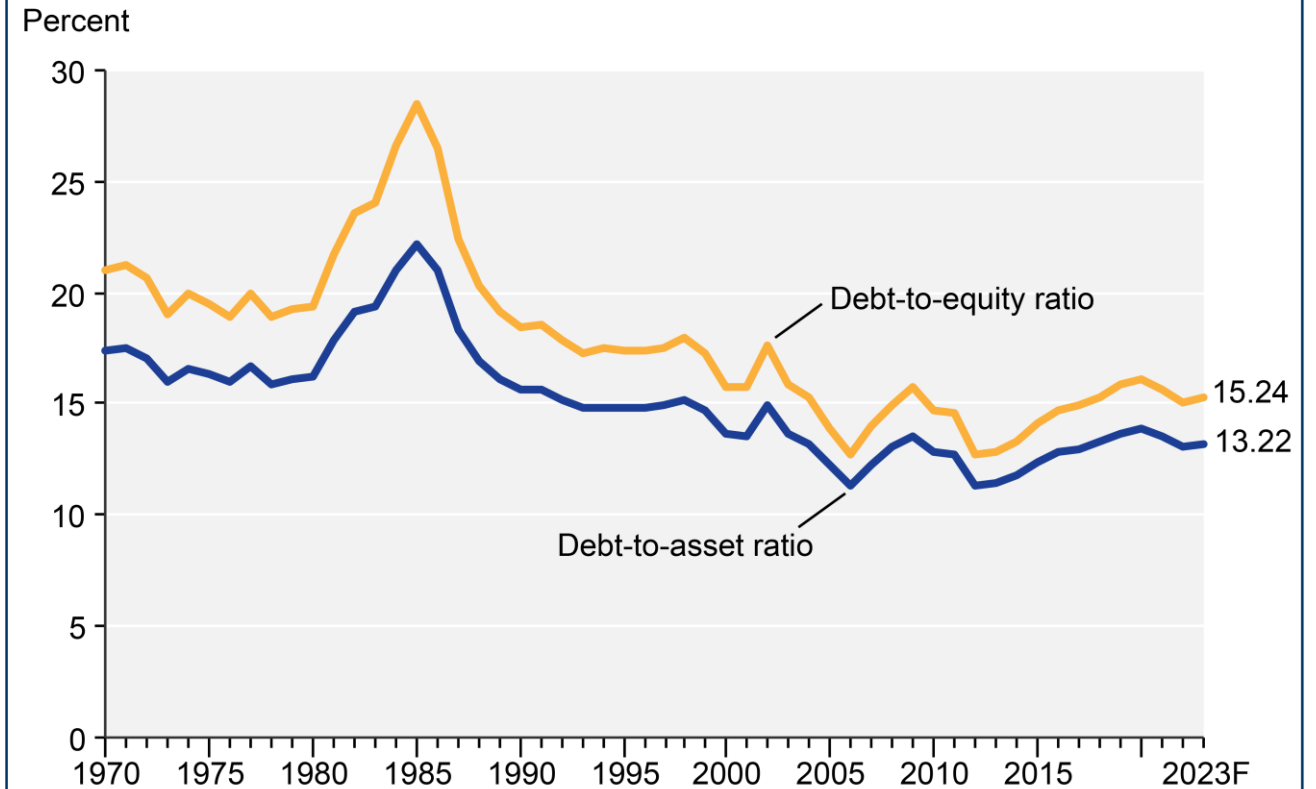
Farms by operating profit margin and type, 2020



Notes: Due to rounding, sums may not add to 100 percent. Operating profit margin (OPM)=100 times (net farm income plus interest paid minus charges for unpaid labor and management)/gross farm income. OPM ratios are not calculated for operations with zero or negative gross farm income.

Source: USDA, National Agricultural Statistics Service and USDA, Economic Research Service, 2020 Agricultural Resource Management Survey.

U.S. farm sector solvency ratios, 1970–2023F

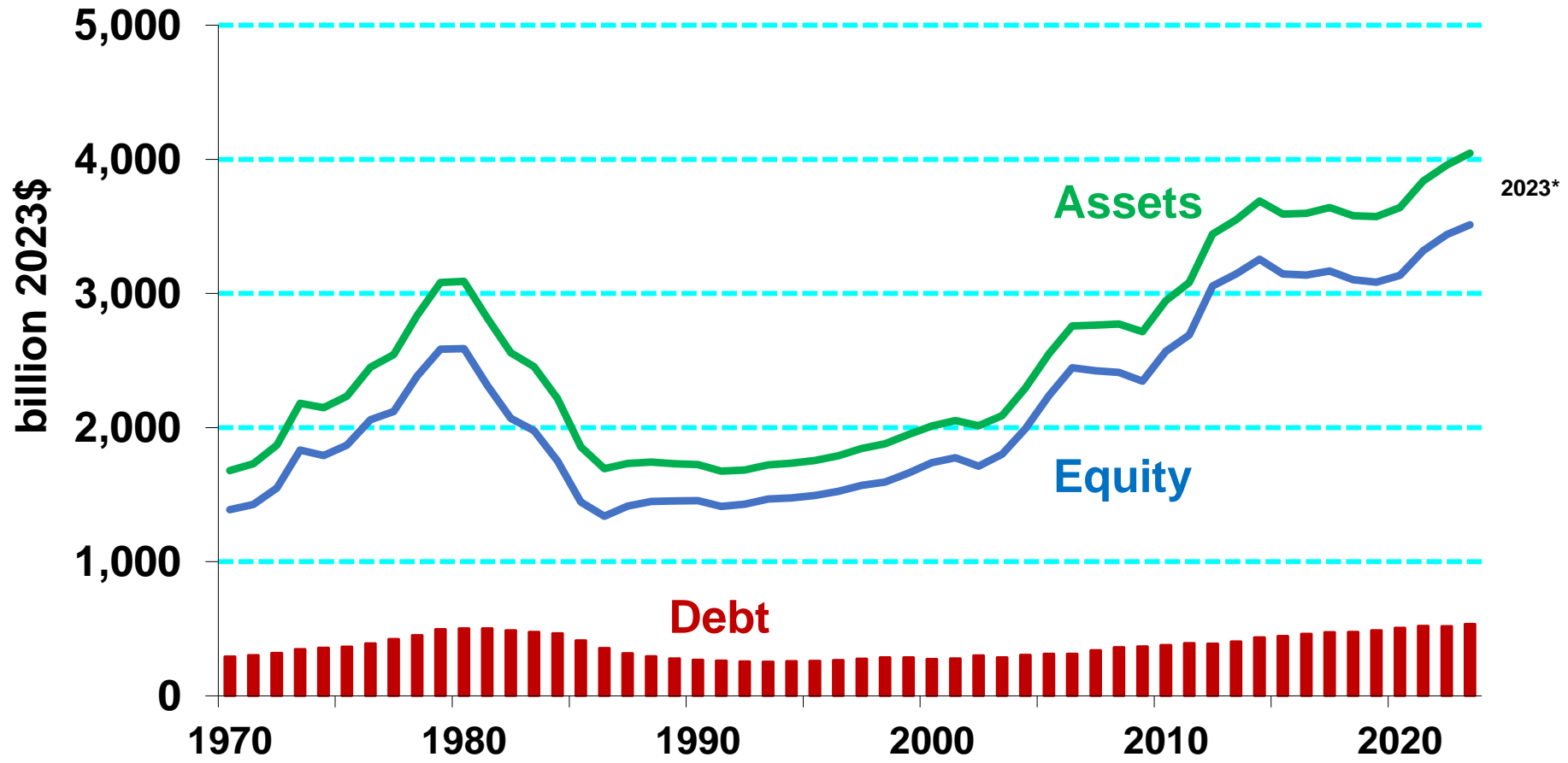


Note: F = Forecast. Data for 2022 and 2023 are forecasts.

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

Data as of February 7, 2023.

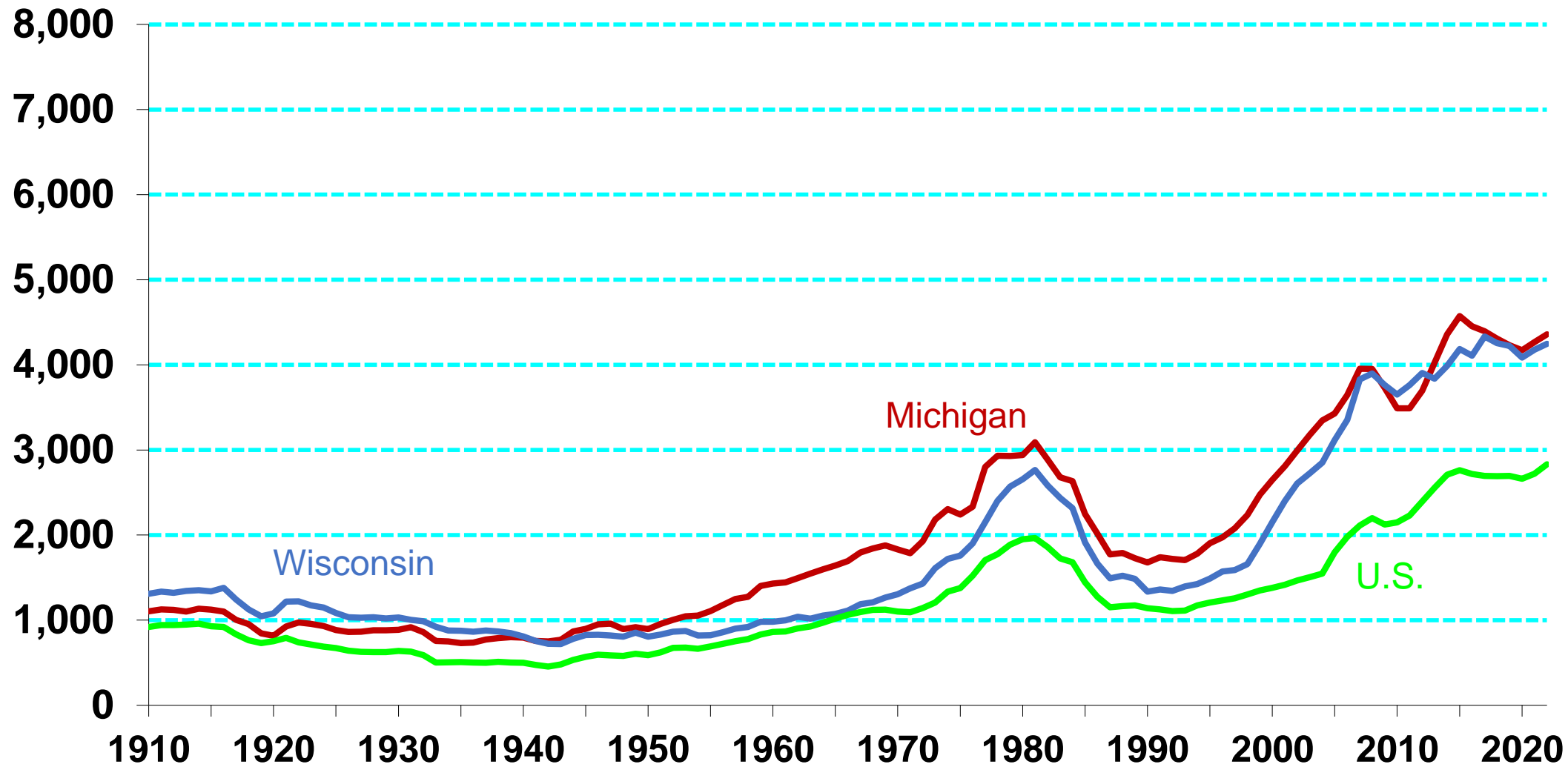
Real farm sector assets, equity, and debt seen setting new peaks in 2023



*USDA forecast

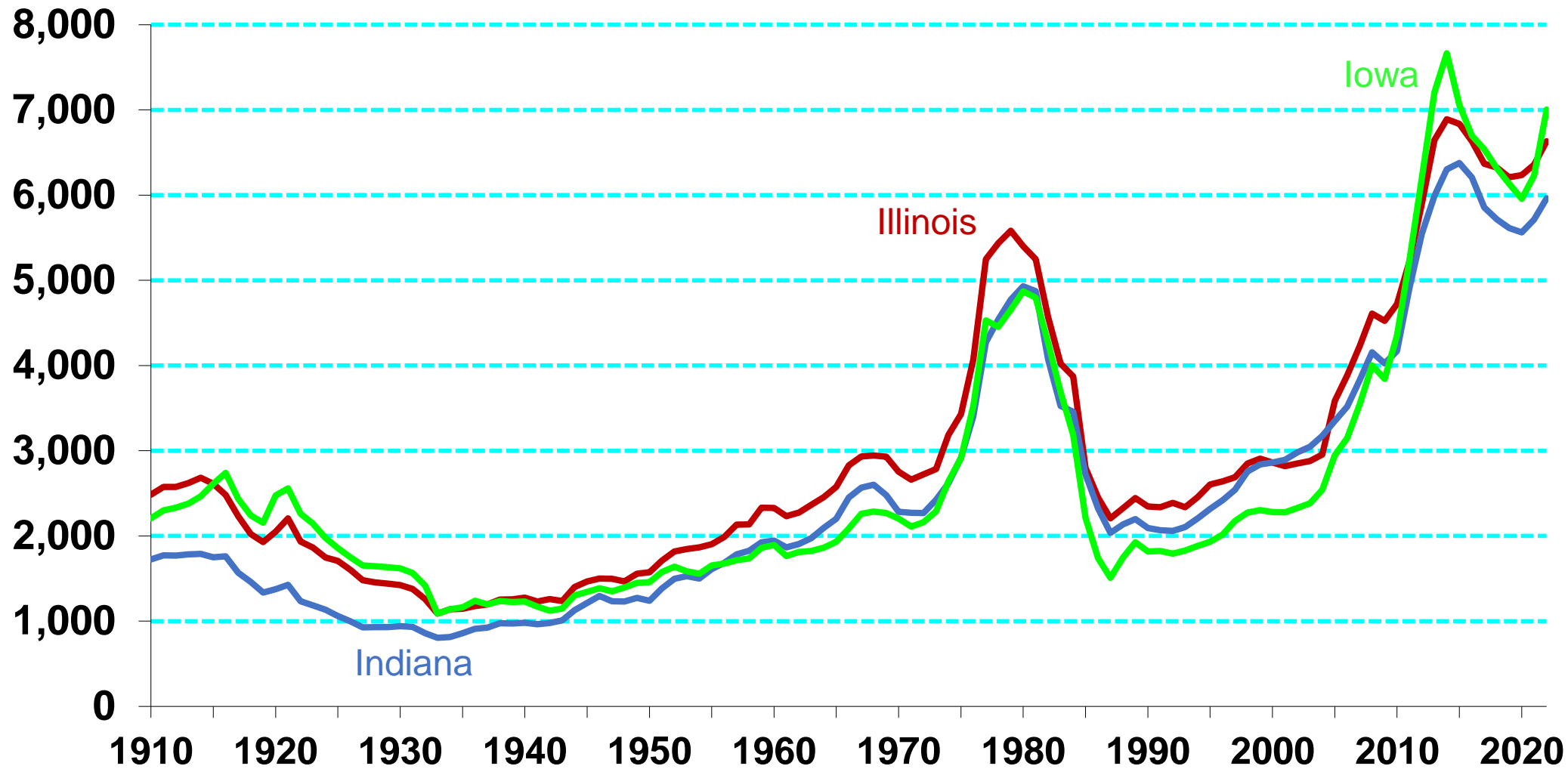
Source: USDA, Economic Research Service

USDA Farmland Values for Michigan and Wisconsin (2010 dollars)



Source: USDA, National Agricultural Statistics Service

USDA Land Values for Illinois, Indiana, and Iowa (2010 dollars)



Source: USDA, National Agricultural Statistics Service

FEDERAL RESERVE BANK of CHICAGO

Chicago Fed survey results for Q1 of 2023

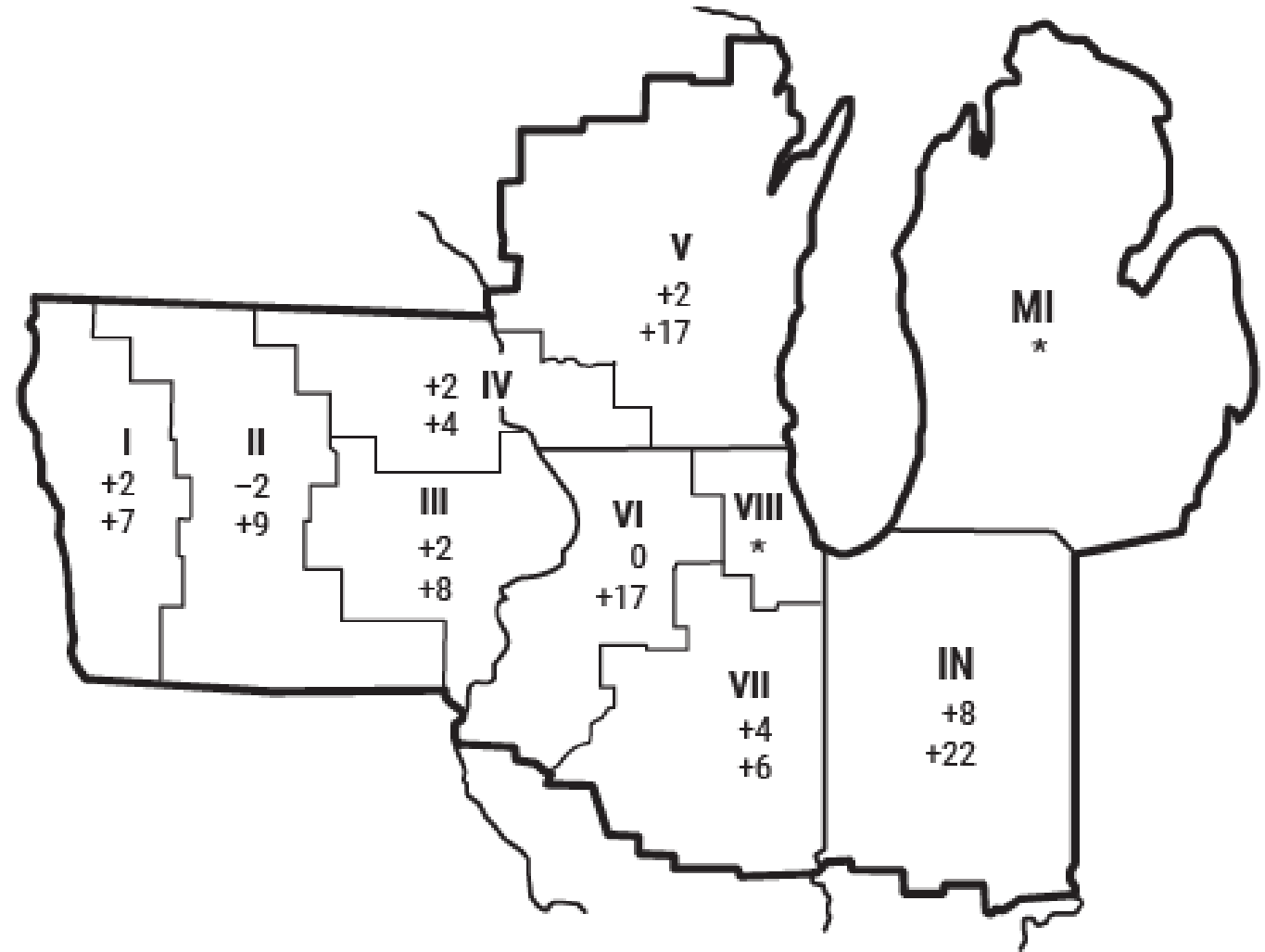
Percent change in dollar value of “good” farmland

Top: January 1, 2023 to April 1, 2023

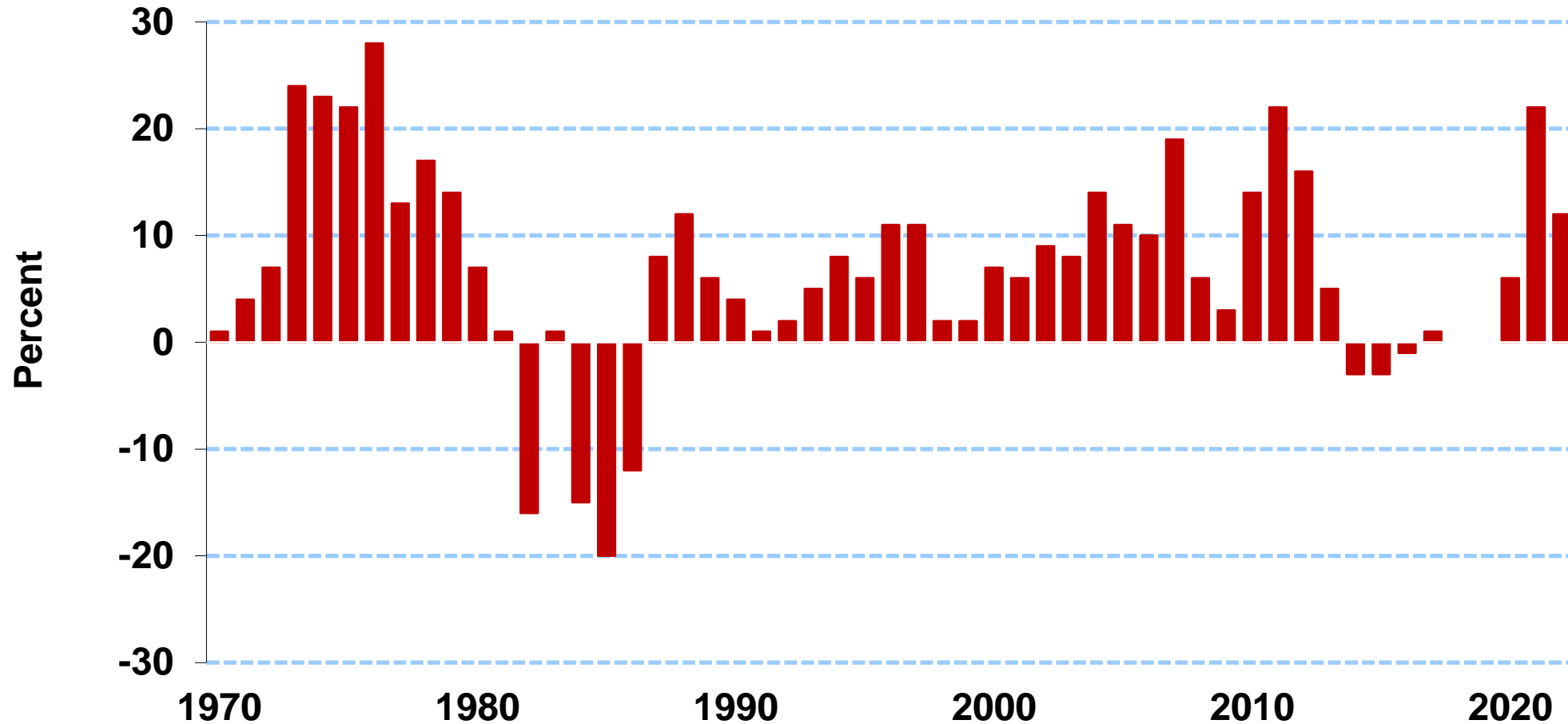
Bottom: April 1, 2022 to April 1, 2023

| | <u>January 1, 2023 to April 1, 2023</u> | <u>April 1, 2022 to April 1, 2023</u> |
|------------------|---|---|
| Illinois | +2 | +11 |
| Indiana | +8 | +22 |
| Iowa | +1 | +7 |
| Michigan | * | * |
| Wisconsin | +2 | +15 |
| Seventh District | +2 | +10 |

*Insufficient response.

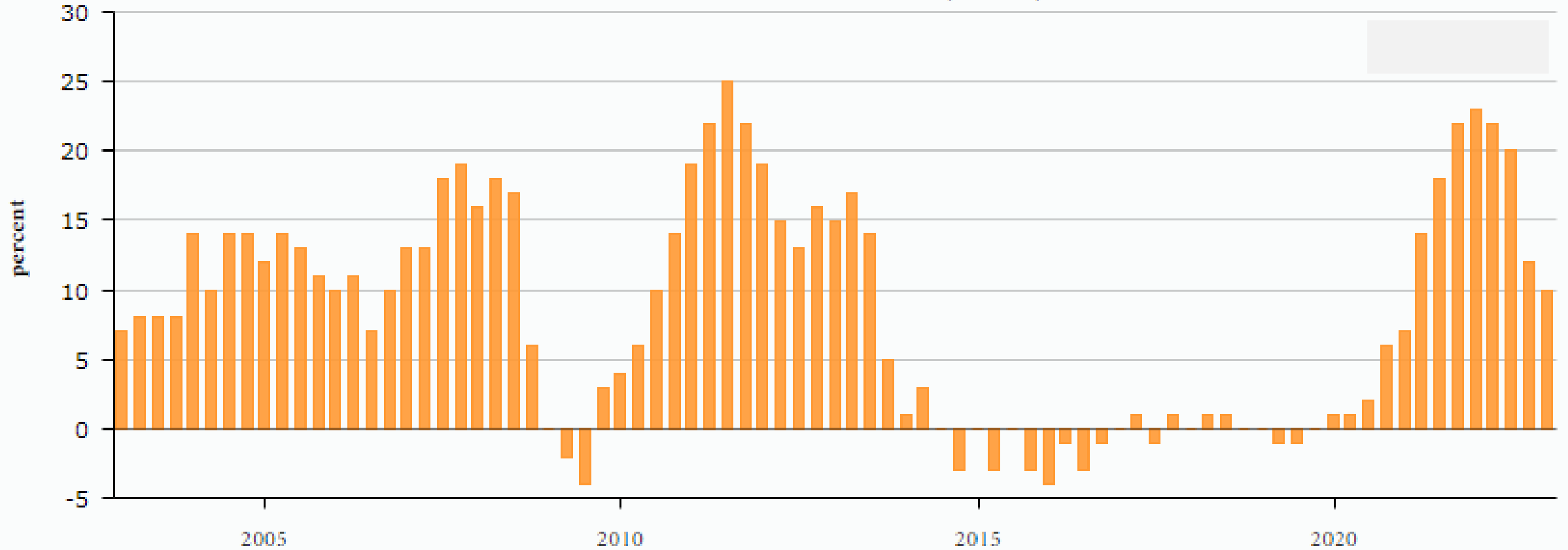


Annual change in farmland values in Seventh Federal Reserve District



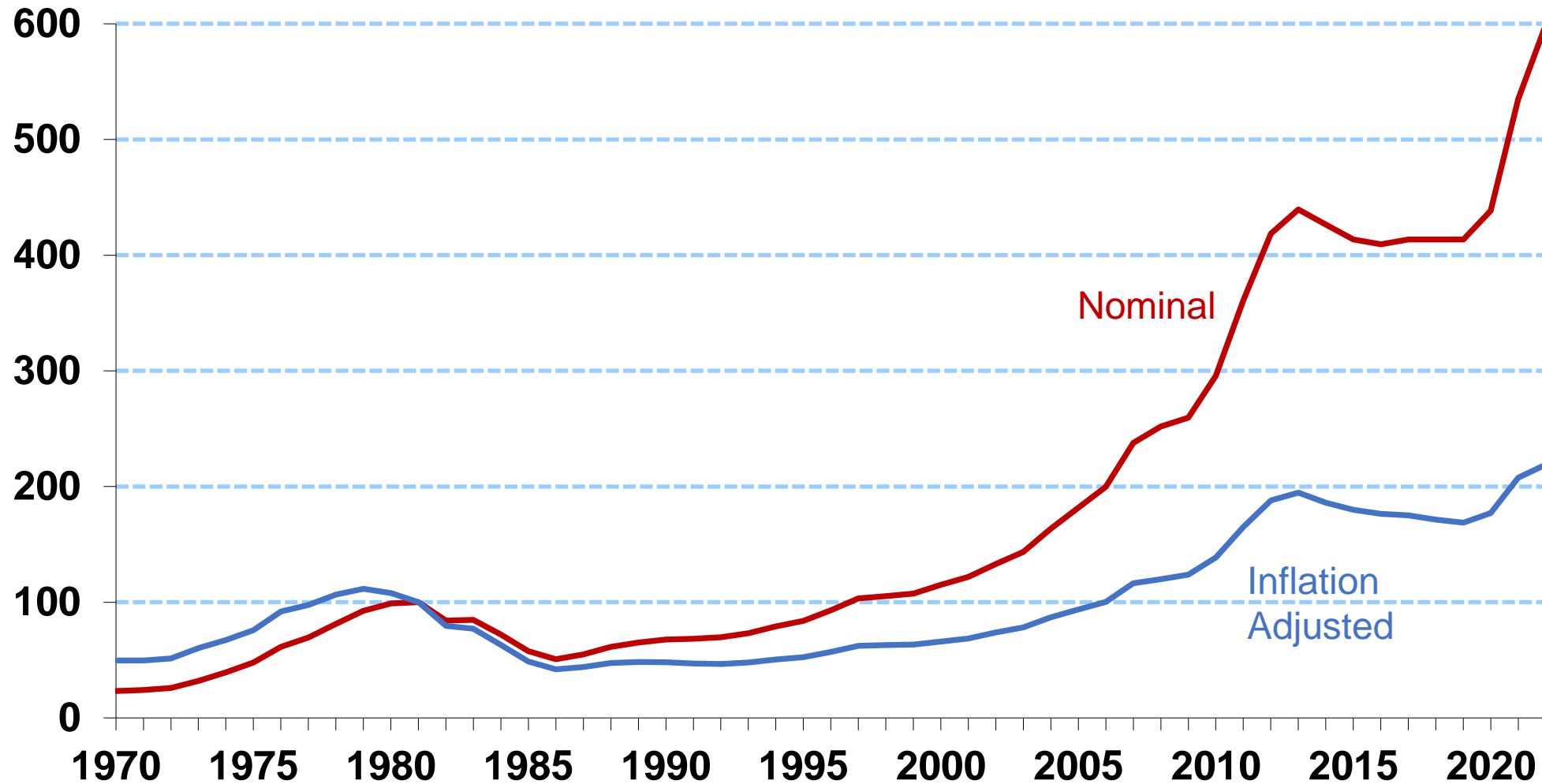
Source: Federal Reserve Bank of Chicago

Year-over-year Changes in Farmland Values in the Seventh District (AG LV)



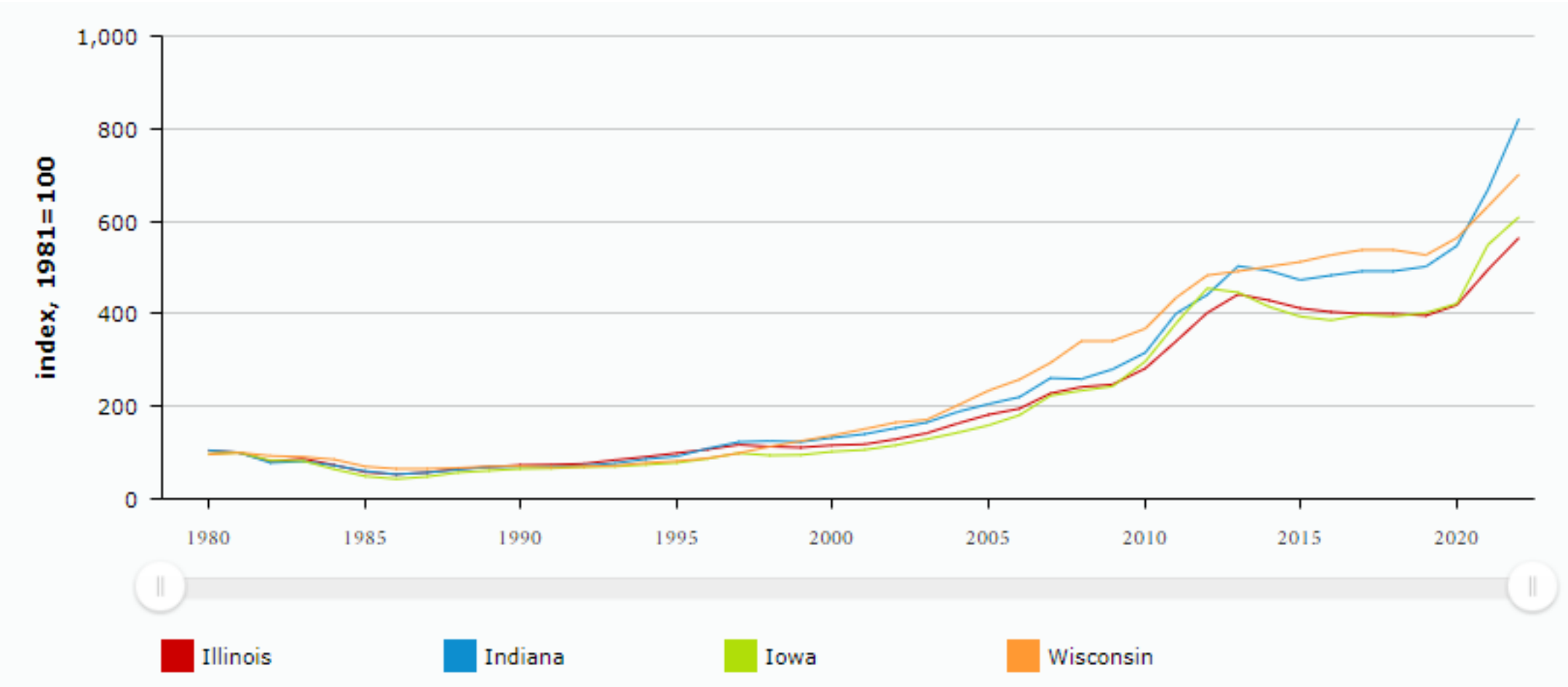
Index of Seventh District farmland values

(1981=100, adjustment by PCE)



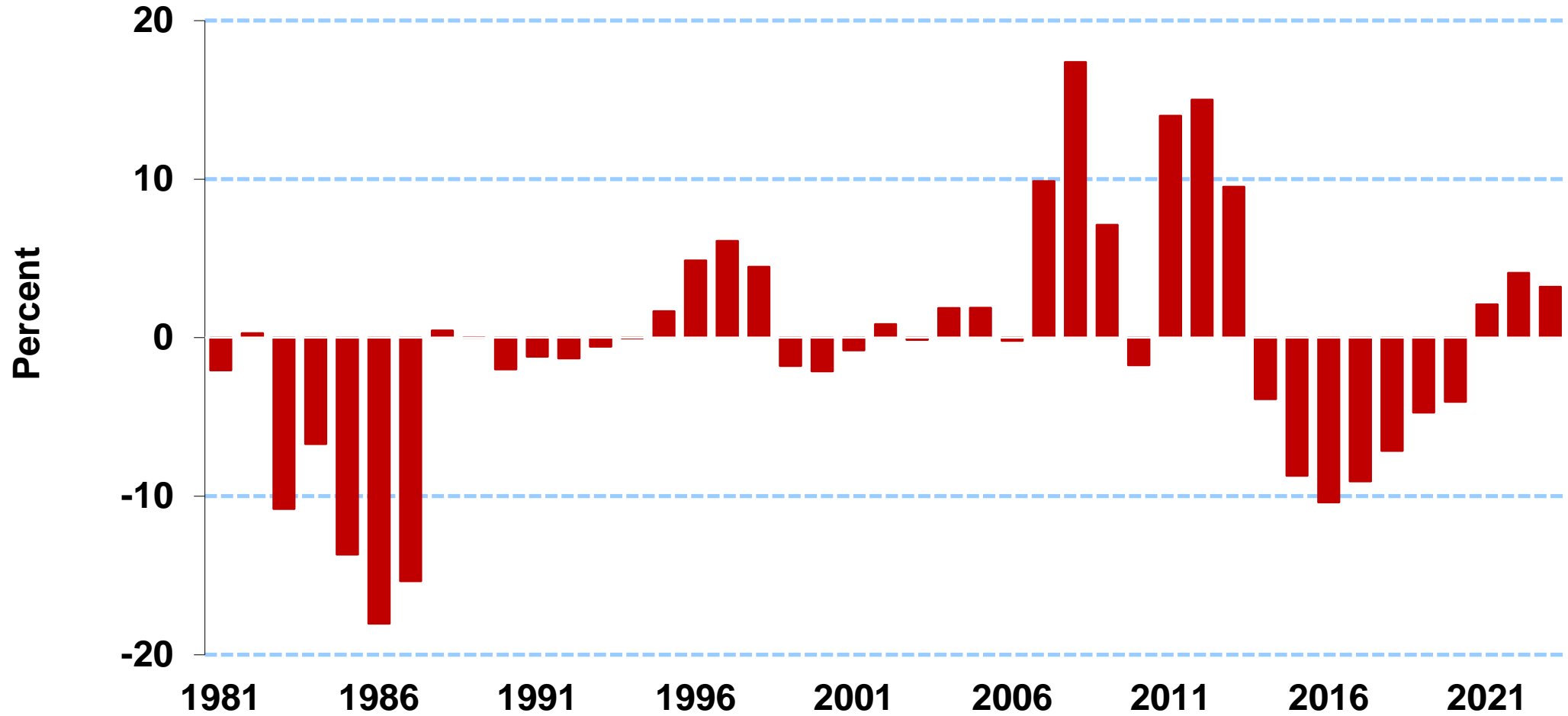
Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis

Farmland Value Indexes for 7th District States



Source: Federal Reserve Bank of Chicago

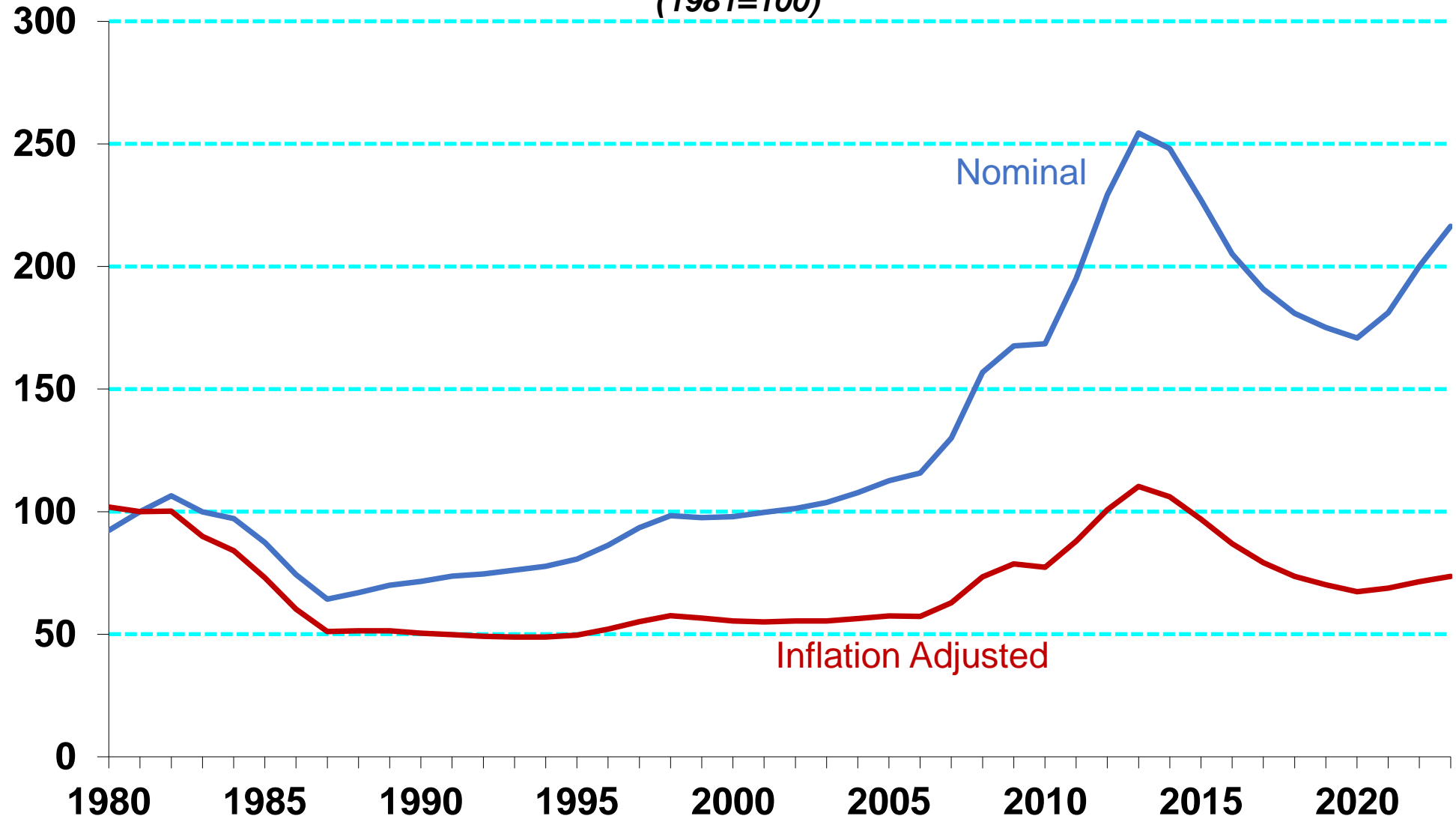
Annual change in real farmland cash rents in 7th Federal Reserve District



Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis

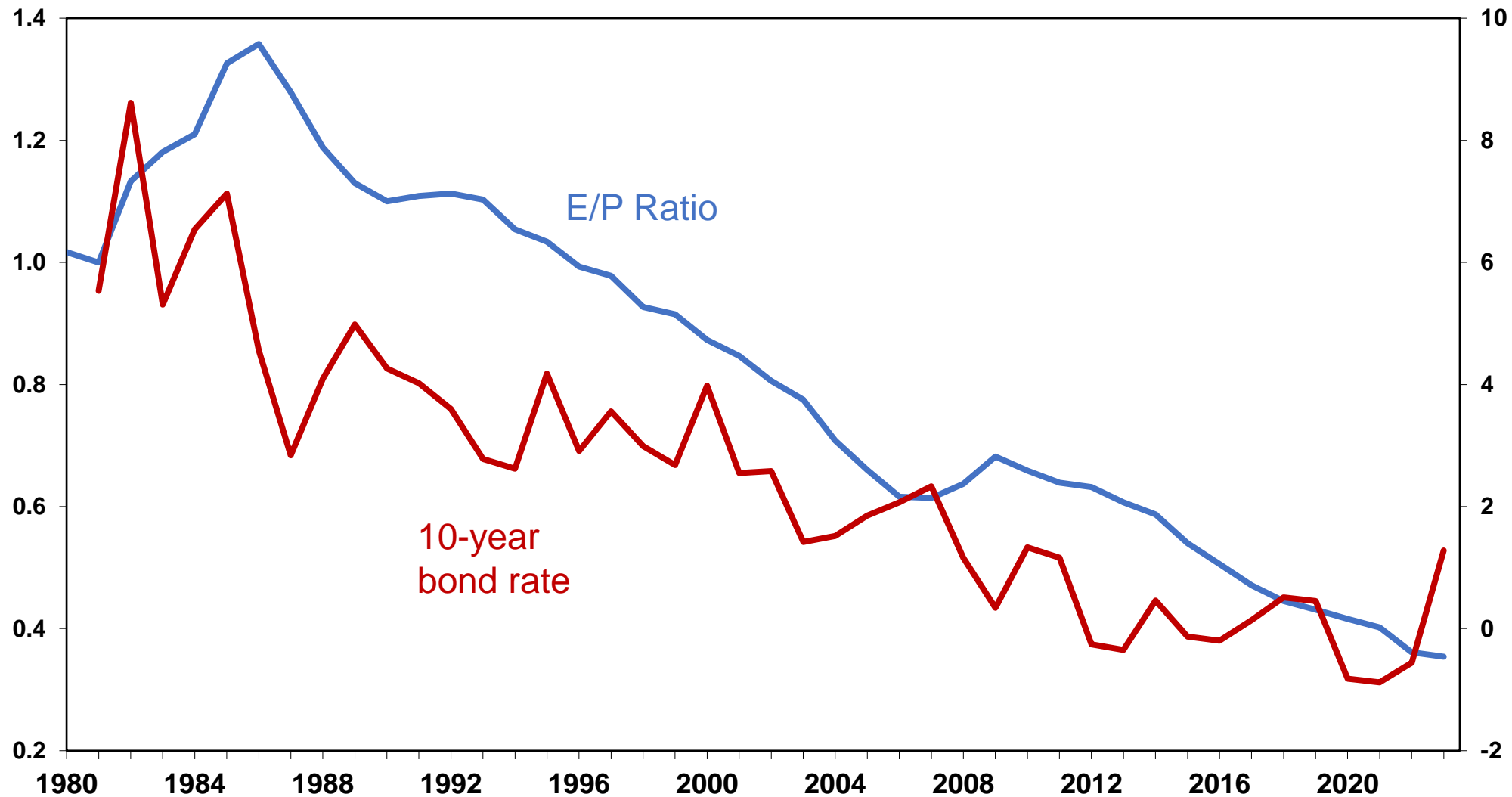
Index of Seventh District Cash Rents Nominal vs. Inflation Adjusted

(1981=100)



Sources: Federal Reserve Bank of Chicago and Bureau of Economic Analysis

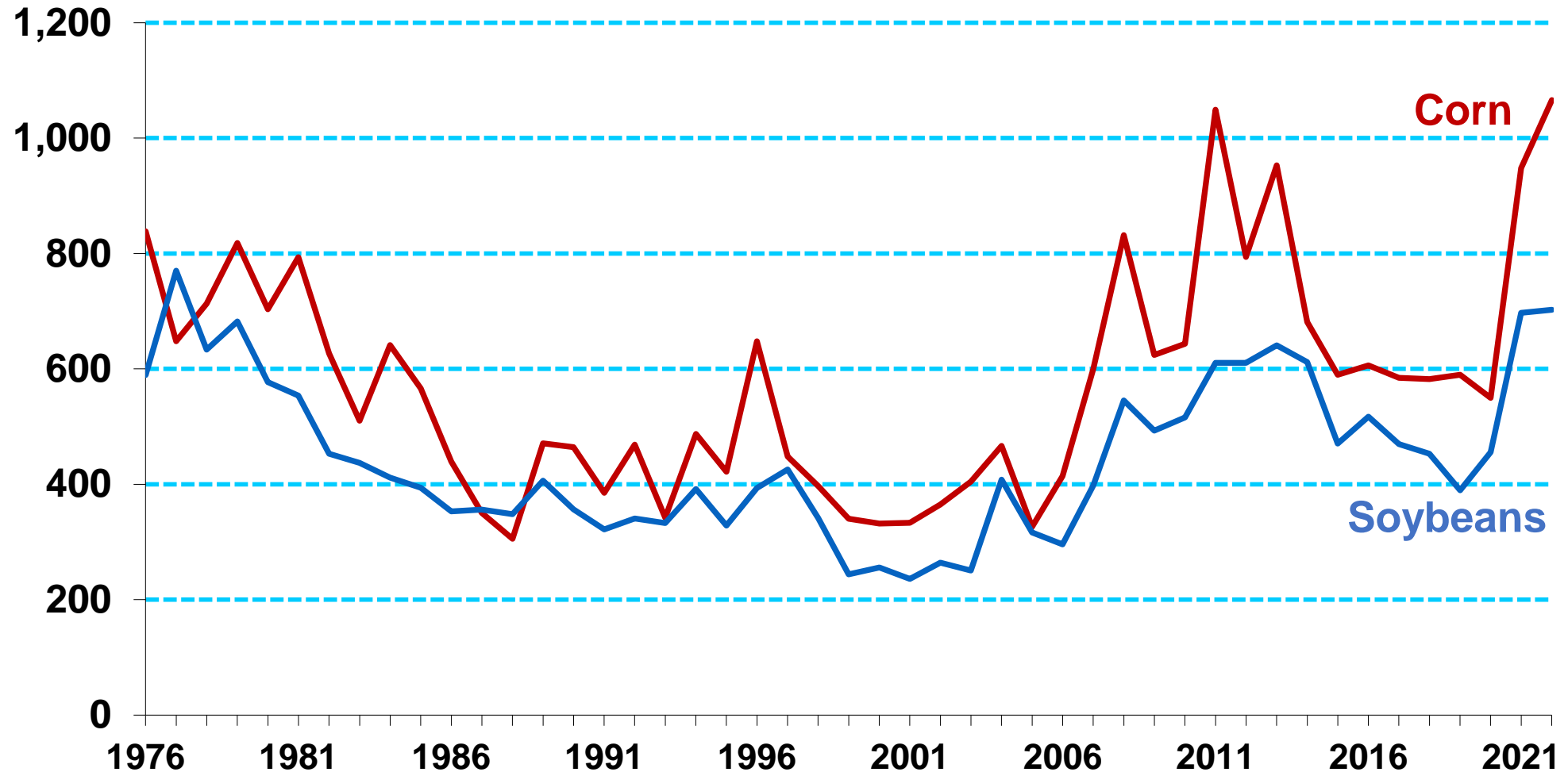
7th District Earnings to Price Ratio (left axis, 1981=1.0) vs. Real Return on 10-Year Treasury Bonds



Source: Calculated from Federal Reserve data

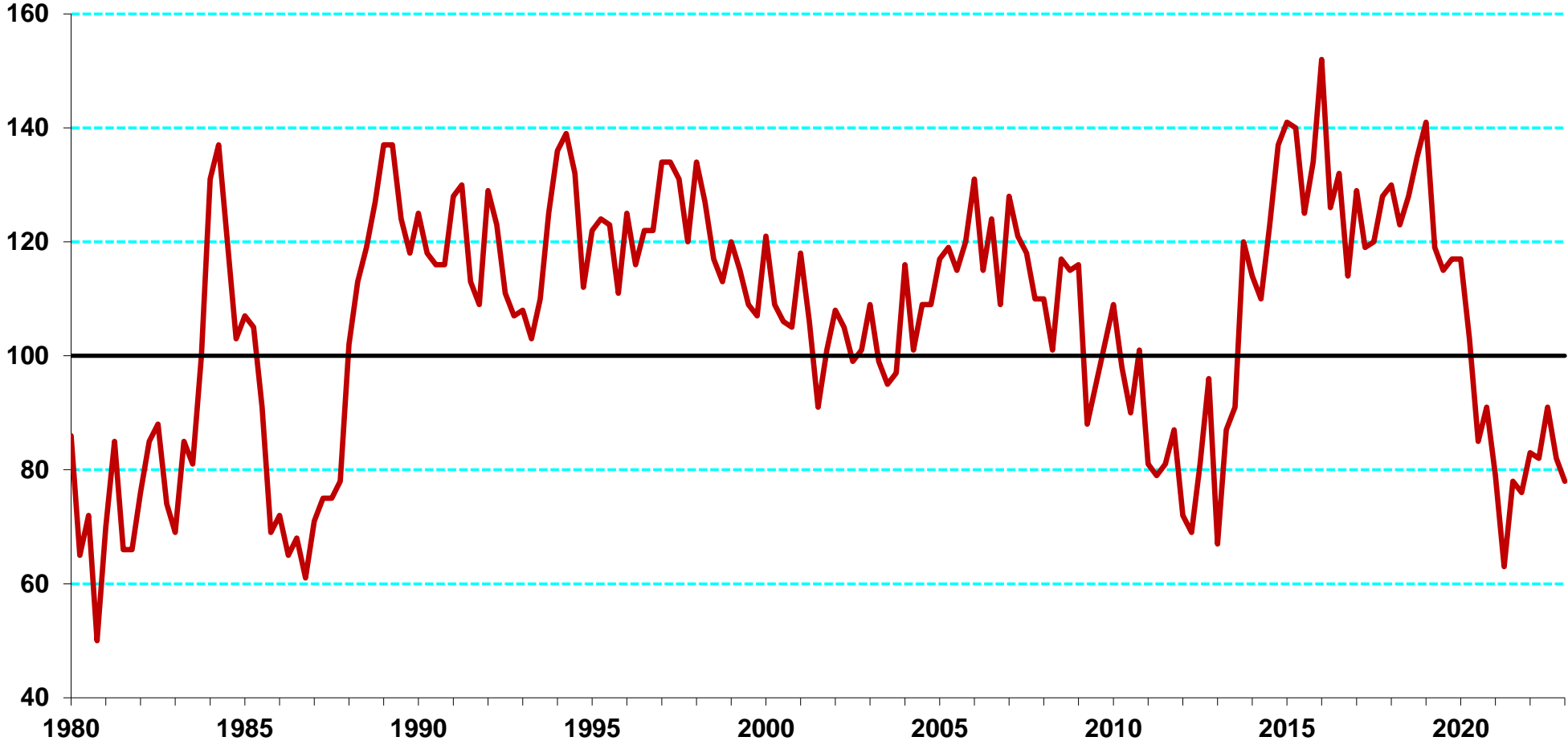
District real crop revenue more volatile than yields, with sharp increases in 2021-22

(\$/per acre, adj. by PCE for 2010)



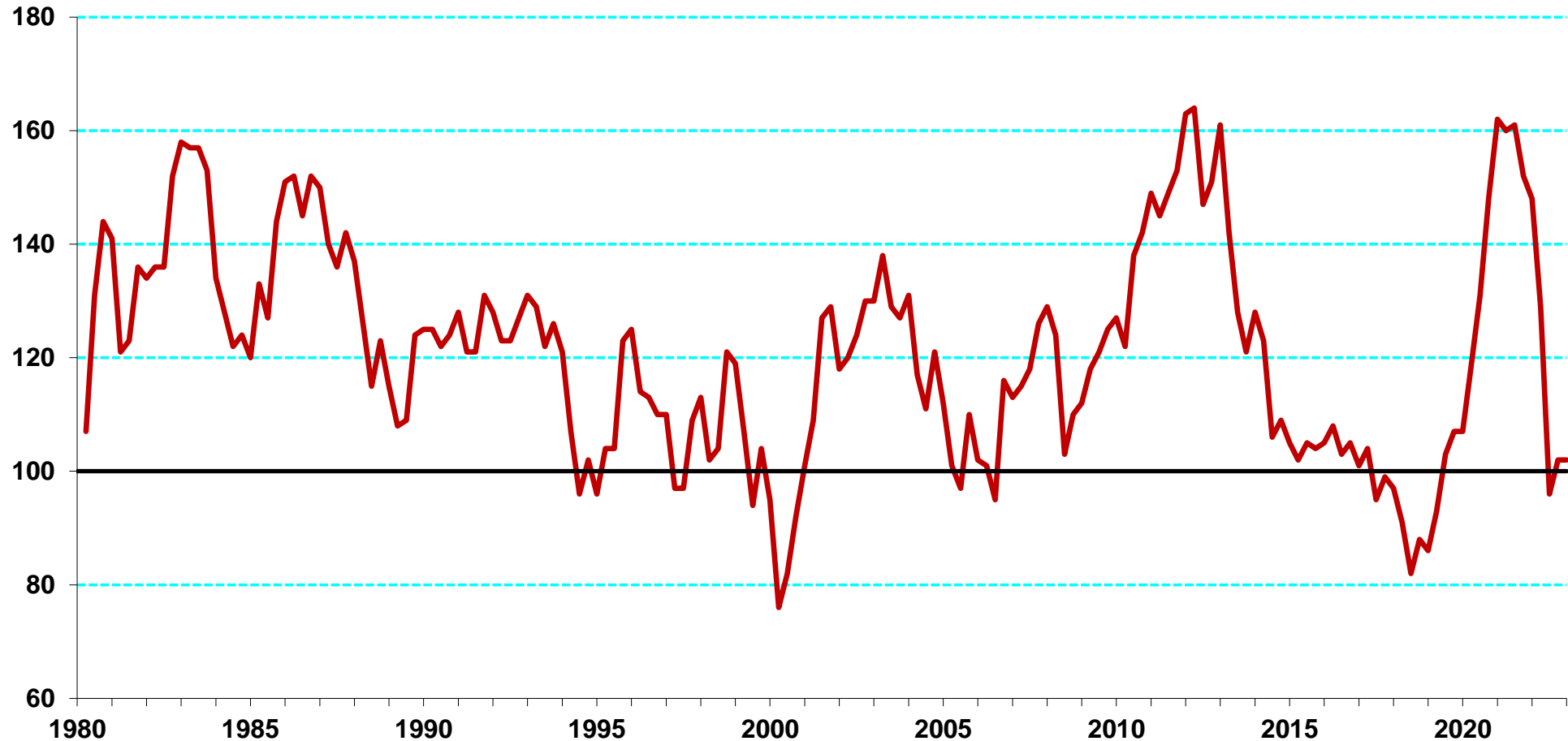
Source: Calculations using NASS and BEA data

Index of non-real-estate farm loan demand for the 7th Federal Reserve District



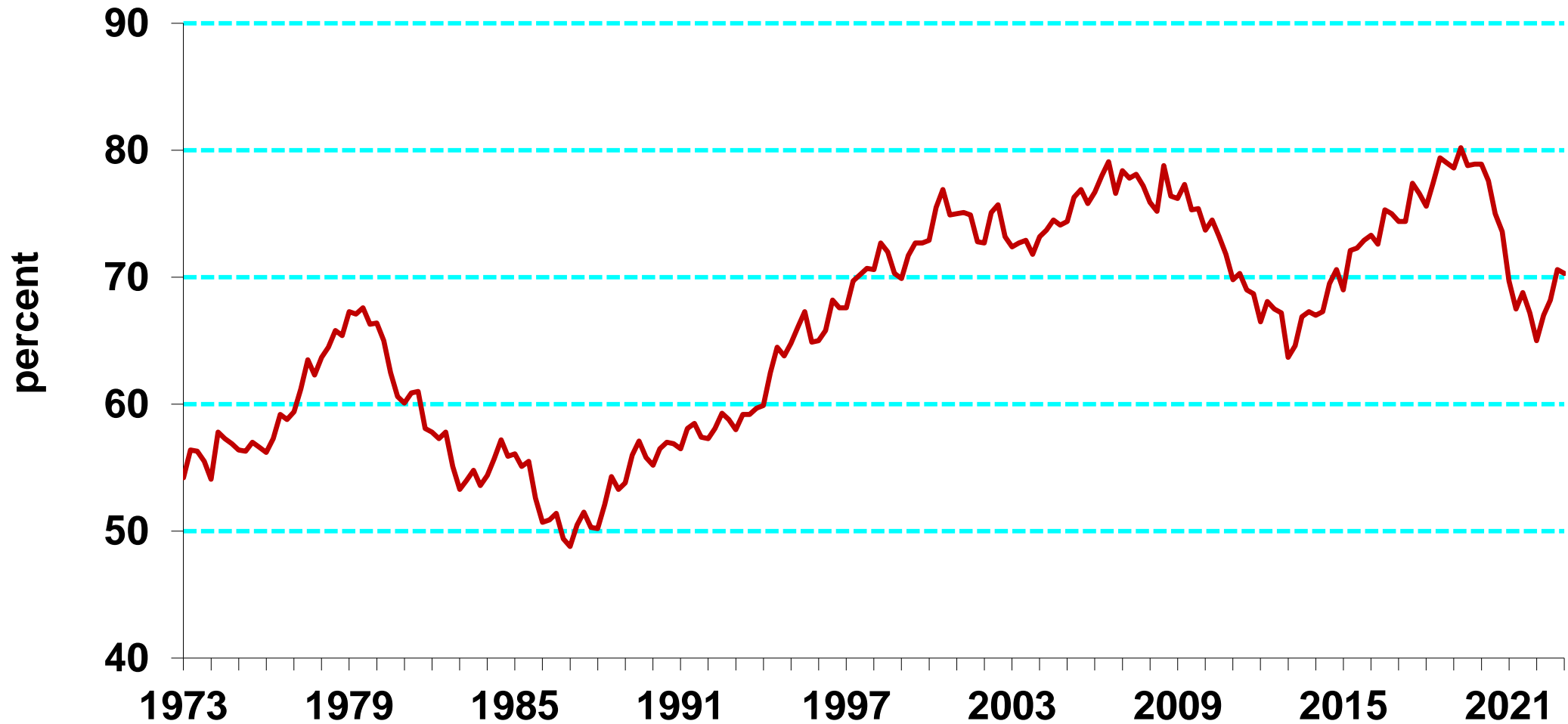
Source: Federal Reserve Bank of Chicago

Index of funds availability for the 7th Federal Reserve District



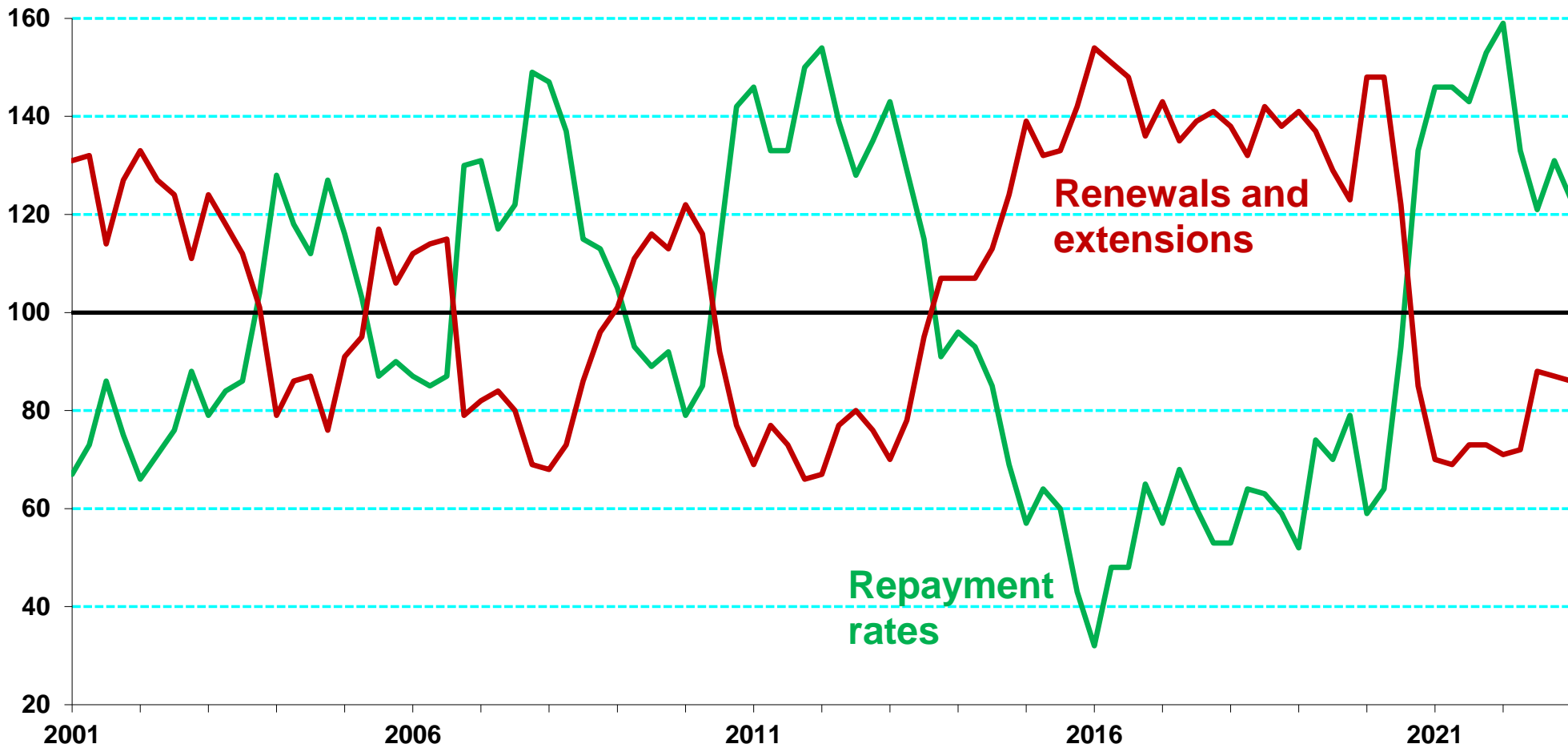
Source: Federal Reserve Bank of Chicago

7th District average loan-to-deposit ratio



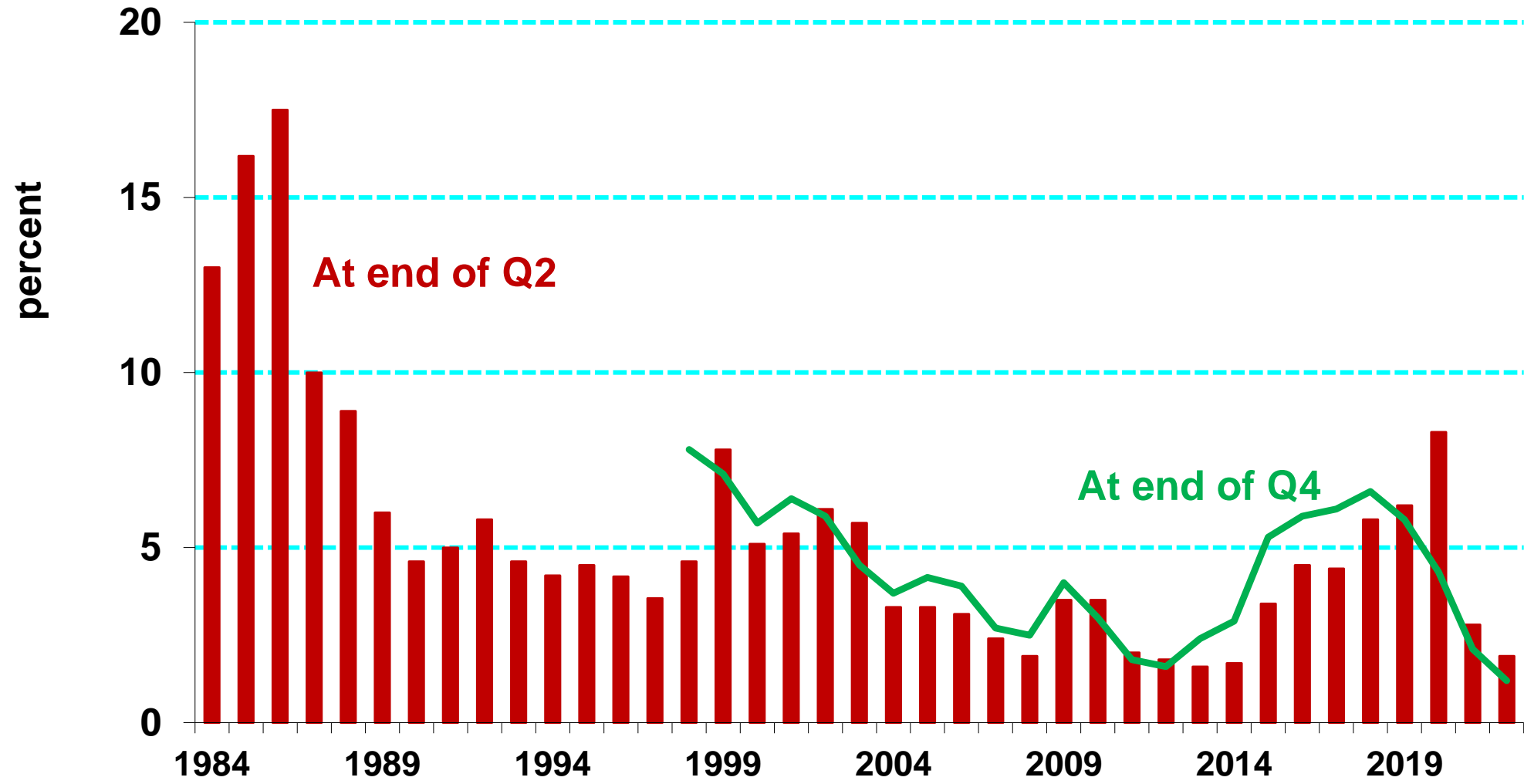
Source: Federal Reserve Bank of Chicago

Indexes of non-real-estate farm loan repayment and renewals & extensions for the 7th District



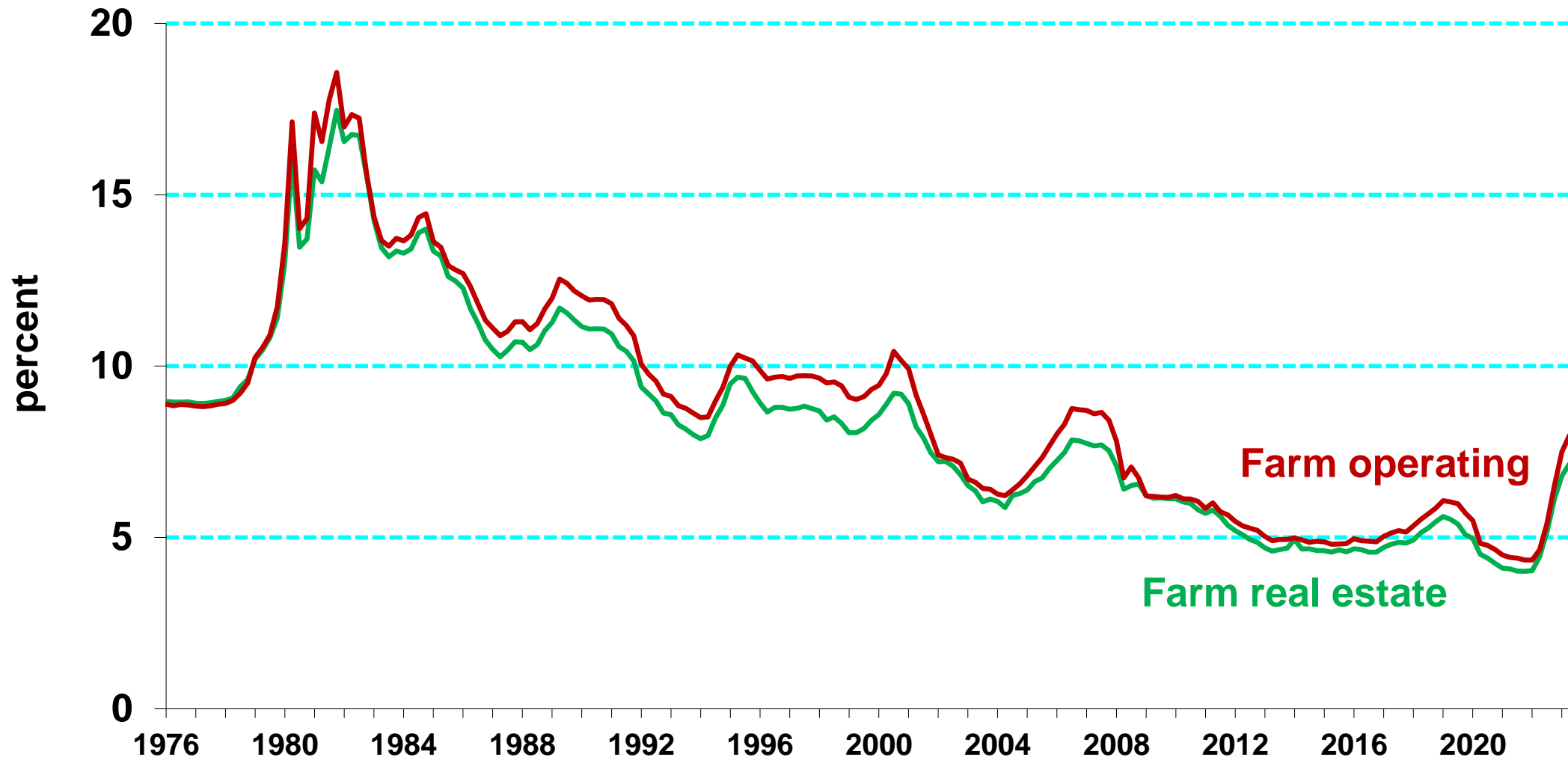
Source: Federal Reserve Bank of Chicago

Farm loan volume with “major” or “severe” repayment problems in 7th Federal Reserve District



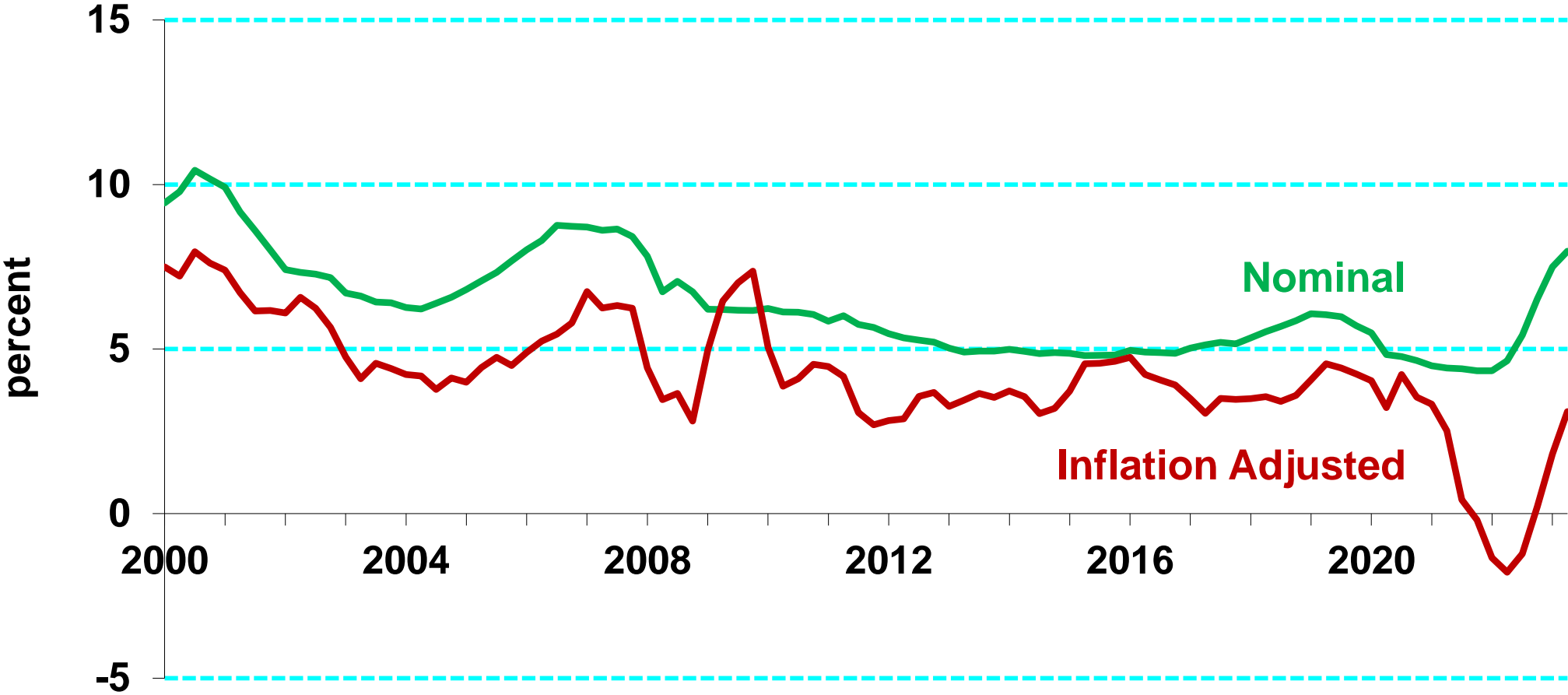
Source: Federal Reserve Bank of Chicago

Interest rates charged on new farm loans in the 7th Federal Reserve District



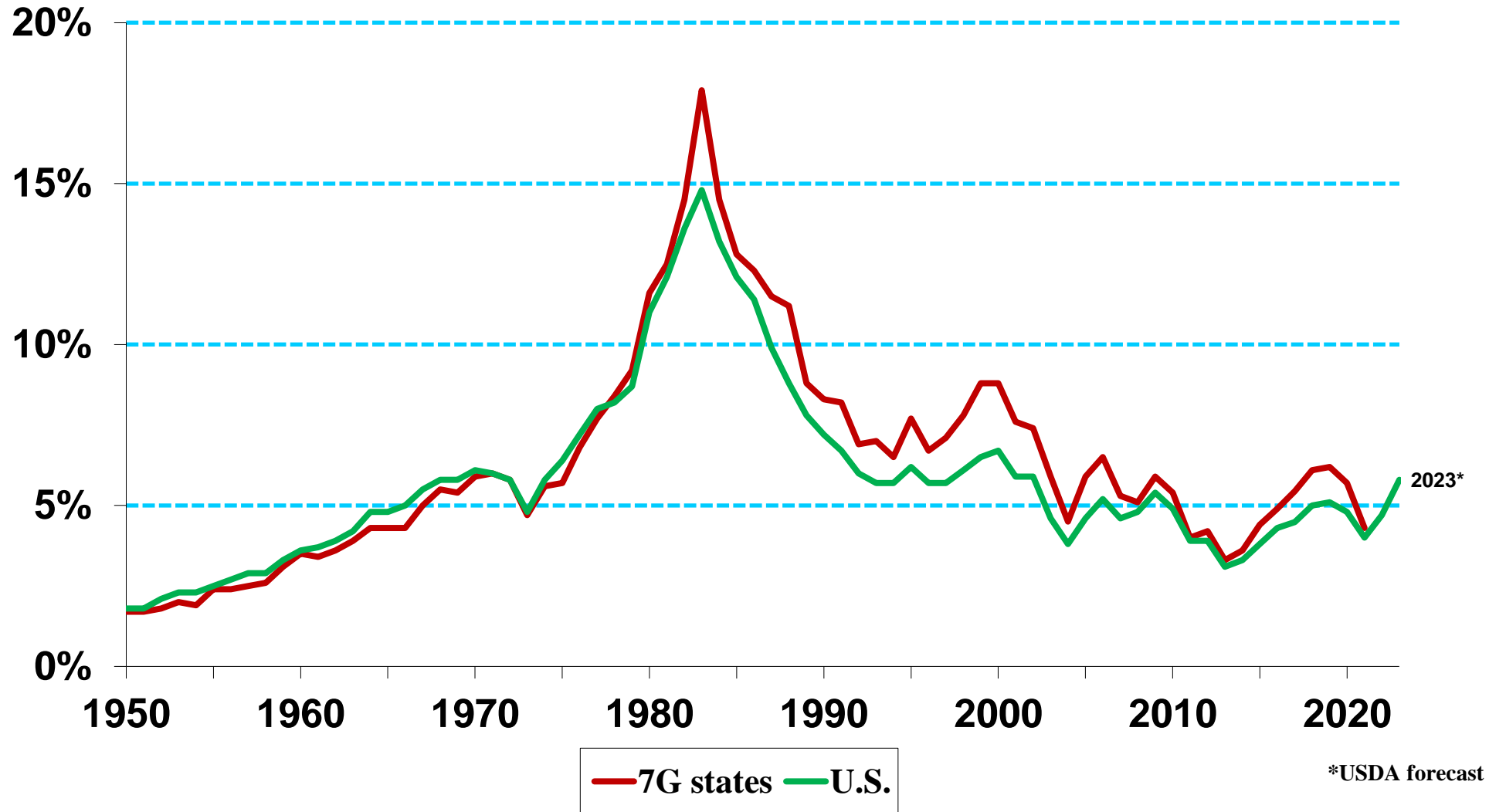
Source: Federal Reserve Bank of Chicago

Interest rates charged on new farm operating loans in the 7th Federal Reserve District



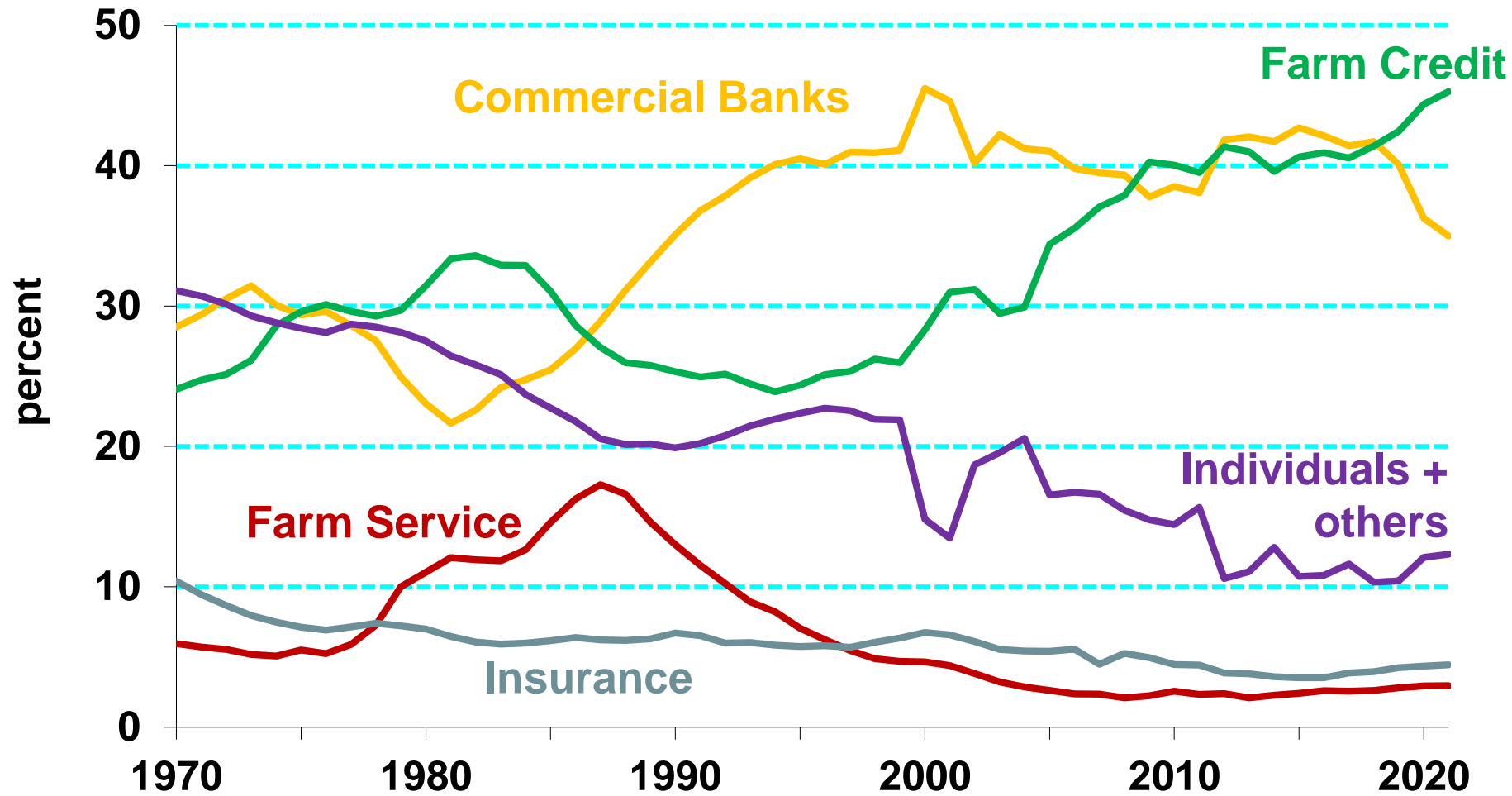
Source: Federal Reserve Bank of Chicago and Bureau of Economic Analysis

Interest expenses as share of agricultural value of production (% of total)



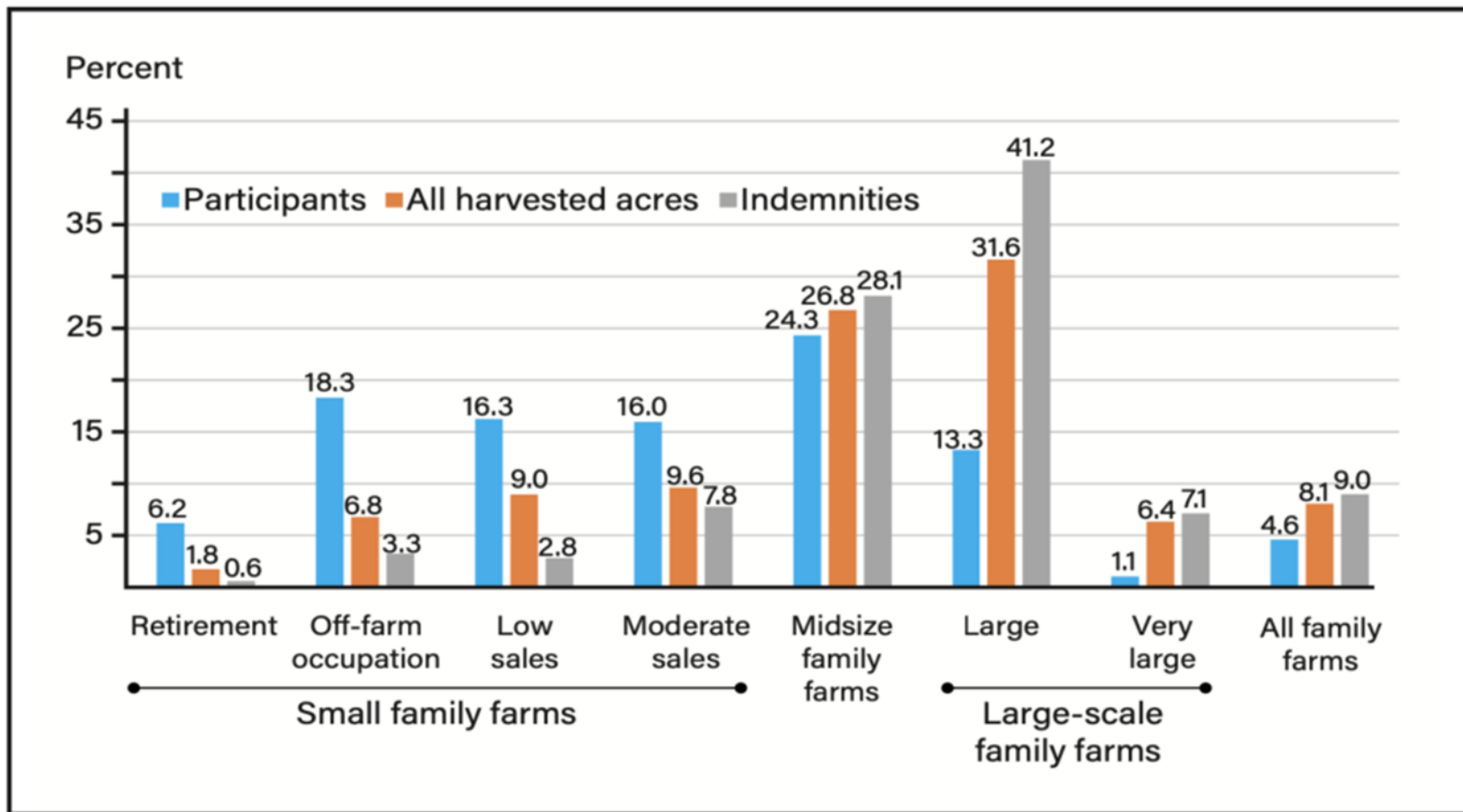
Source: Calculations based on data from USDA, Economic Research Service

Primary agricultural lenders by market share



Source: USDA, Economic Research Service

Federal crop insurance participants, harvested cropland, and indemnities, 2020



Note: The bars of the same color add to 100 percent.

Source: USDA, National Agricultural Statistics Service and USDA, Economic Research Service, 2020 Agricultural Resource Management Survey.

Financial indicators for the farm sector

- **Net farm income for 2023 will be down, yet should be decent**
- **Smaller boost from government spending**
- **Farm balance sheet improved**
- **Higher farm interest rates eating into cash flows**
- **Loan demand lagging as funds to lend about the same**
- **Credit conditions strengthened**
 - **Only 1.2% of loans with “major” or “severe” repayment problems**
 - **Loan renewals & extensions declined**

FARMTECH LANDSCAPE 2020

