

Grain Farm Returns for 2021 and 2022



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I
ILLINOIS
Agricultural &
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COLLEGE OF AGRICULTURAL, CONSUMER
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Dale Lattz



Bob Rhea

What do you expect corn prices to average for the 2022 crop?

- Below \$4.00
- Between \$4.00 and \$4.50
- Between \$4.50 and \$5.00
- Between \$5.00 and \$5.50
- Over \$5.50

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Topics

- Grain farm income outlook
- Prices and costs outlook for 2022
- Cash rents
- Variable cash lease

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Grain Farm Income

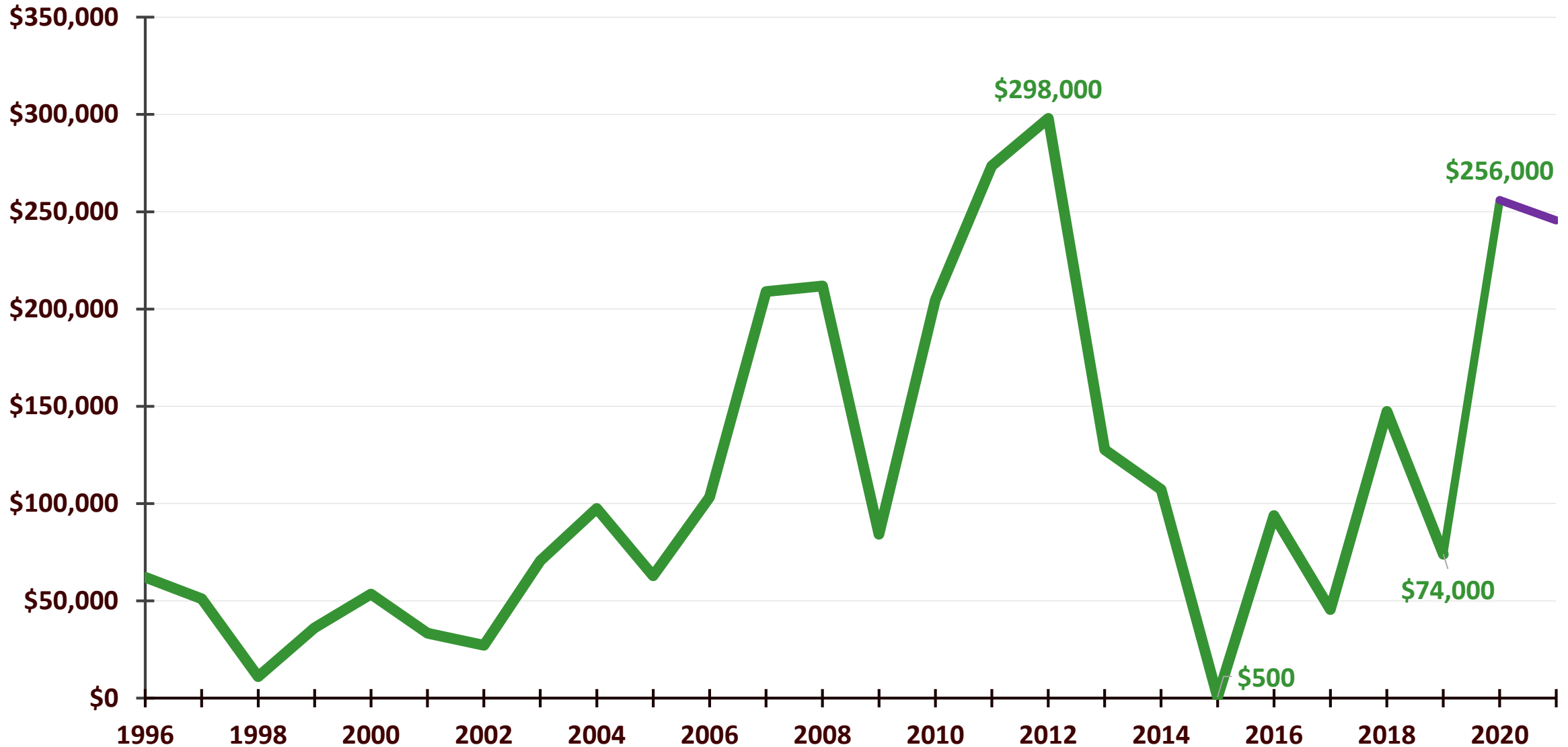
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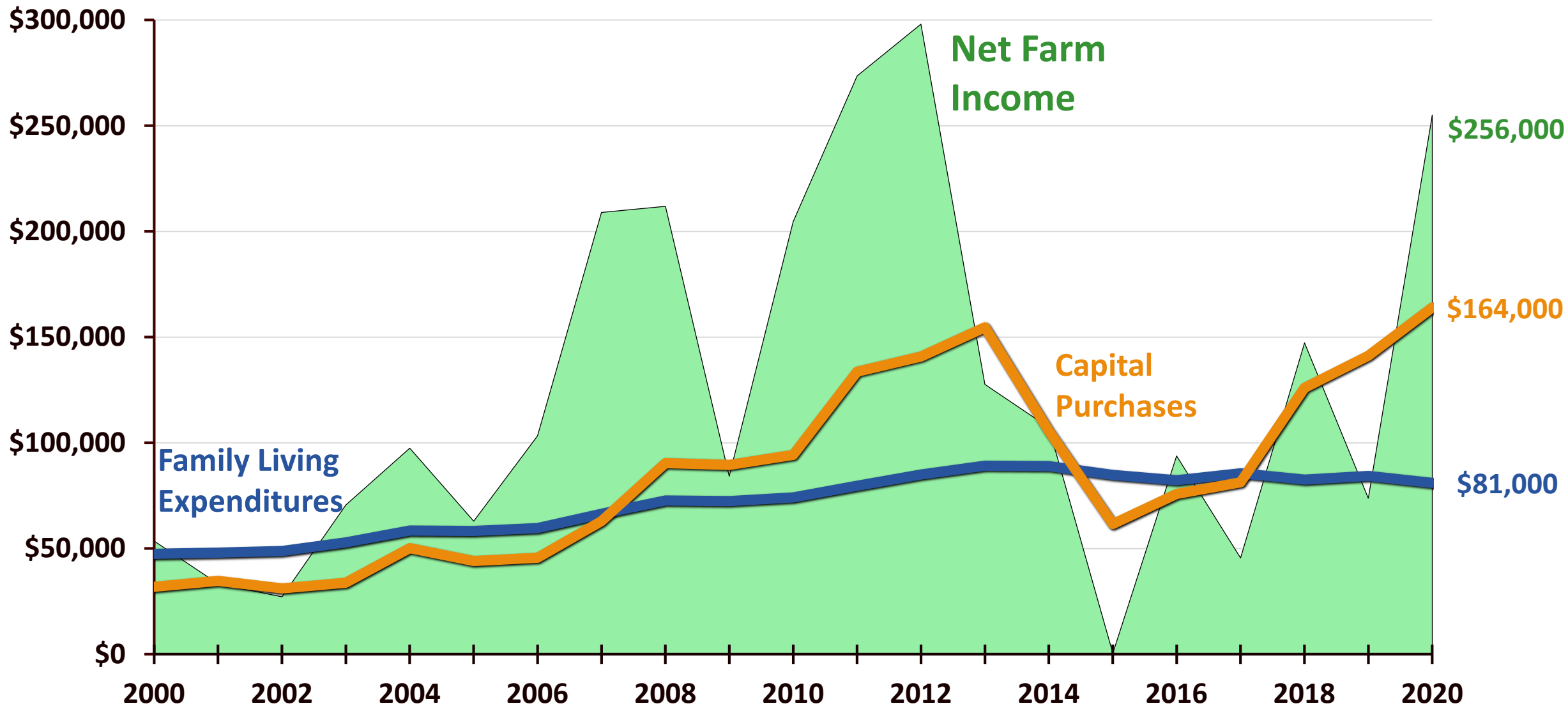
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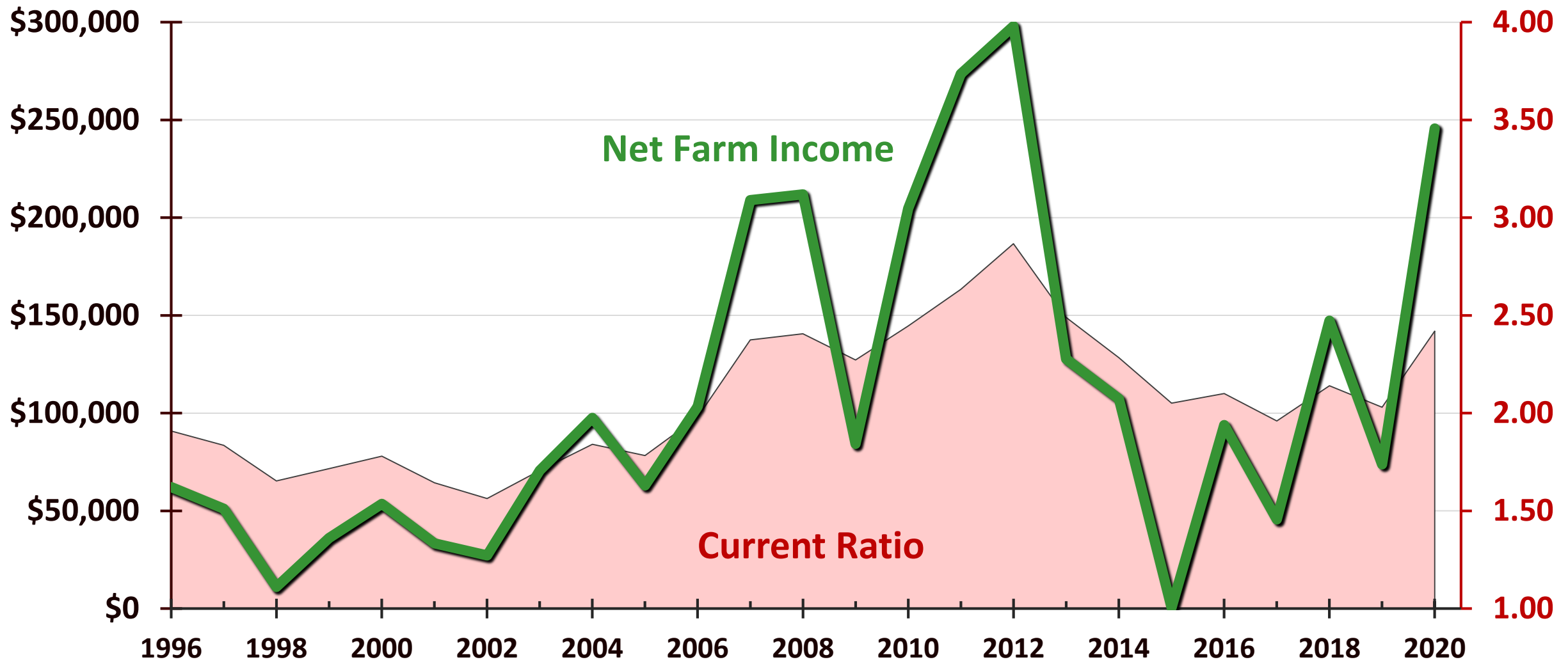
Average Net Incomes of Grain Farms Enrolled in Illinois Farm Business Farm Management (FBFM), 1996 to 2021P



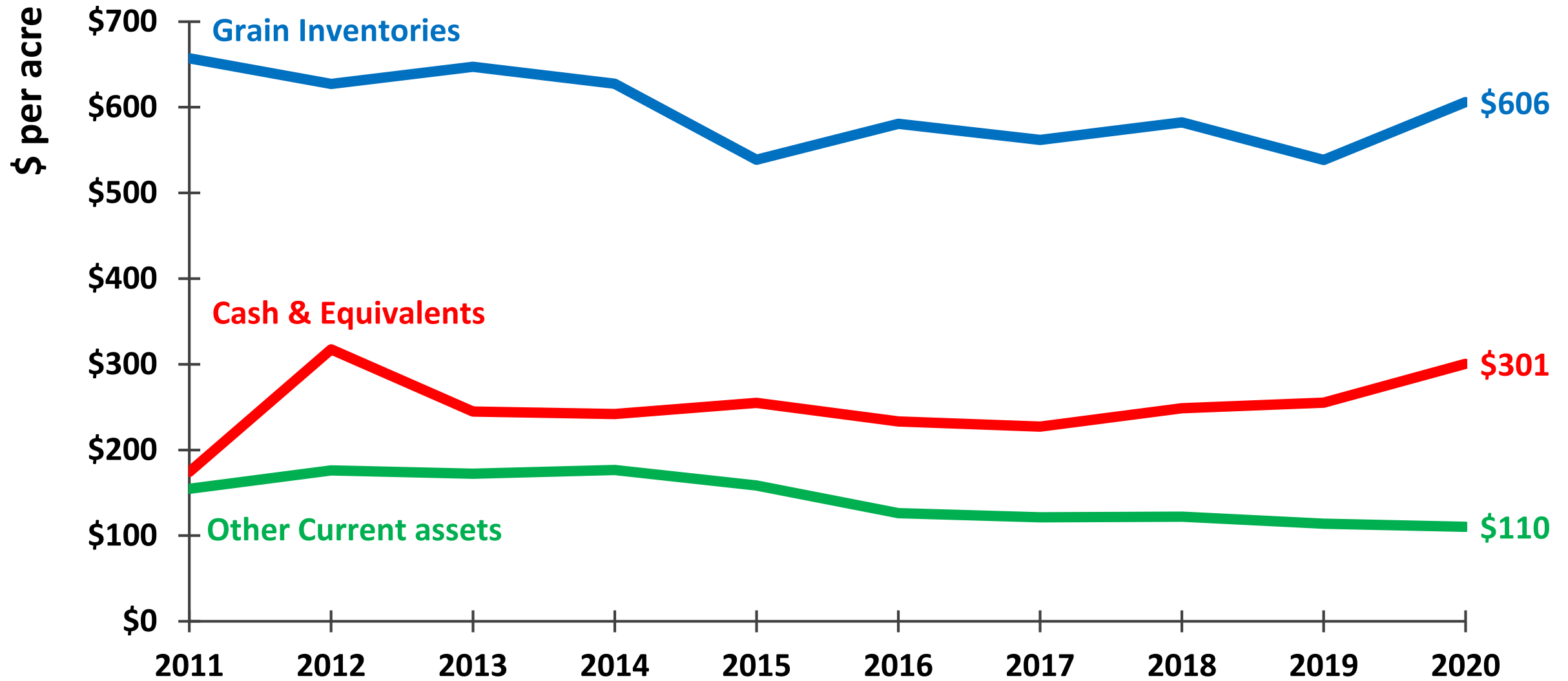
Grain Farms Enrolled in Illinois FBFM



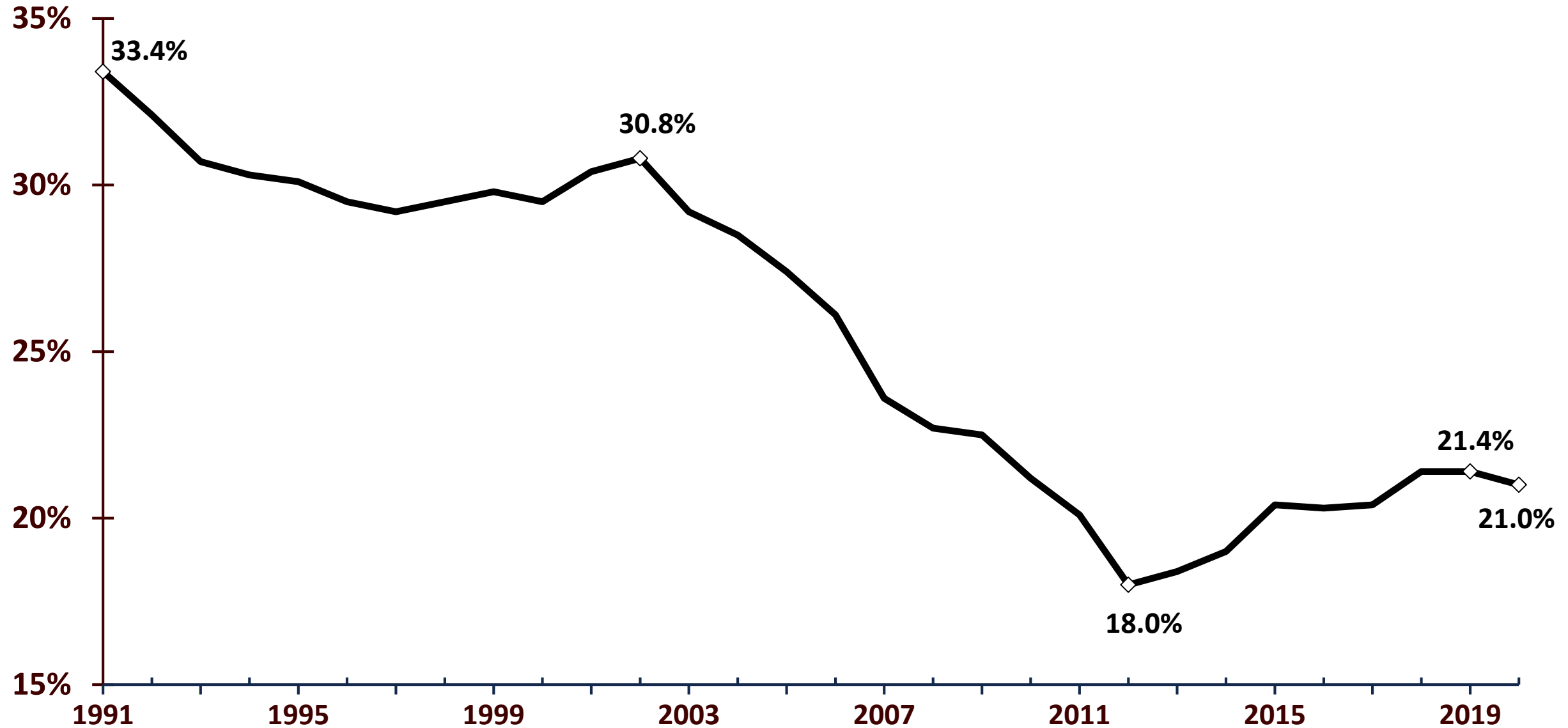
Current Ratio and Net Farm Income on Grain Farm Enrolled in Illinois FBFM



Components of Current Assets

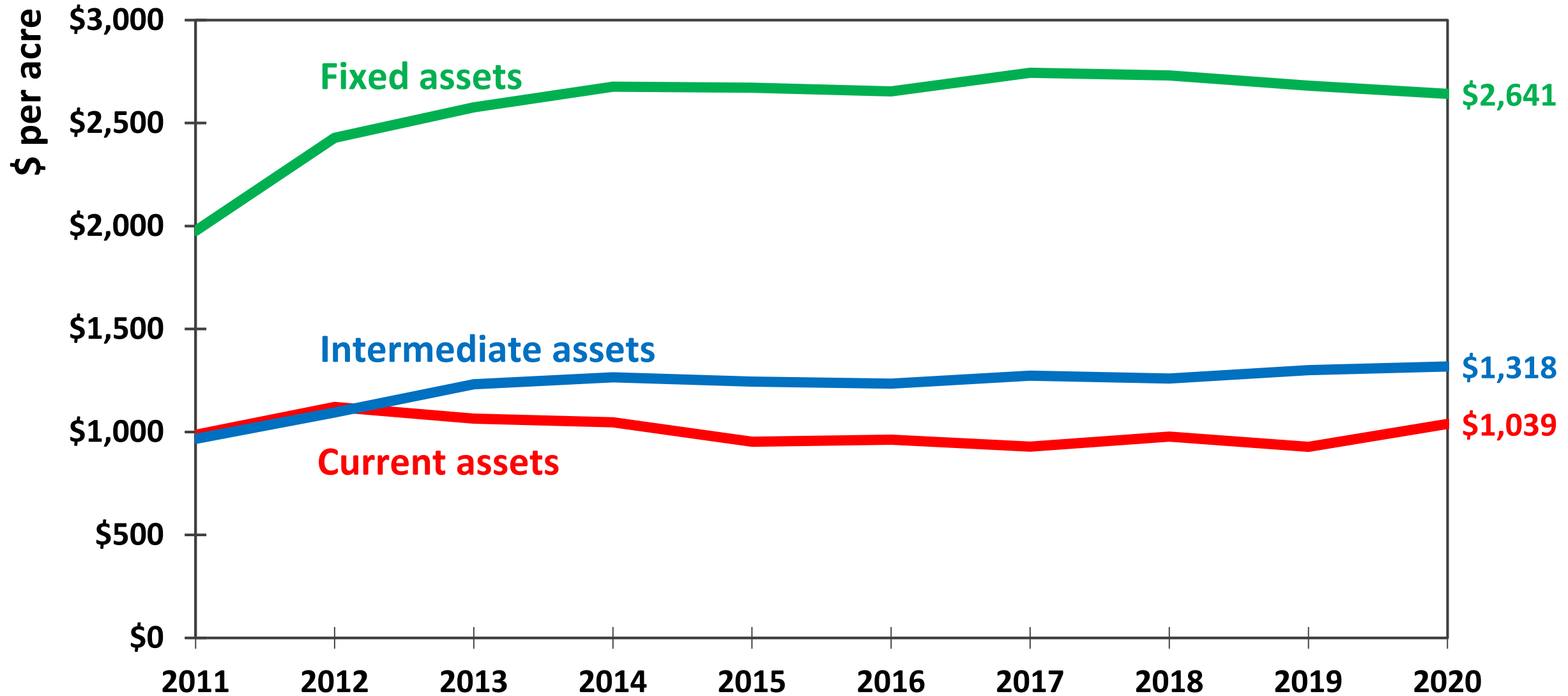


Debt-to-Asset Ratio (Illinois Grain Farms)

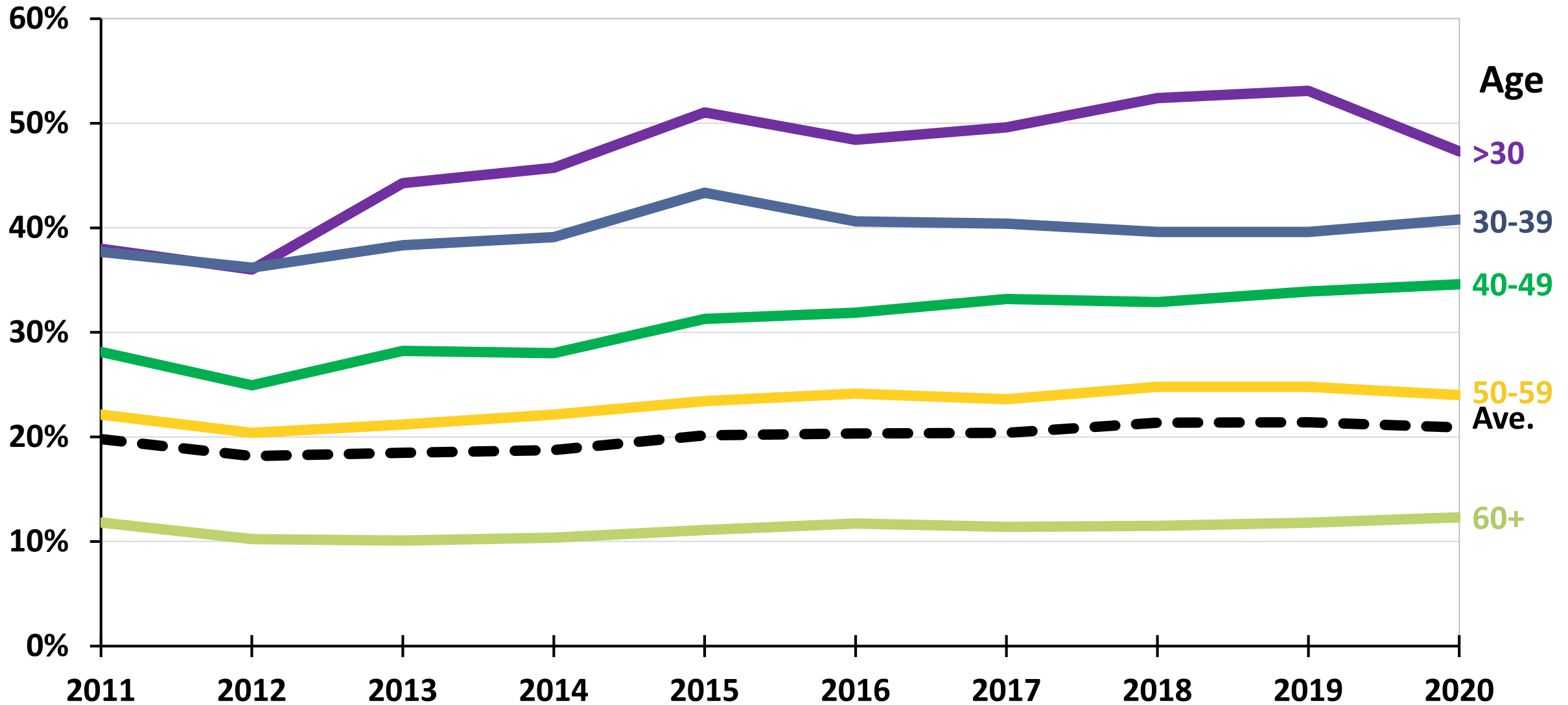


Source: Illinois Farm Business Farm Management

Components of Total Assets



Debt to Asset Ratio by Age





Price and Cost Outlook for 2022

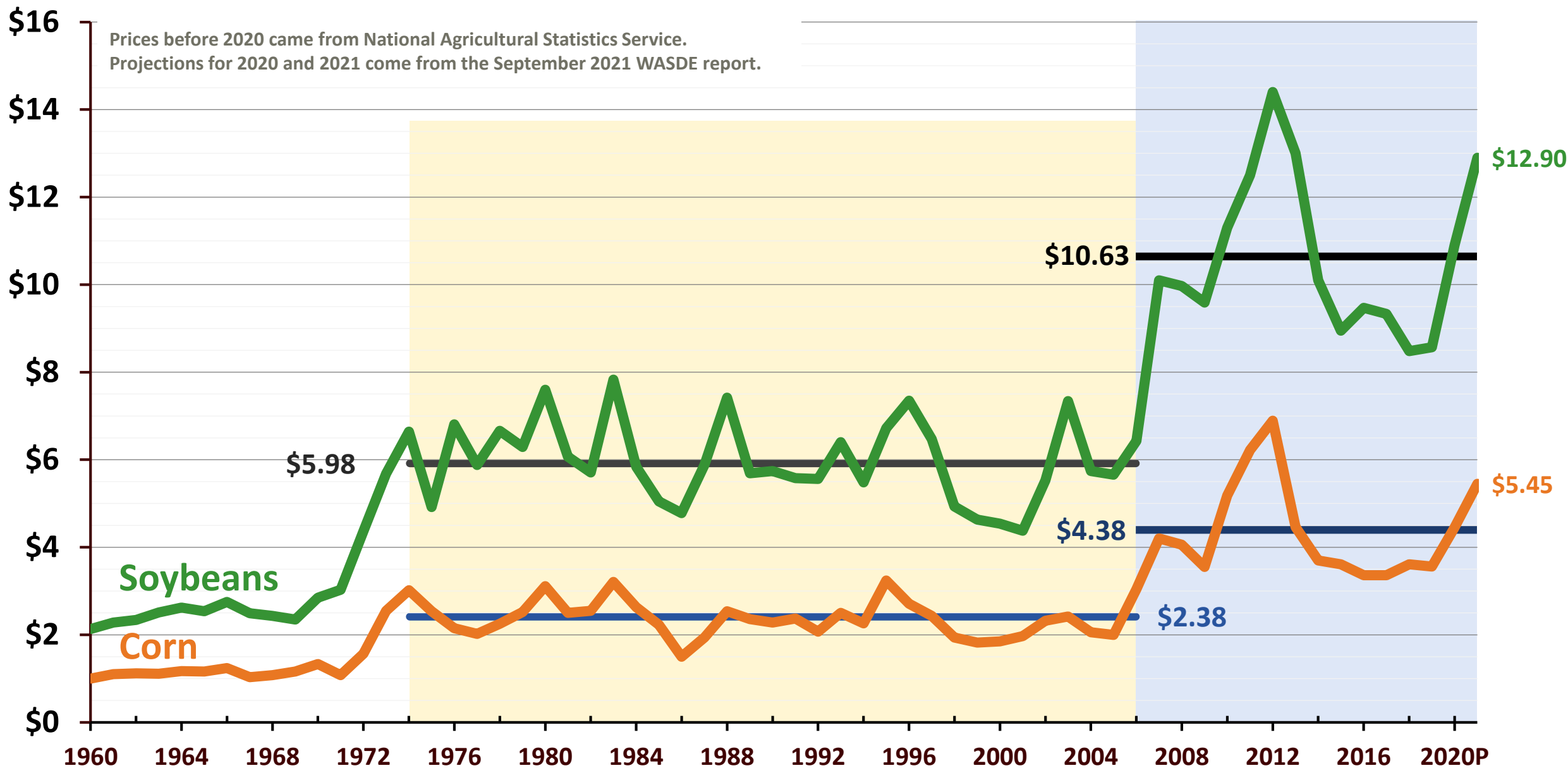
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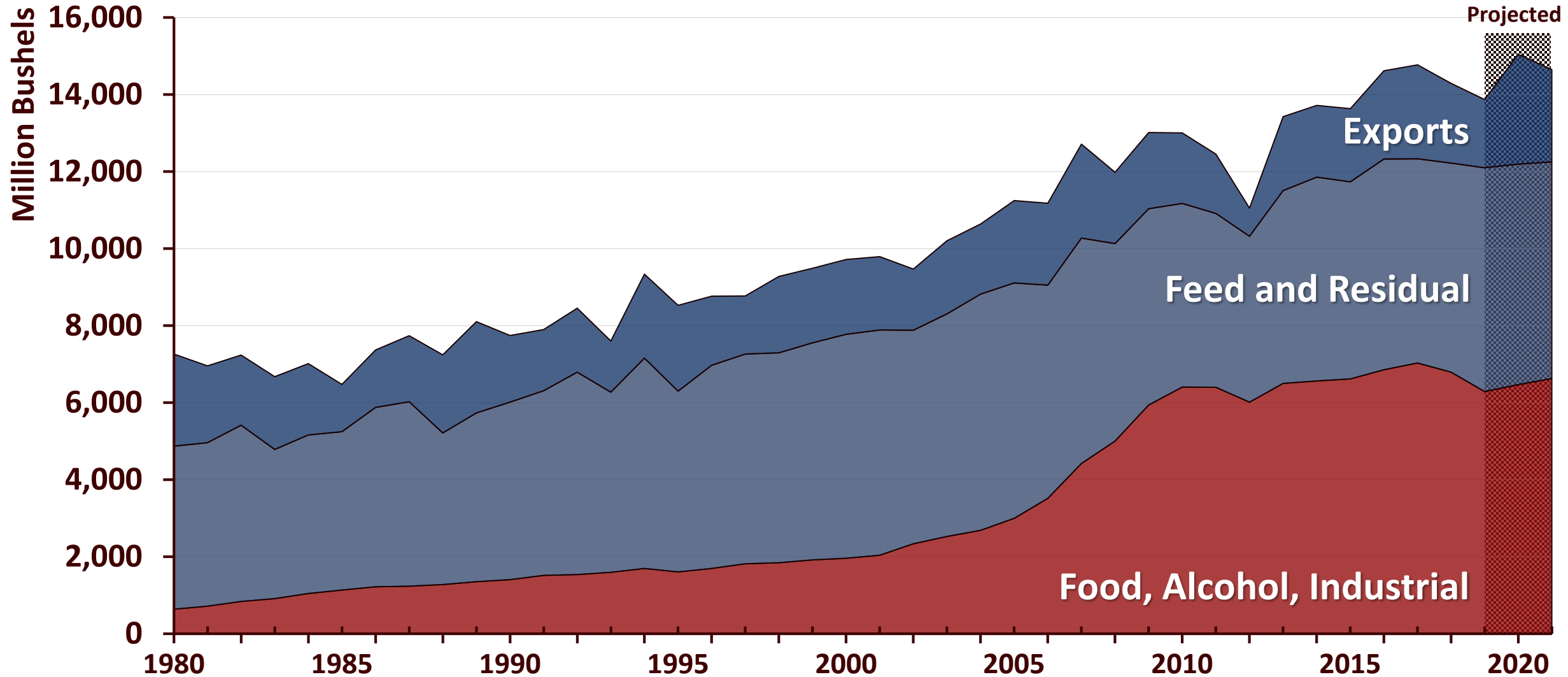
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U.S. Market Year Average Prices for Corn and Soybeans 1960 to 2021P

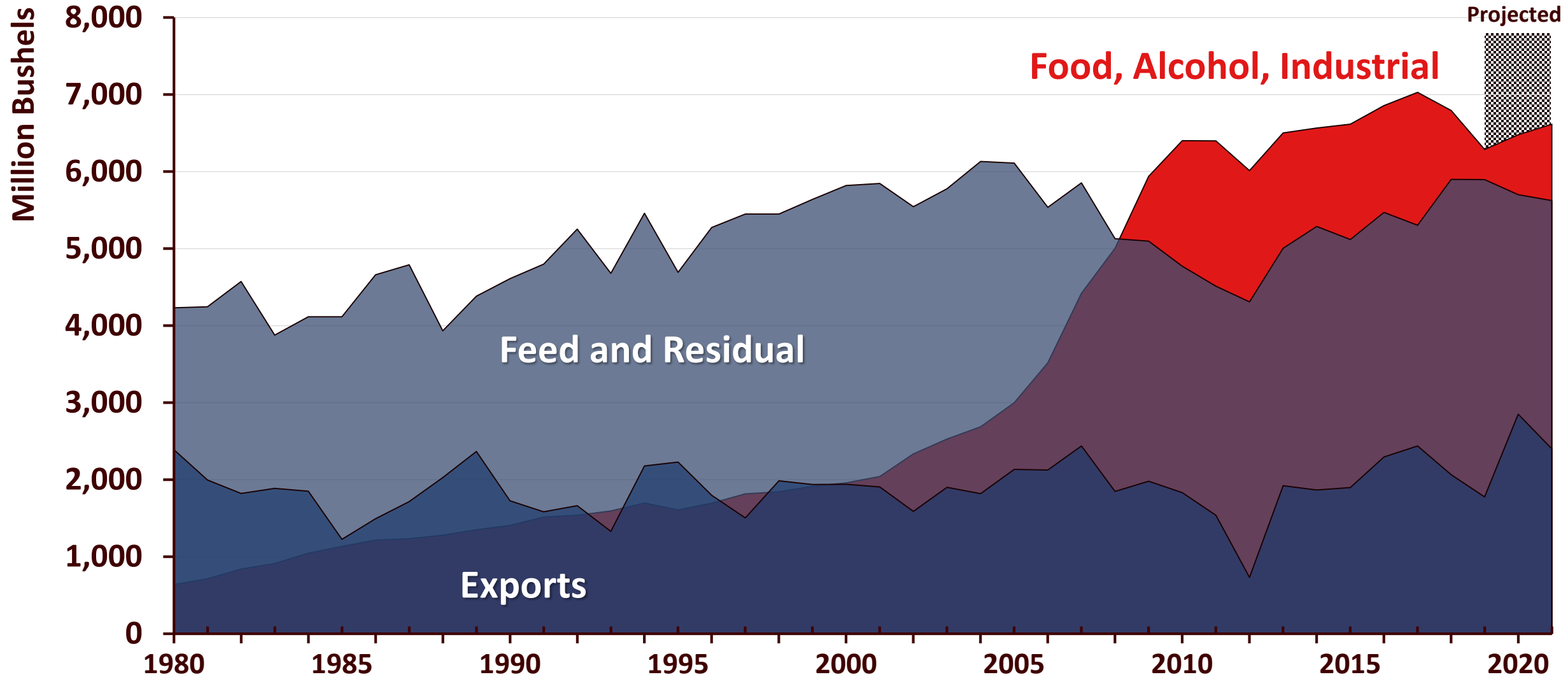


Corn Use in the U.S., 1980 to 2021P



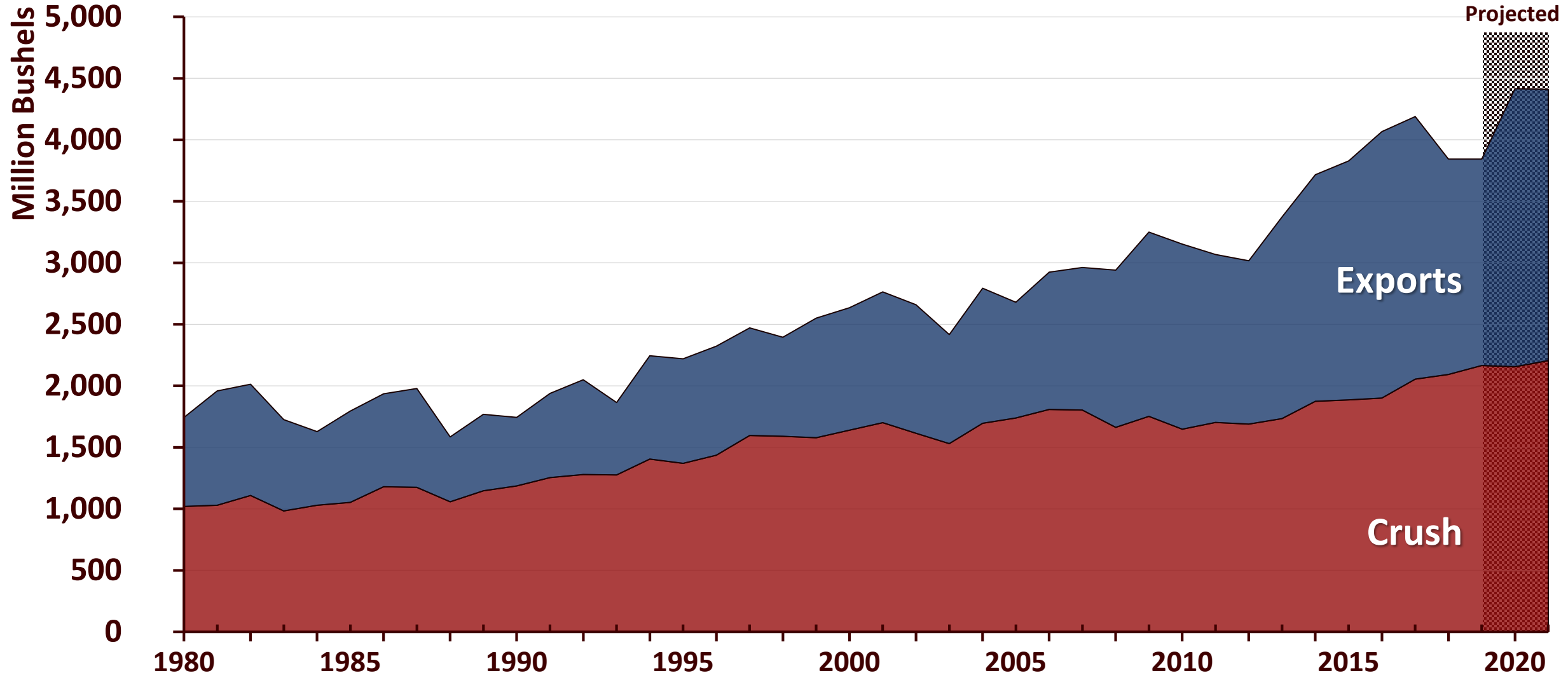
Source: Historical data (1980 - 2018) from Economic Research Service, USDA, 2019 and 2020 data from April 2021, World Agricultural Supply and Demand Estimates report

Corn Use in the U.S., 1980 to 2021P



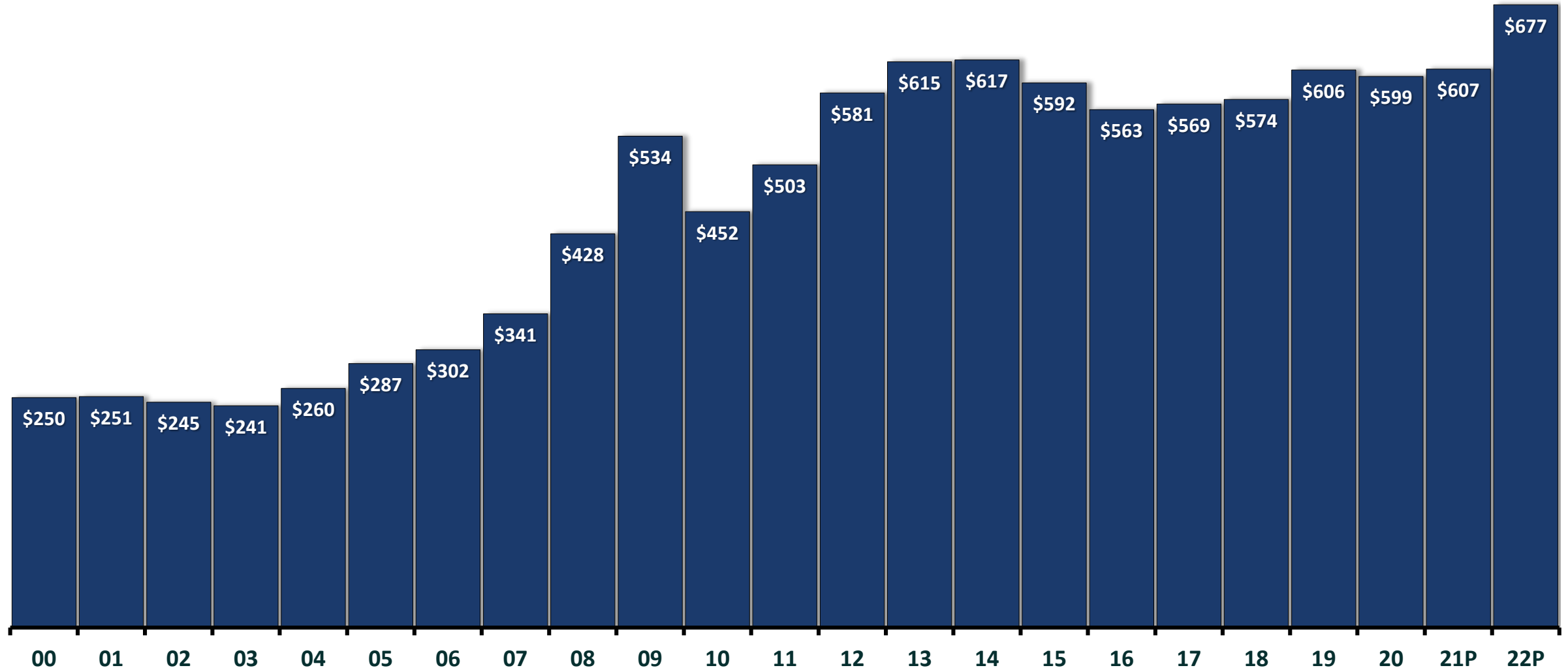
Source: Historical data (1980 - 2018) from Economic Research Service, USDA, 2019 and 2020 data from April 2021, World Agricultural Supply and Demand Estimates report

Soybean Use in the U.S, 1980 to 2021P



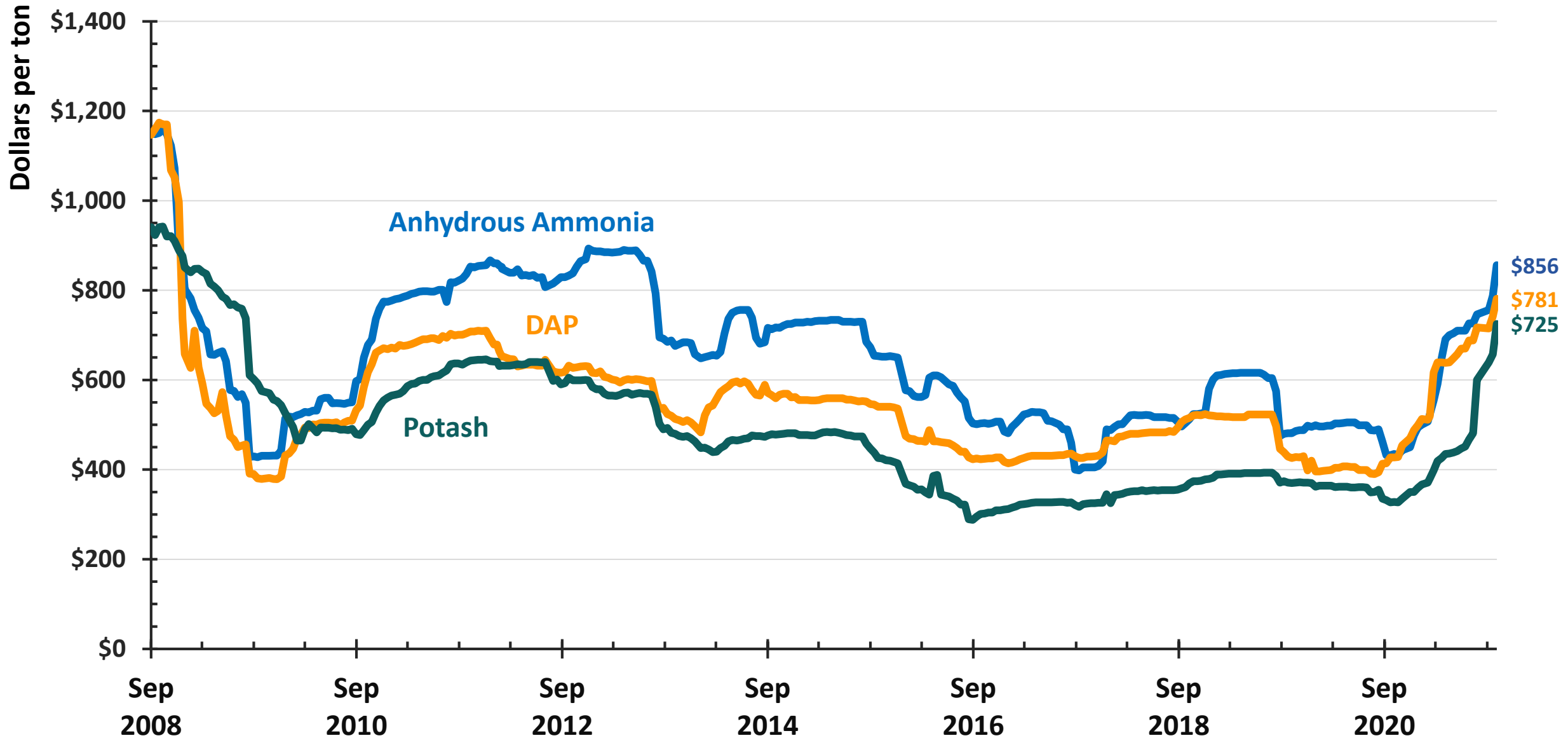
Source: Historical data (1980 - 2018) from Economic Research Service, USDA, 2019 and 2020 data from April 2021, World Agricultural Supply and Demand Estimates report

Non-land Cost to Produce Corn



Source: Data summarized from farms enrolled in Illinois Farm Business Farm Management (FBFM)

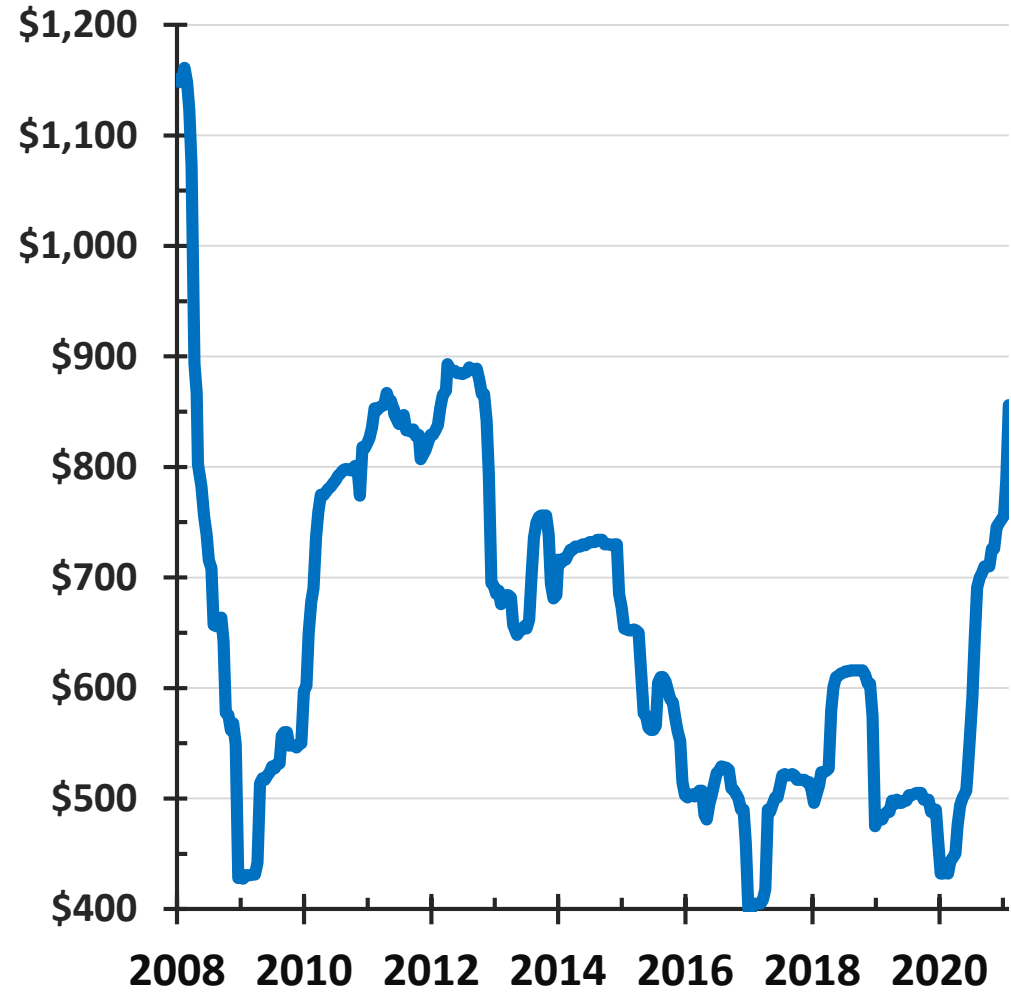
Fertilizer Prices in Illinois From 2008 To 2021



Source: US Department of Agriculture, Agricultural Marketing Service

Anhydrous Ammonia Prices currently are \$850 per ton. What will they be in spring?

- Less than \$700
- \$700 to \$800
- \$800 to \$900
- \$900 to \$1,000
- Above \$1,000



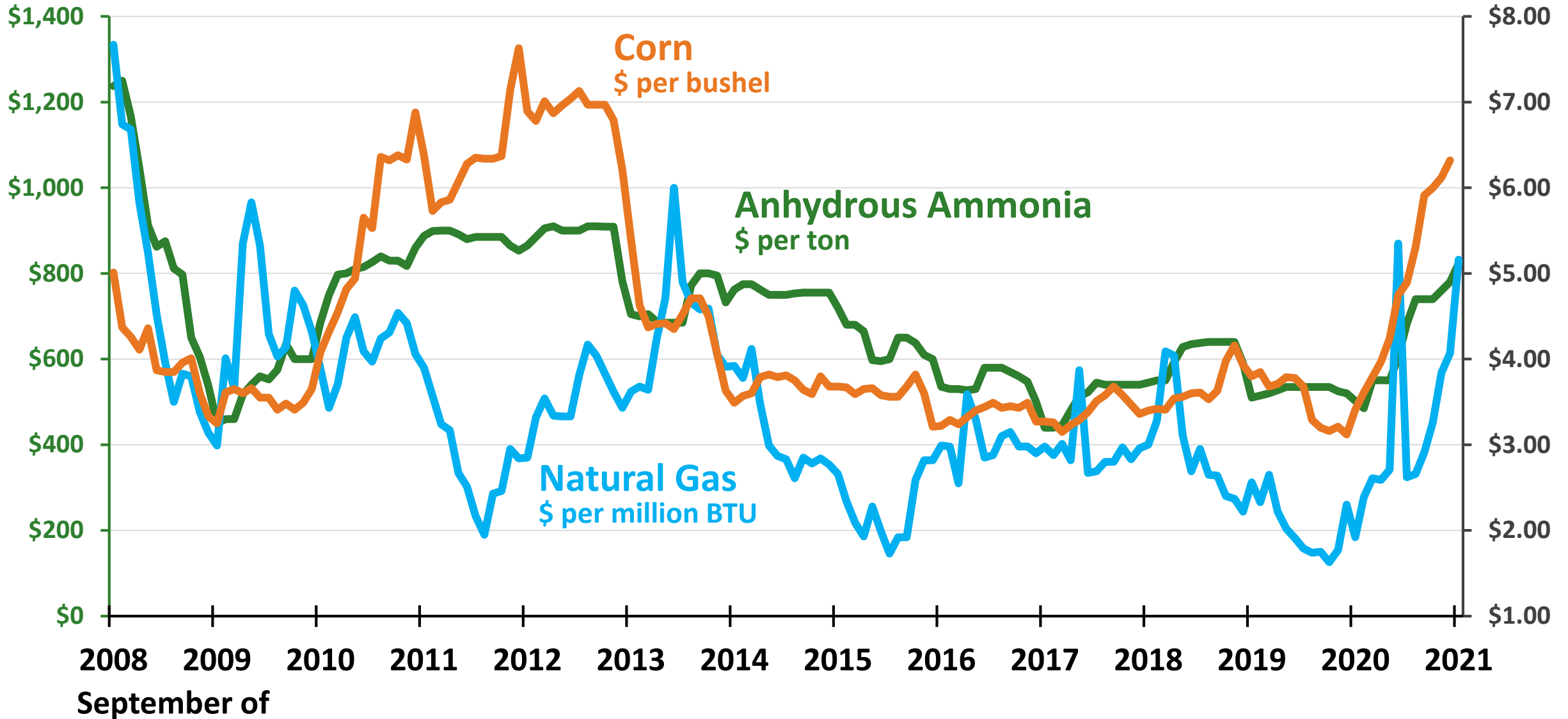
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Anhydrous Ammonia and Henry Hub Natural Gas Price

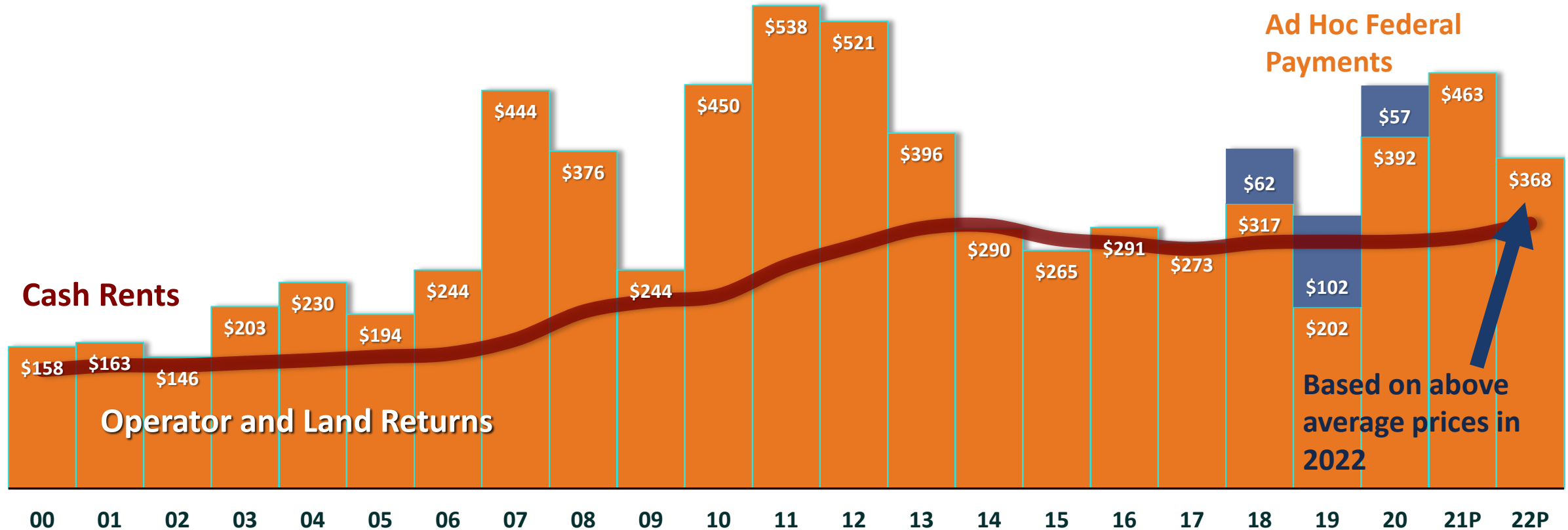


Operator and Land Returns and Cash Rents

High-Productivity Farmland in Central Illinois, 2000 to 2021P



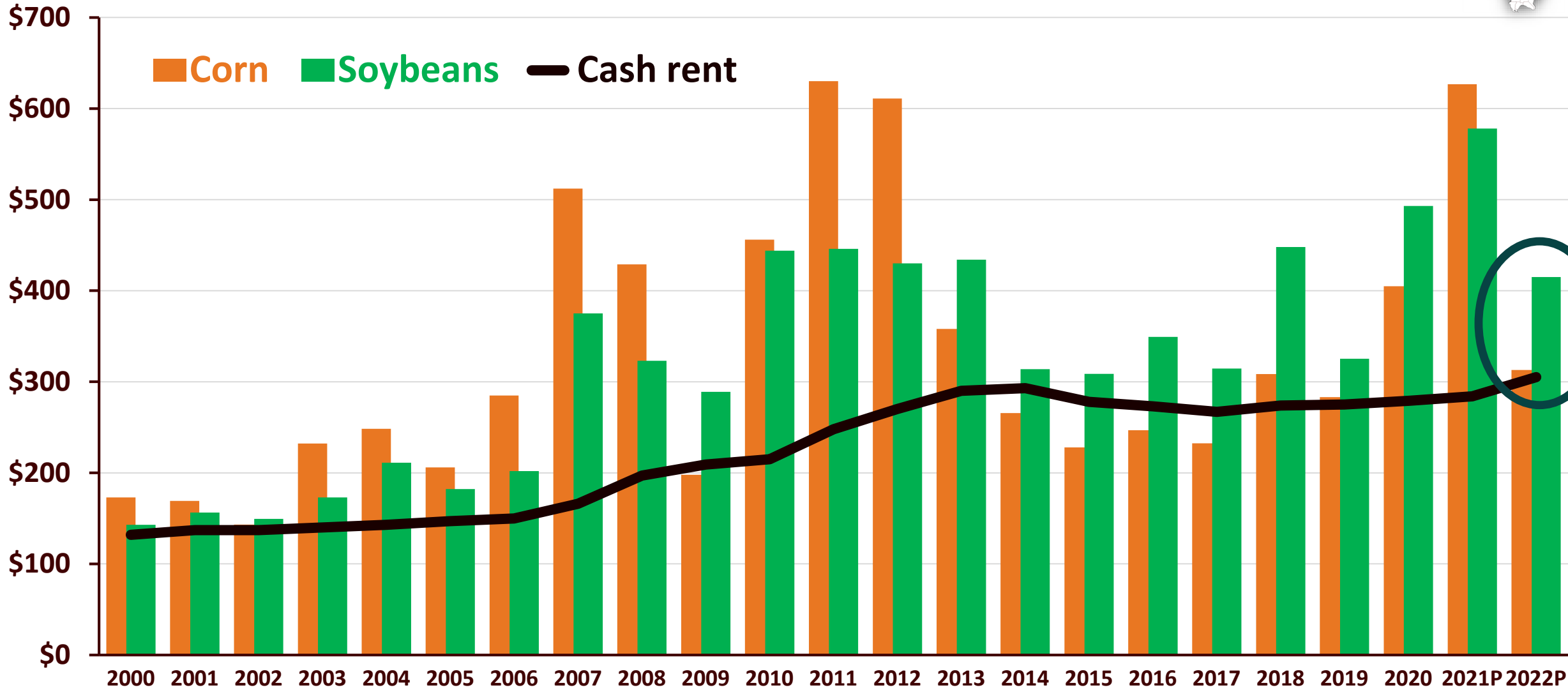
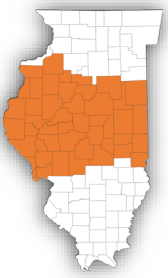
Ad hoc payments helped to achieve break-even returns in 2019 and 2020***
 Flat rents and other costs



Based on above average prices in 2022

Operator and Land Returns for Corn and Soybeans

Cash Rents on High-Productivity Farmland in Central Illinois



Will there be a ad hoc payments if corn prices are below \$4.00 and soybean prices are below \$10

- Yes, definitely
- Could be
- No way

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Cash Rents



Farmland Leased in Illinois

In Illinois, 50% of farmland is rented (ERS, 2016)

Illinois has largest rented percent in U.S.

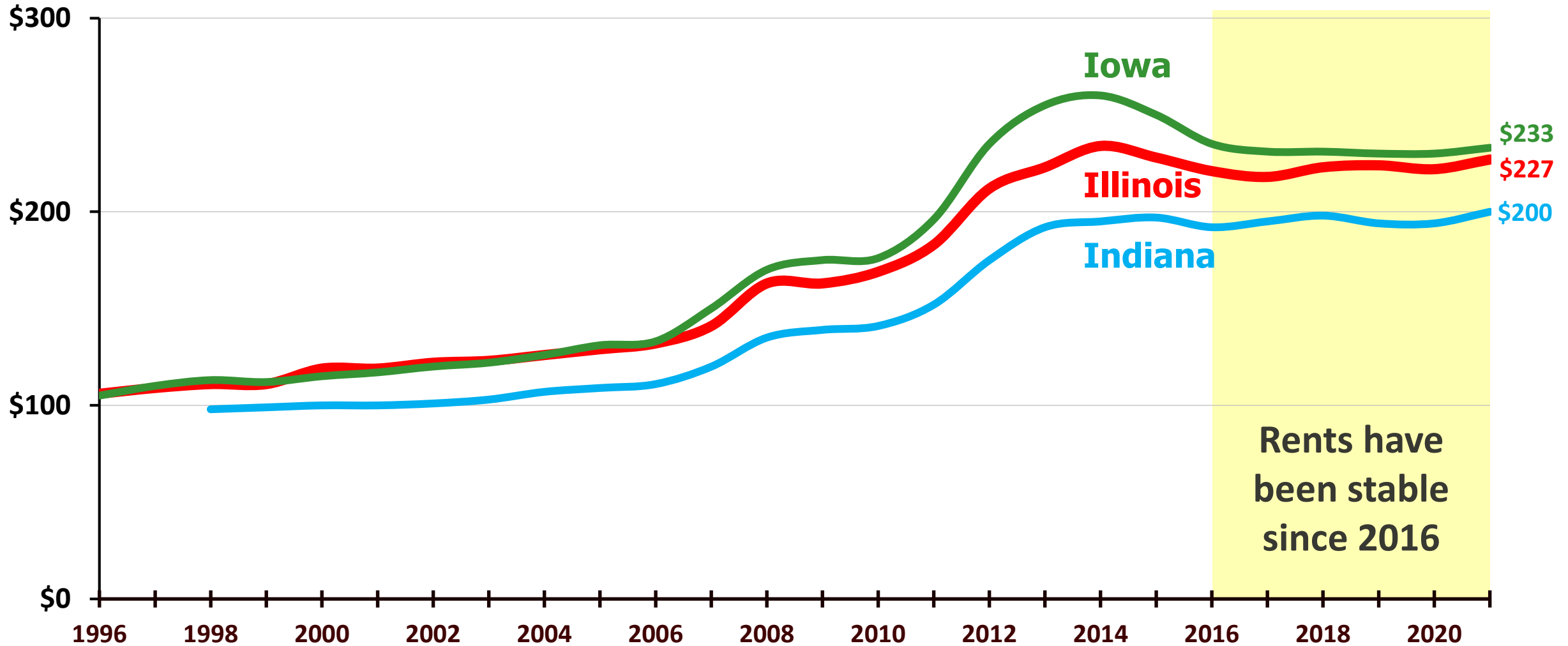
- Indiana, 45%
- Iowa, 41%
- Ohio, 37%

Larger grain farms tend to rent more

Tenure on grain farms in FBFM, 2019

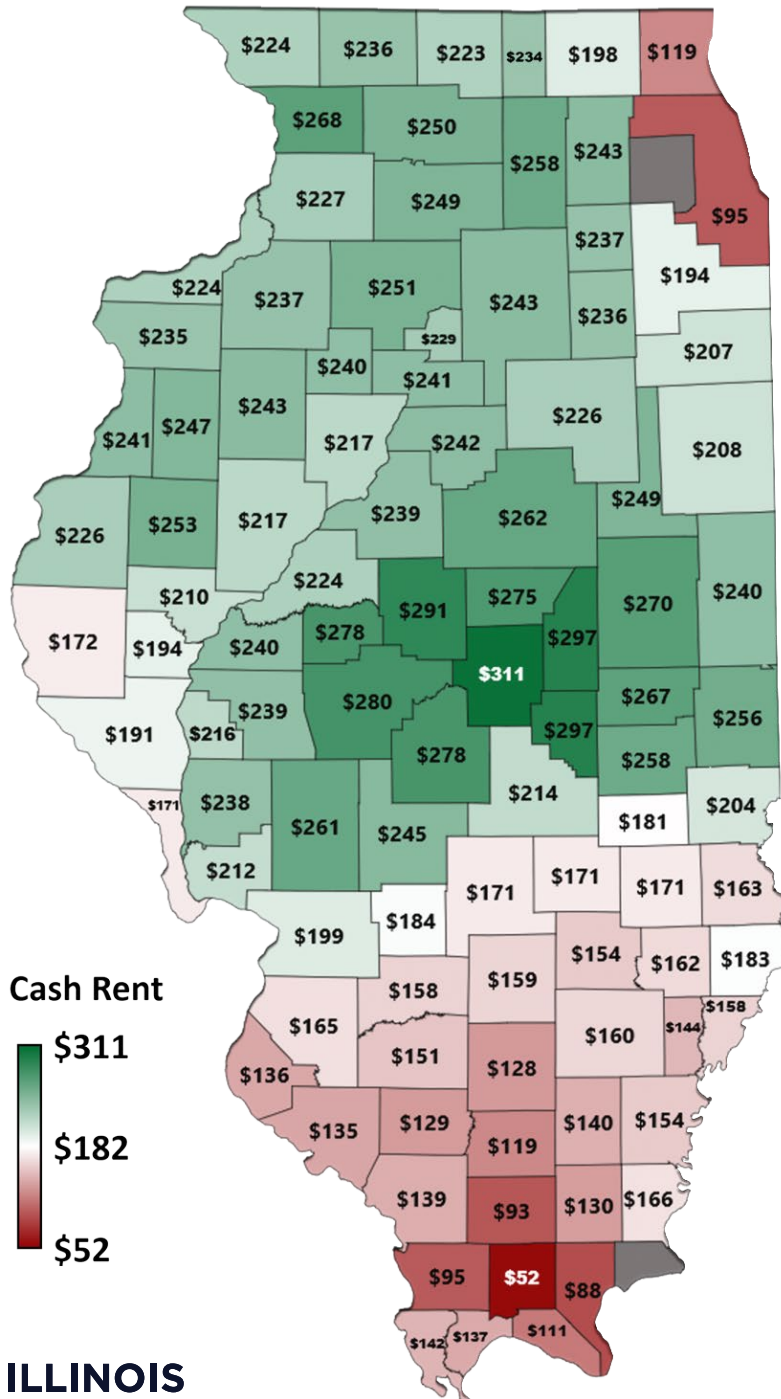
	Northern	Central	Southern
Owned	19%	14%	22%
Share-rent	21%	42%	36%
Cash-rent	60%	44%	42%

Average Cash Rents in **Illinois**, **Indiana**, and **Iowa**



Source: National Agricultural Statistical Service

2021 County Cash Rents



Released by the
National Agricultural Statistical Service

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Weekly Farm Economics

A Straight-Forward Structure for a Variable Cash Rent

Gary Schnitkey, Krista Swanson, and Nick Paulson
 Department of Agricultural and Consumer Economics
 University of Illinois
 Carl Zulauf

Department of Agricultural, Environmental and Development Economics
 Ohio State University
 August 10, 2021
farmdoc daily (11):117

Recommended citation format: Schnitkey, G., C. Zulauf, K. Swanson and N. Paulson. "A Straight-Forward Structure for a Variable Cash Rent." *farmdoc daily* (11):117, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 10, 2021.
[Permalink](#)

Unlike fixed cash rental arrangements, payments from a variable cash rent arrangements will vary based on prices and yields. Often during times of changing commodity prices, there is a need to renegotiate cash rents. Recent increases in commodity prices suggest that many rents will be re-negotiated this year, likely at higher levels. The use of a variable cash rental arrangement reduces renegotiation pressures. One barrier to the use of variable cash rents is specifying the parameters of variable cash rent. We present one of the most straightforward variable cash rental agreements in this article, with parameters set so that historical rents from the variable cash rent will equal average cash rents.

Terms of the Variable Cash Rent

This cash rental arrangement will base cash rents on percentages of crop revenues unless the result of those calculations is below a minimum cash rent. The percent of crop revenue is called the rent factor. Important terms of this share rent lease are given below:

Minimum Cash Rent: A minimum cash rent is included to meet Farm Service Agency (FSA) requirements to be classified as a cash lease. FSA will treat the agreement as a share rent if a meaningful minimum rent is not in place, in which case the landowner will share in government support payments. For simplicity, both the farmer and landowner often desire for the arrangement to be treated as a cash lease.

We suggest the following minimum cash rents by region of Illinois:

- North (214 bushels per acre expected corn yield for 2022): \$180 per acre
- Central-High (220 bushels per acre expected corn yield for 2022): \$200 per acre
- Central-Low (209 bushels per acre expected corn yield for 2022): \$160 per acre
- South (160 bushels per acre expected corn yield in 2022): \$80 per acre

These minimum levels are approximately \$80 per acre below average 2020 cash rents for that region (see Table 1).

Table 1. Expected 2022 Yields, Average 2020 Cash Rents, and Equivalent Rent Factors by Region of Illinois

Region	Expected 2022 Yields		2020 Average Cash Rent	Equivalent Rent Factors ¹	
	Corn	Soybeans		Corn	Soybeans
North	214	63	256	32%	44%
Central - High	220	69	279	32%	42%
Central - Low	209	62	243	34%	45%
South	166	55	160	38%	50%

¹ Application of this rent factor to crop revenue causes a variable cash rent to equal the average cash rent from 2000 to 2020.

Table 2. Calculation of a Rent from a Variable Cash Rent Based on Crop Revenue

Panel A. Factors Agreed on in Rental Arrangement¹

Minimum Rent	<u>\$200</u>
Rent Factor - Corn	<u>32%</u>
Rent Factor - Soybeans	<u>43%</u>
Percent Acres in Corn	<u>50%</u>
Percent Acres in Soybeans	<u>50%</u>

Panel B. Calculation of Rent After Yields and Prices are Known²

	Farm Yield		Market Price	=	Crop Revenue	x	Rent Factor	x	Percent of Acres	=	Rent
Corn	<u>220</u>	x	<u>\$4.50</u>	=	<u>\$990</u>	x	<u>32%</u>	x	<u>50%</u>	=	<u>\$158</u>
Soybeans	<u>69</u>	x	<u>\$12.35</u>	=	<u>\$852</u>	x	<u>43%</u>	x	<u>50%</u>	=	<u>\$183</u>
Rent Calculation (sum of corn and soybeans)											<u>\$341</u>
Cash Rent (higher of Minimum or Rent Calculation)											<u>\$341</u>

¹ These factors need to be agreed upon when a variable cash rent is entered.

² Farm yields and market prices allow the calculation of the cash rent.

Variable Cash Lease

- One of many variable cash leases, simplest form
- Variable leases for a landowner to be compensated by the farmer for the use of the farmland
- Modification of a cash rent lease, to consider the **impacts of return changes over time**

Negotiated items of a Variable Lease

Additional payment as a percent of crop revenue exceeds the minimum cash rent based on **rent factor** times **crop revenue**

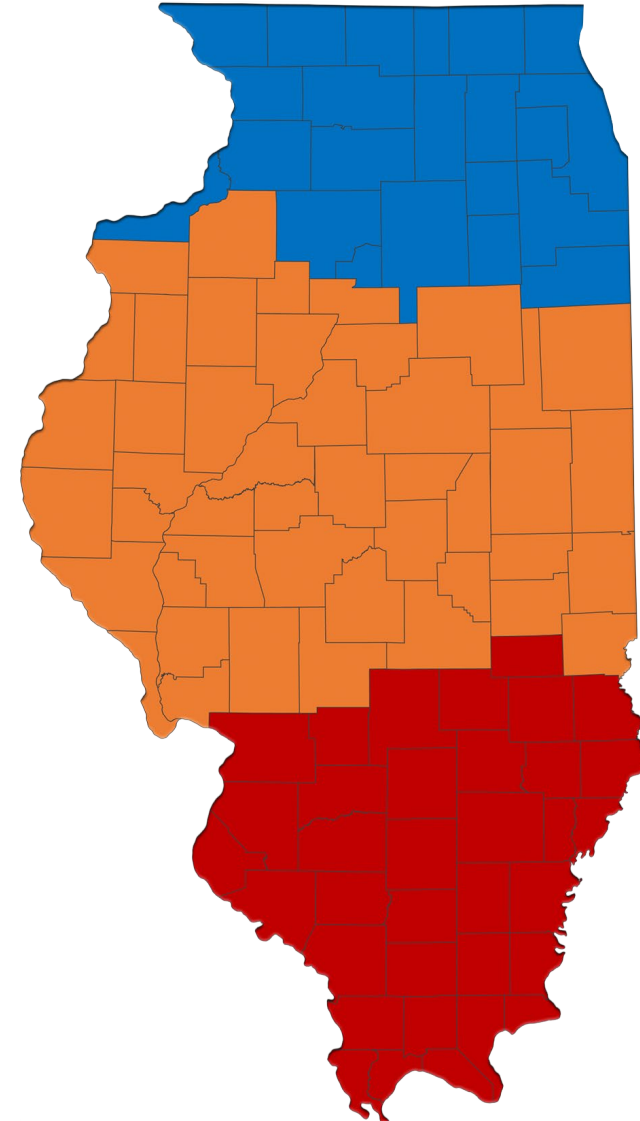
Crop revenue equals **farm yield** times **market price**

Market price is an average of quotes of an agreed upon delivery point

Quote every Wednesday from XYZ elevator from March to October



Minimum cash rent



North \$180/acre

214 bu/acre expected corn yield 2022

Central-High \$200/acre

214 bu/acre expected corn yield 2022

Central-Low \$160/acre

209 bu/acre expected corn yield 2022

South \$80/acre

160 bu/acre expected corn yield 2022

Rent Factor

Corn

32%

32%

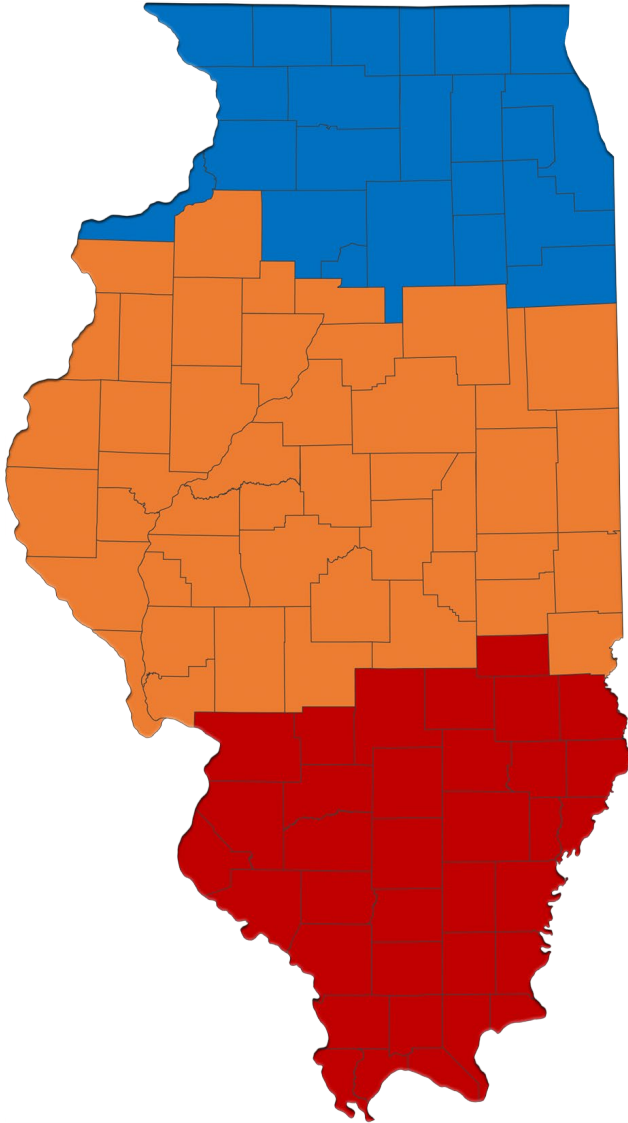
38%

Soybeans

43%

43%

48%

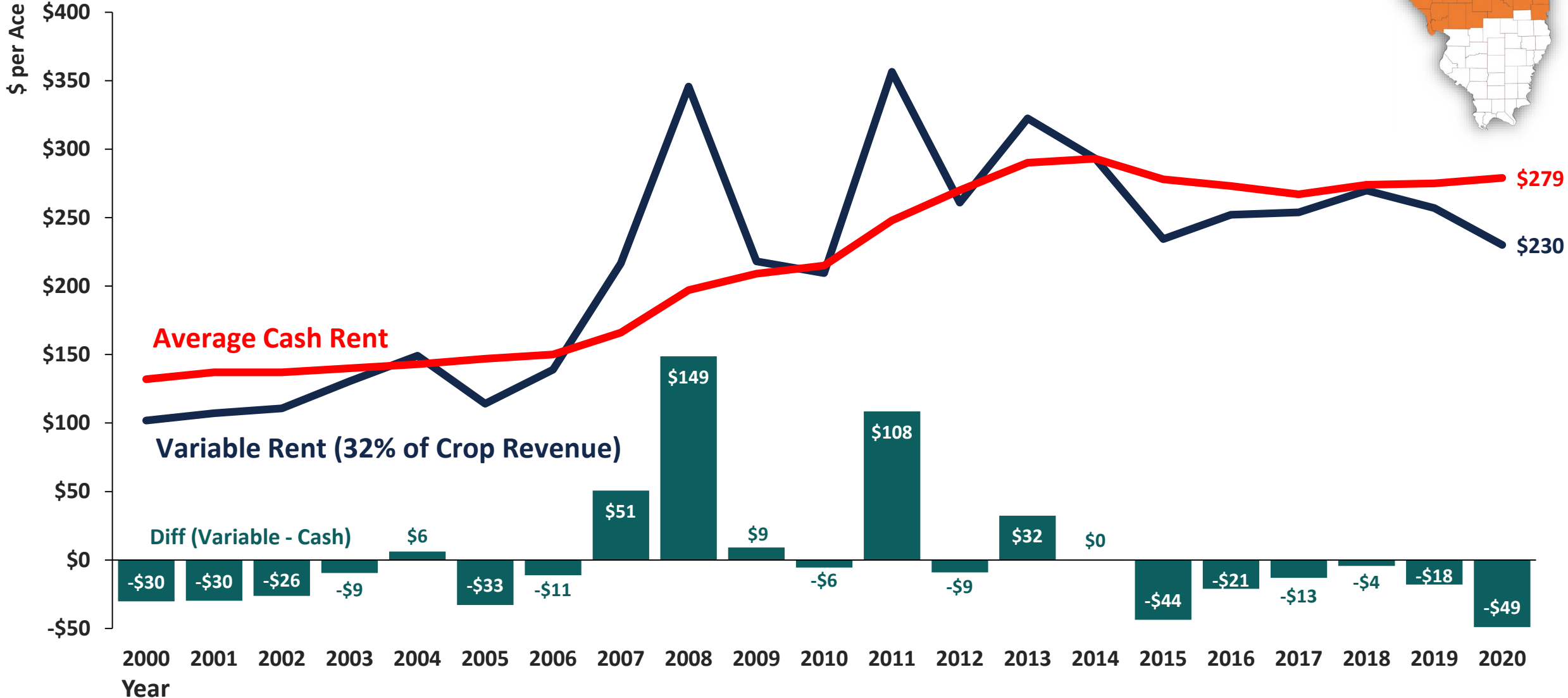
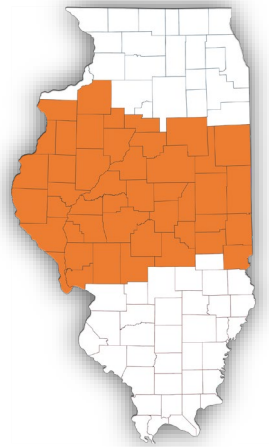


- Percent of revenue that determines final cash rent
- Varies between corn and soybeans

Rent factors causing variable cash rents to average cash rent over time

Average Cash Rents and Variable Cash Rents

for Central Illinois Farmland, Corn



Calculation of a Rent from a Variable Cash Rent Based on Crop Revenue

Panel A. Factors Agreed on in Rental Arrangement¹

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Illinois	Northern	Central	Southern
Corn	32%	32%	38%
Soybeans	43%	43%	48%

Calculation of a Rent from a Variable Cash Rent Based on Crop Revenue

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Advantages and Disadvantages (compared to cash rent)

Advantages

Adjusts cash rents to vary with returns,
so less need to renegotiate rents
(self adjusting)

Disadvantage

More terms to negotiate initially

Upcoming Webinars

Oct 21, 2021

Bringing Clarity to Tax Changes in Agriculture

by Bob Rhea, Brad Zwilling,
and Krista Swanson

This webinar will provide information about changes to federal and state depreciation provisions, how farm families can benefit from a variety of tax credits, and the latest developments for estate tax planning.

Oct 28, 2021

Factors Affecting Farmland Markets

by Bruce Sherrick, and Gary Schnitkey

Farmland prices have risen rapidly in recent months both due to in part to rising income prospects and continuing low interest rates. Regional differences in farmland performance and key factors influencing farmland values in the future will be discussed in this webinar.

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Latest Article

Machinery Cost Estimates for 2021
October 12, 2021
Dale Lattz and Gary Schnitkey
Machinery cost estimates for 2021 have been released and are available on the farmdoc website (see Management section of farmdoc). Machinery costs are updated every two years, with the last update occurring in 2019. Substantial increases in list prices of...

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