

Agriculture Update

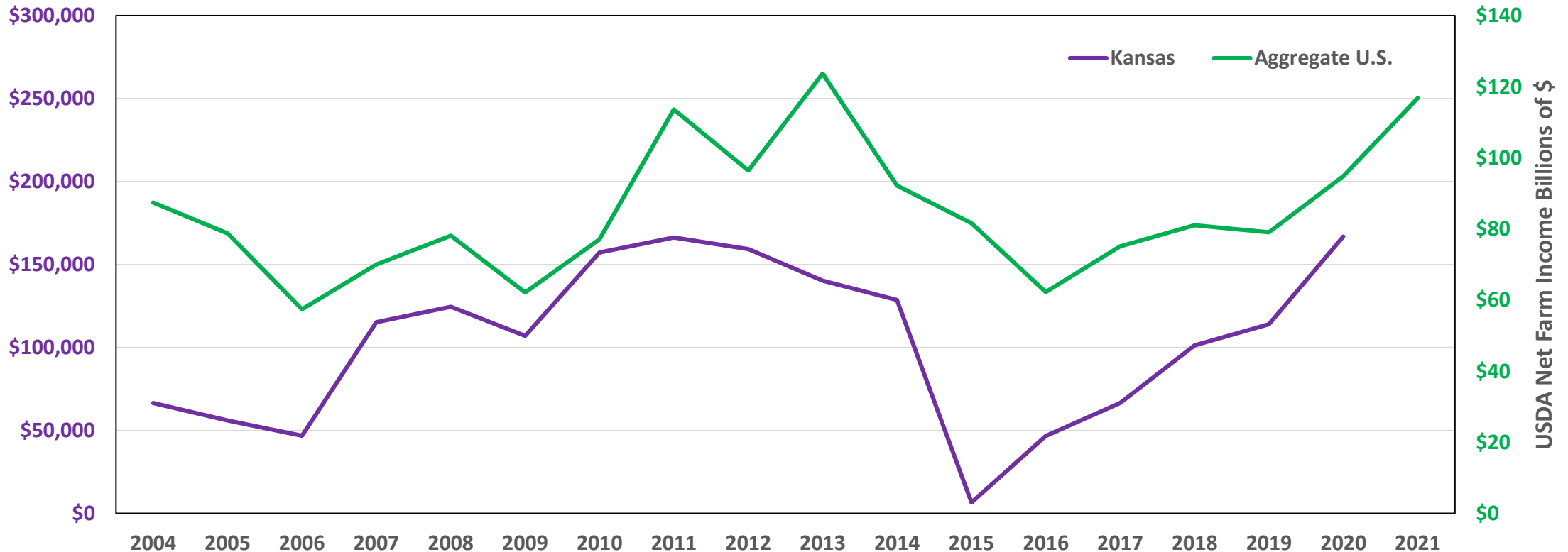
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Introduction

- ❖ An outstanding farm economy through the end of 2021 with weakening into 2022
- ❖ Net farm income and government program payments
- ❖ Examination of 475 KFMA farms with continuous data 2014 through 2020
 - ❖ Probability of Default
 - ❖ Debt to Asset Ratio
 - ❖ Working Capital Position
 - ❖ Capital Debt Repayment Capacity
- ❖ Land Value changes
- ❖ Shifting crop mix and 2021 and 2022 farm income prospects

Net Farm Income – Kansas Farm Management and Aggregate U.S.



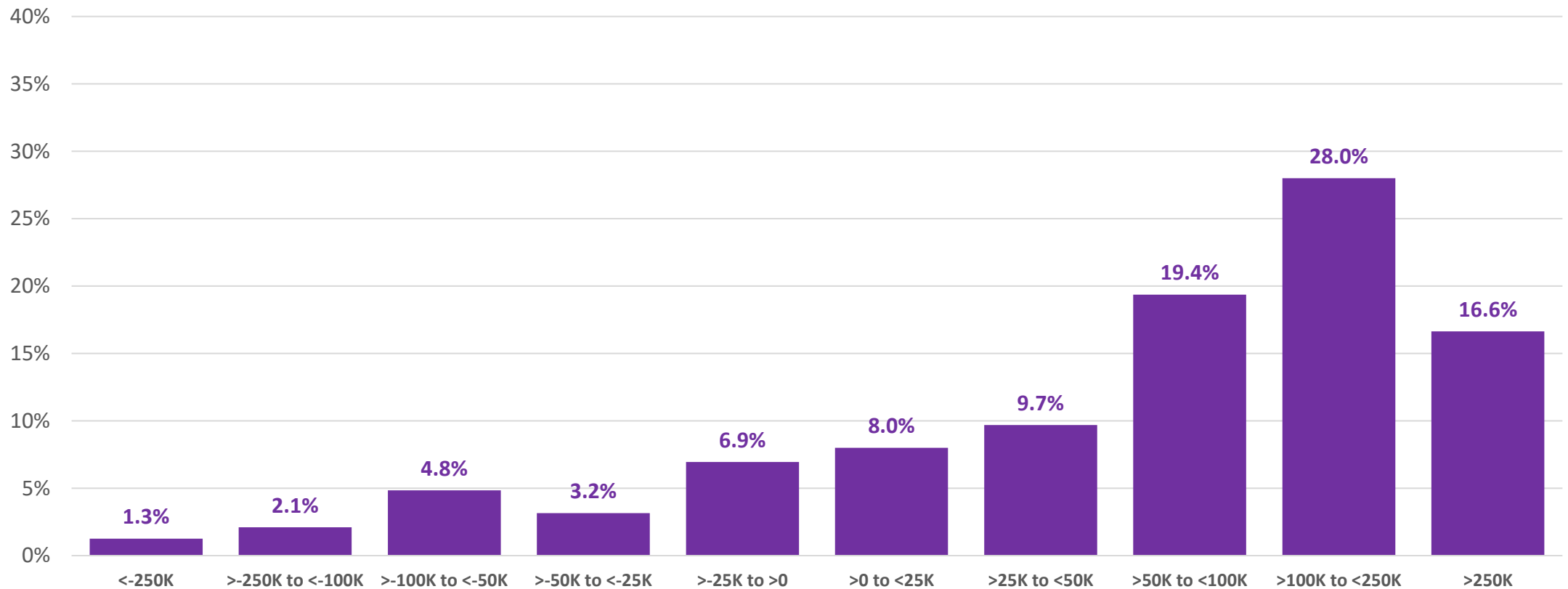
KFMA Average Net Farm Income and Government Payments

	2014	2015	2016	2017	2018	2019	2020
Net Farm Income	\$135,996	\$13,081	\$58,699	\$72,911	\$106,983	\$117,896	\$172,530
Government Payments	\$26,718	\$21,748	\$26,838	\$27,929	\$41,275	\$91,340	125,242
Government Payments as a Percent of Income	19.6%	166.3%	45.7%	38.3%	38.6%	77.5%	72.6%

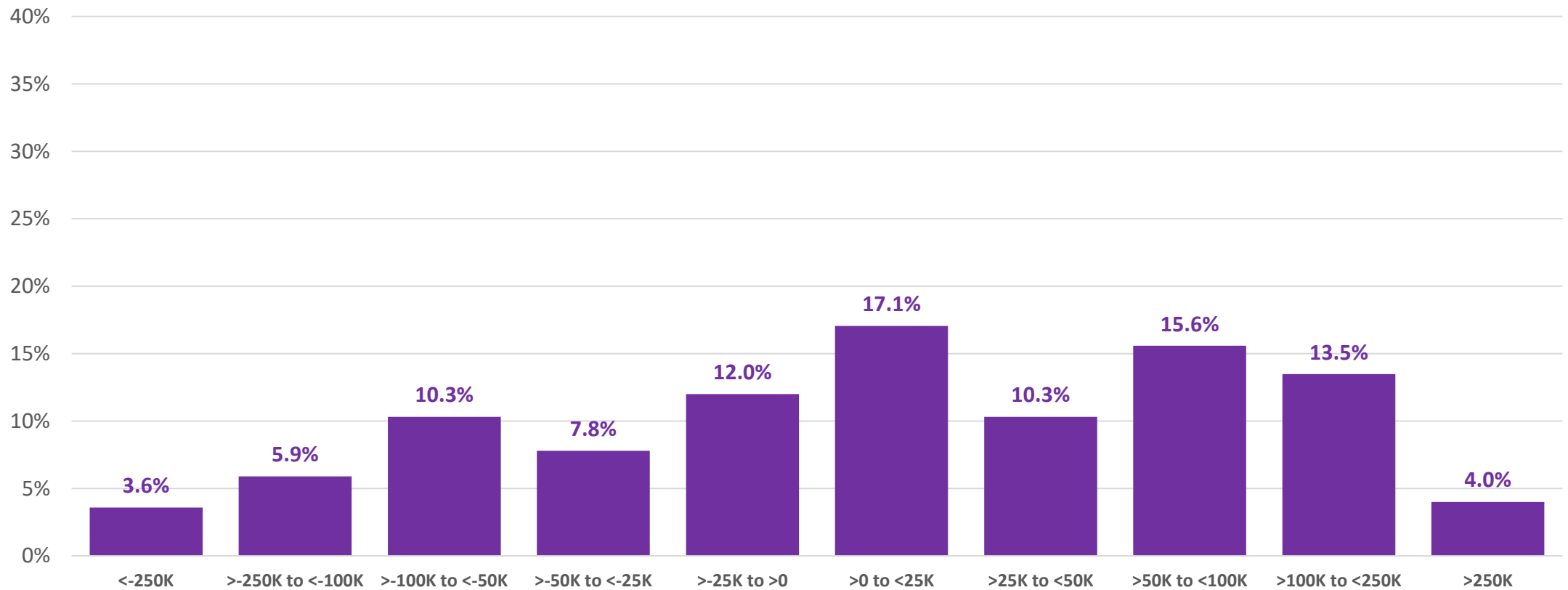
Sample size is 475 farms with 2014 to 2020 continuous data

Government Payments are important as a percentage of income for farms

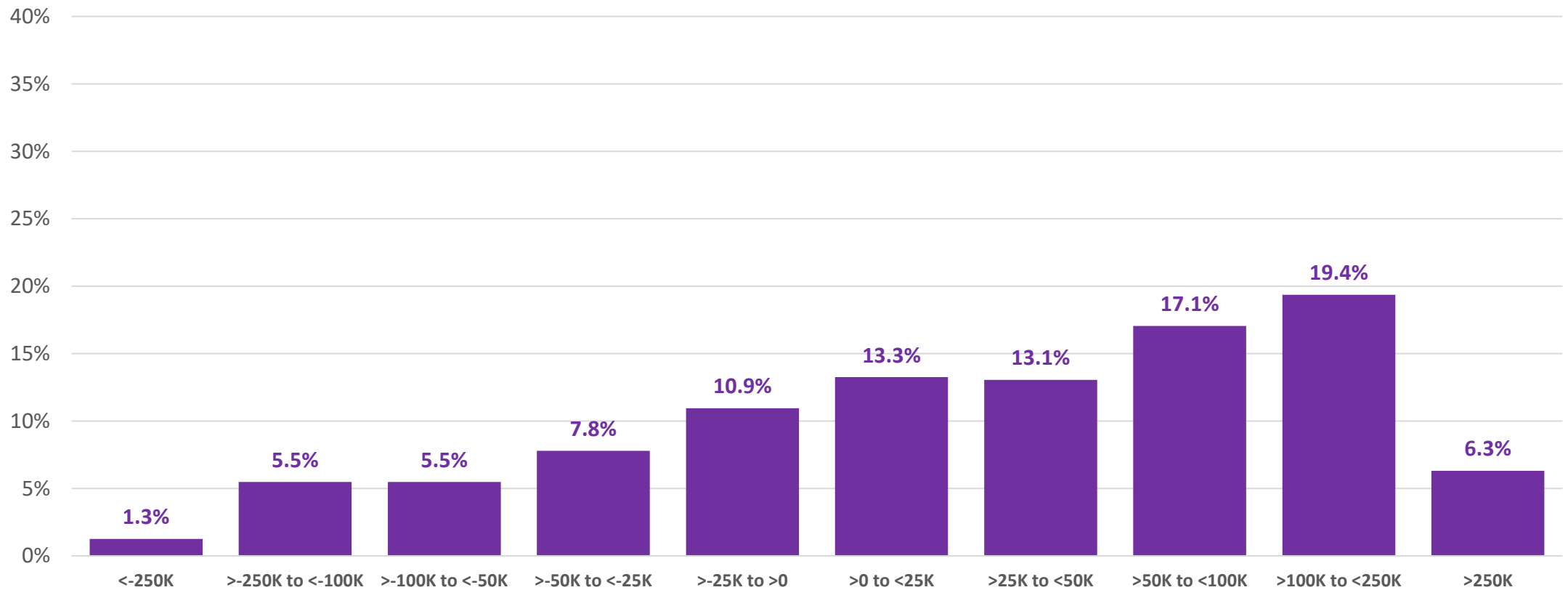
Distribution of 2014 Net Farm Income



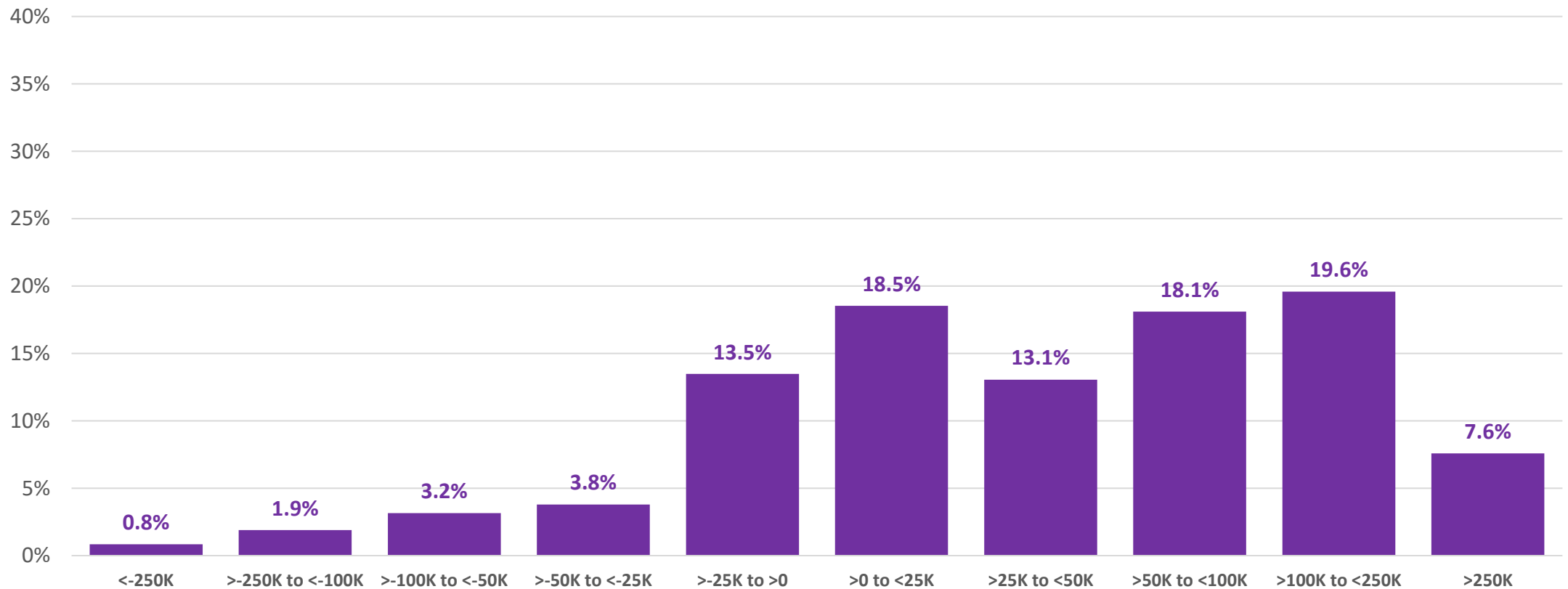
Distribution of 2015 Net Farm Income



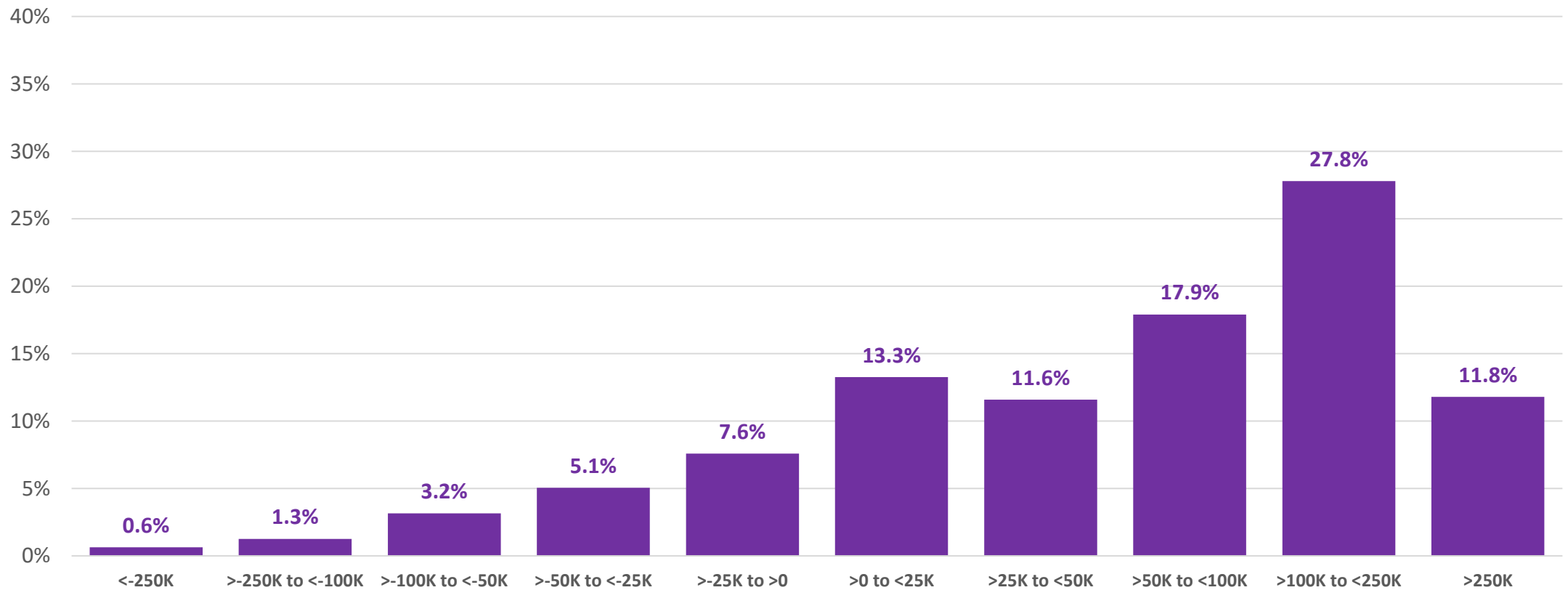
Distribution of 2016 Net Farm Income



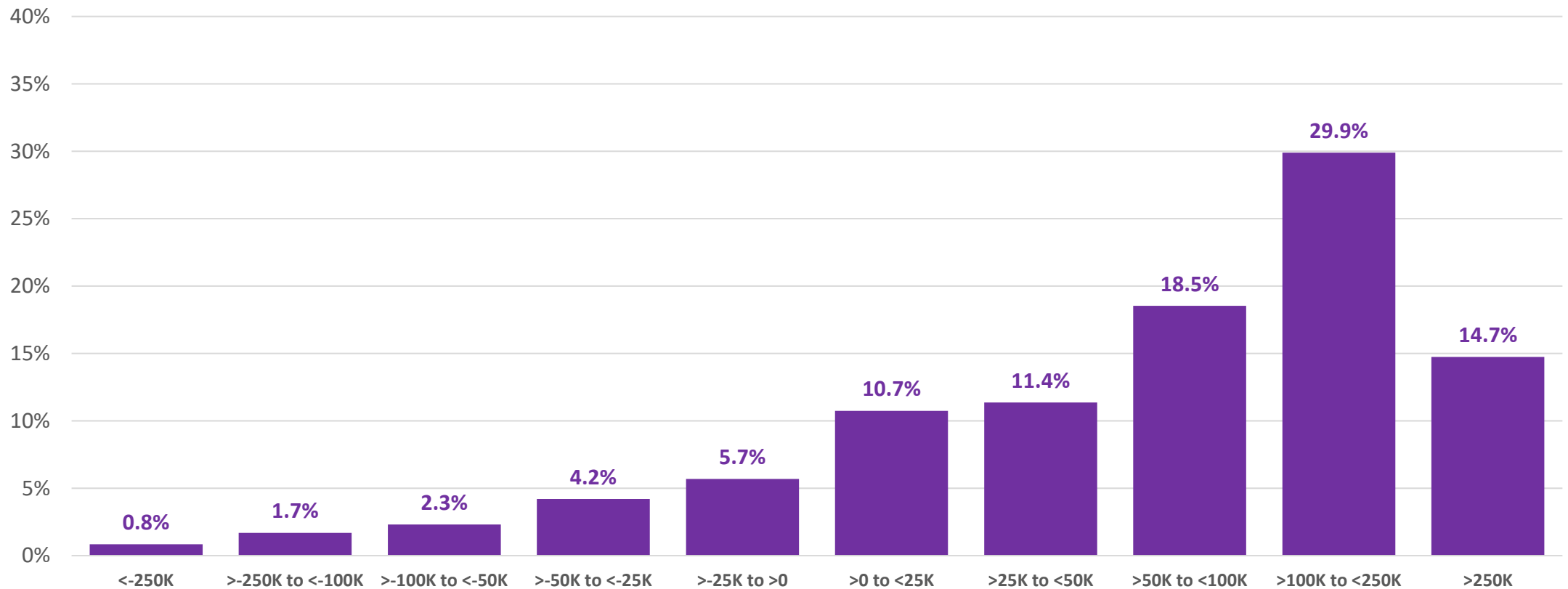
Distribution of 2017 Net Farm Income



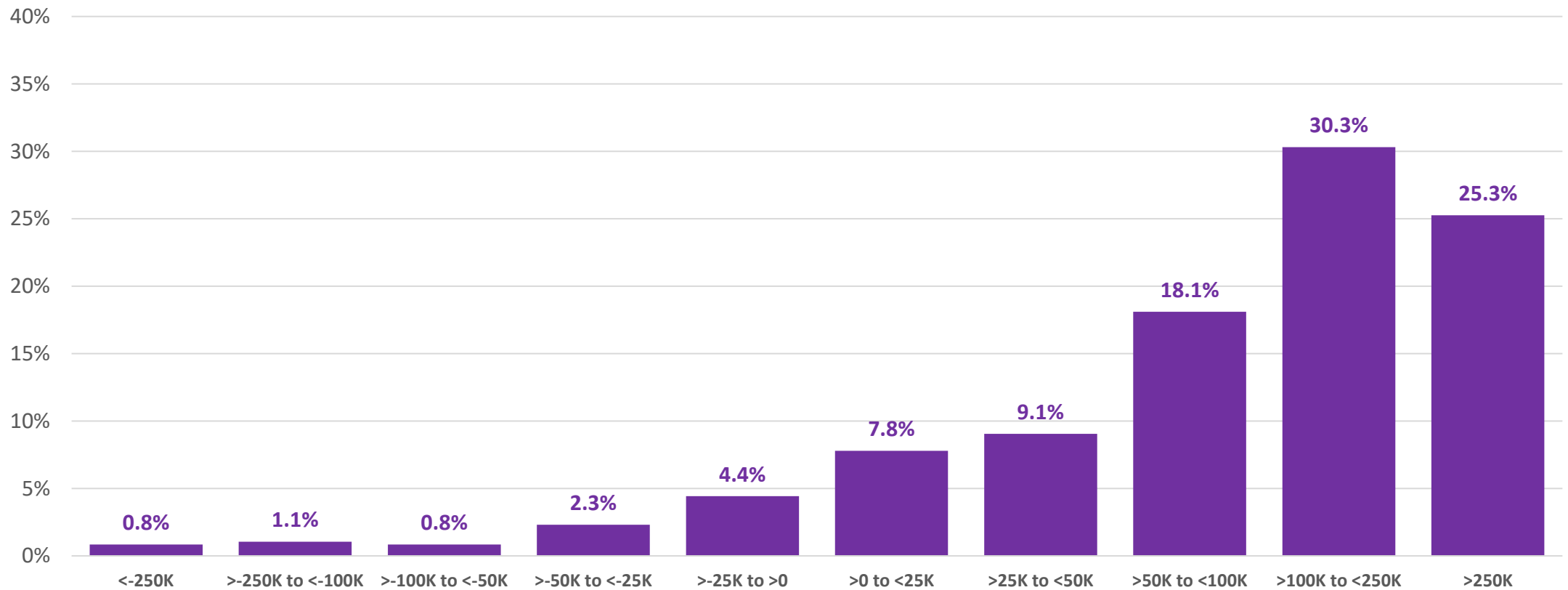
Distribution of 2018 Net Farm Income



Distribution of 2019 Net Farm Income



Distribution of 2020 Net Farm Income



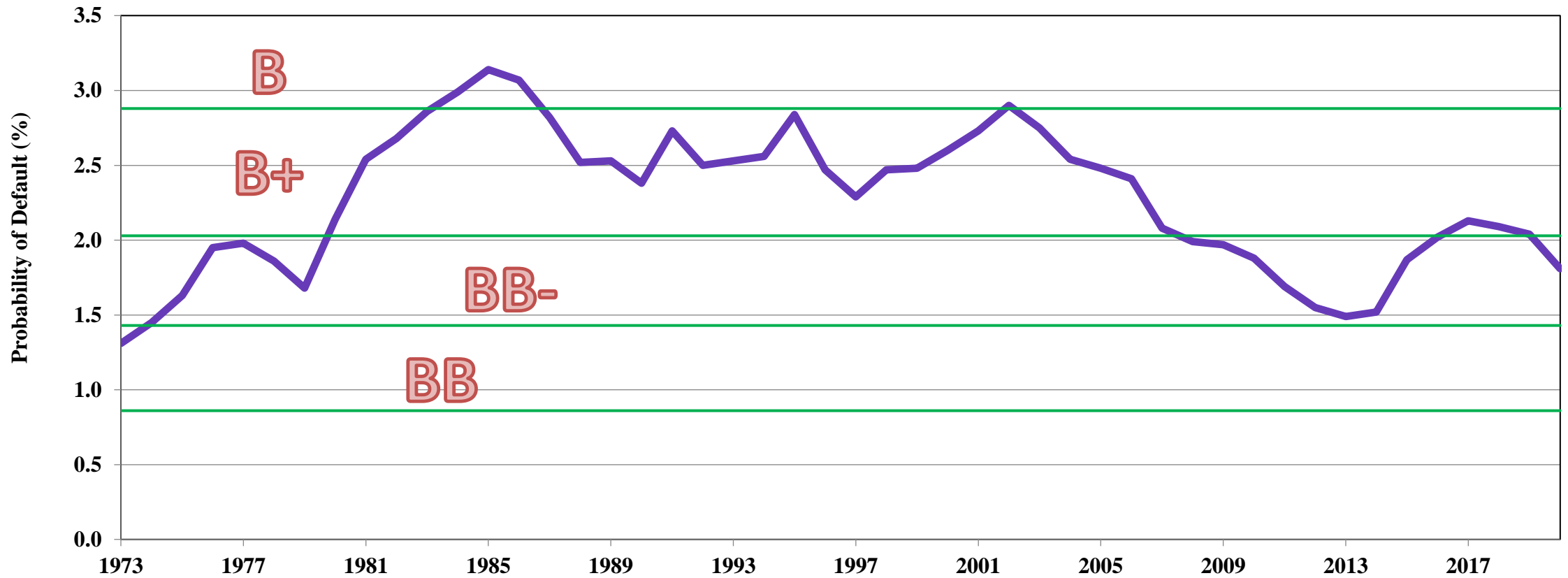
Distribution of KFMA Net Farm Income

Farms with	2014	2015	2016	2017	2018	2019	2020
Negative Net Farm Income	18.3%	39.6%	30.9%	23.2%	17.7%	14.7%	9.5%
Net Farm Income Less than \$50,000	36.0%	66.9%	57.3%	54.7%	42.5%	36.8%	26.3%

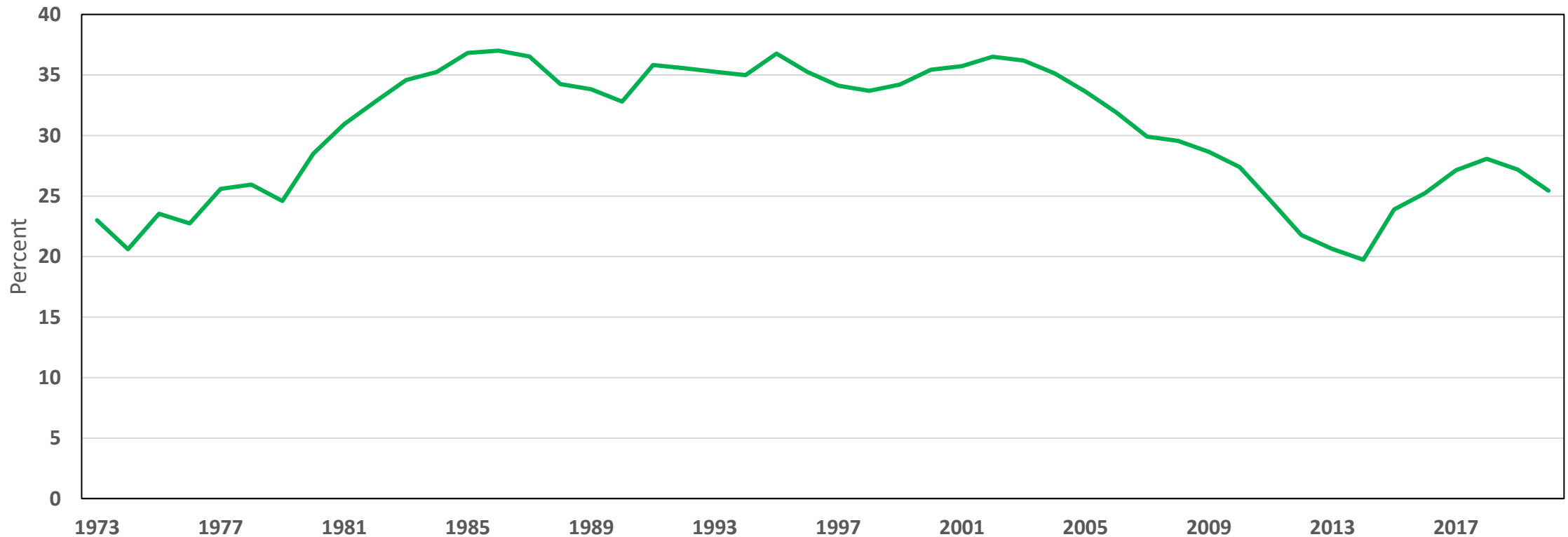
Farms with negative income each year from 2014 – 0.8%

Farms with positive income each year from 2014 – 30.1%

Default Risk for KFMA farms 1973 through 2020



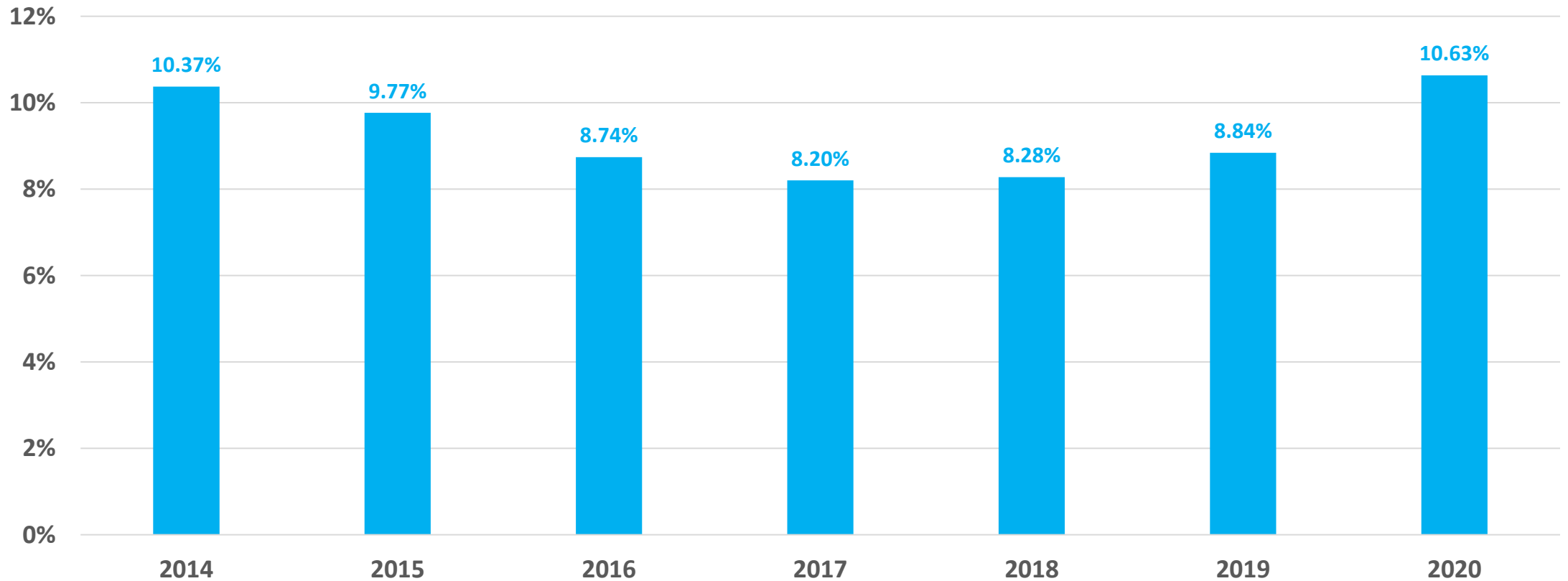
KFMA Farms Debt to Asset Ratio



Lower Tail of the Debt to Asset Ratio

Farms with	2014	2015	2016	2017	2018	2019	2020
Debt > 40%	10.5%	16.6%	20.4%	21.5%	22.5%	21.1%	16.6%
Debt > 70%	1.9%	2.9%	4.0%	4.4%	4.6%	4.2%	2.9%

KFMA Farms Working Capital to Asset Ratio

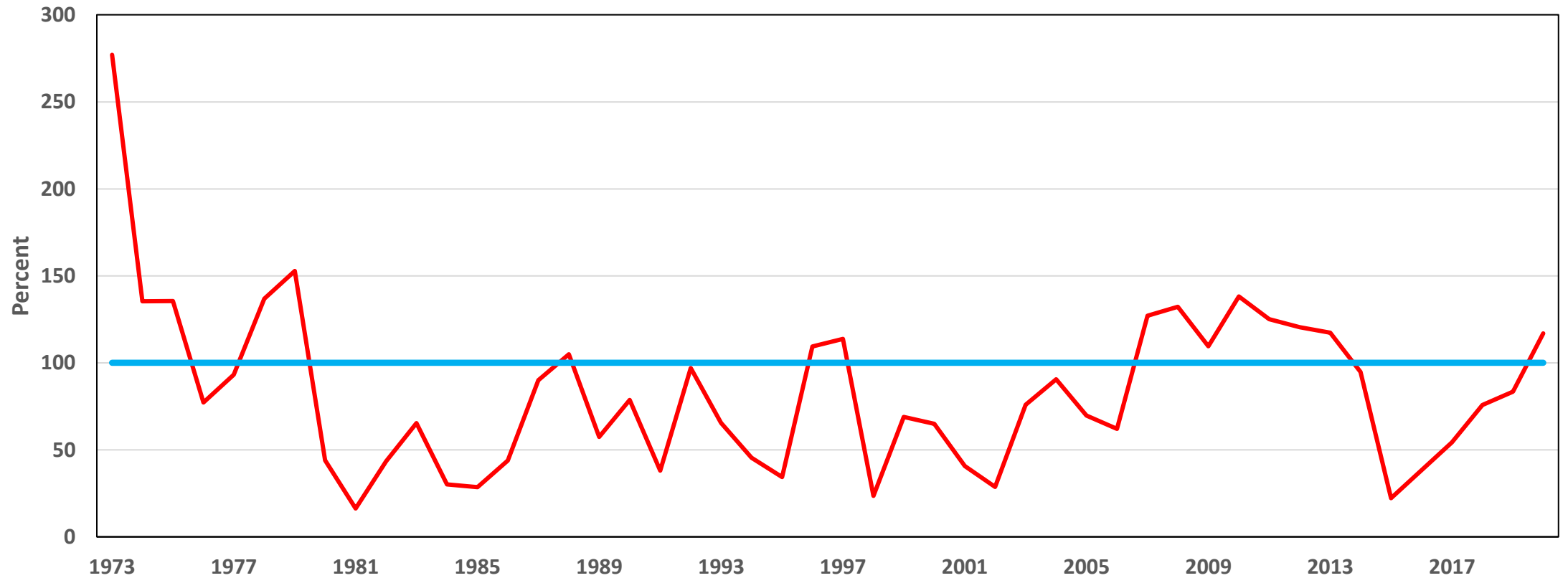


Tails of the Working Capital to Asset Ratio

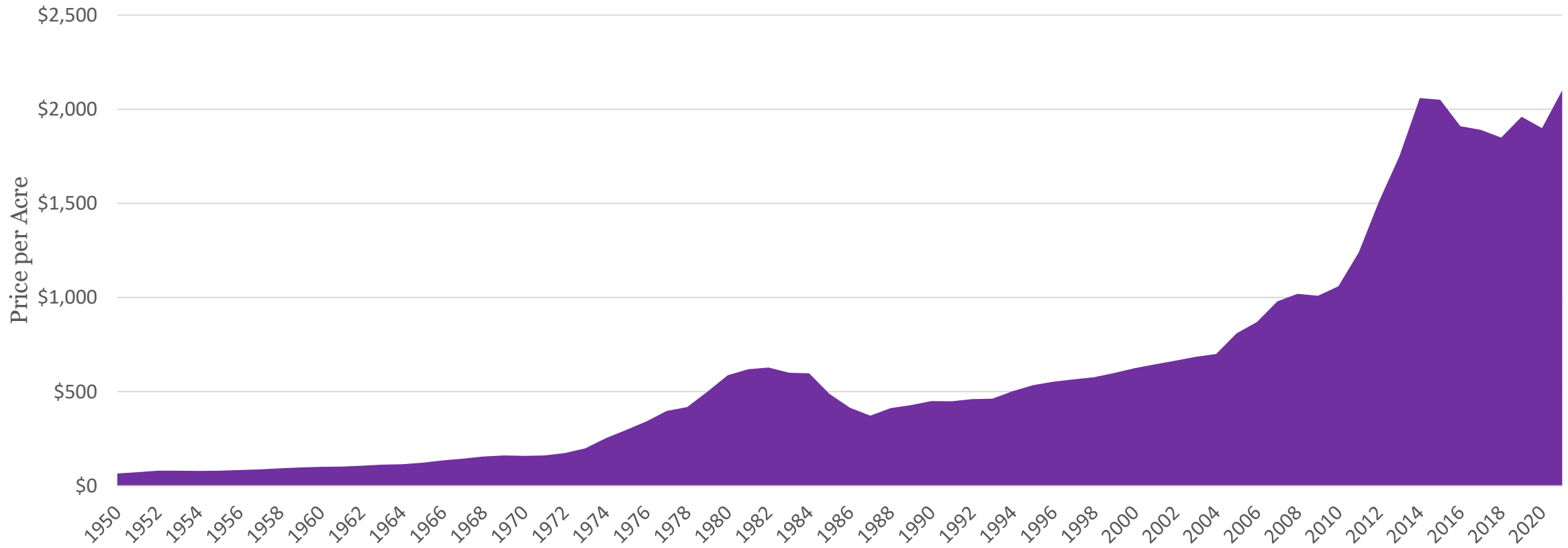
Farms with	2014	2015	2016	2017	2018	2019	2020
Ratio < 0	15.2%	19.6%	23.8%	26.5%	25.7%	24.2%	18.3%
Ratio > 20%	19.2%	21.9%	19.6%	19.6%	19.2%	19.2%	22.3%

Working Capital to Asset Ratio has improved but is has not reached 2014 levels regarding farms less than zero

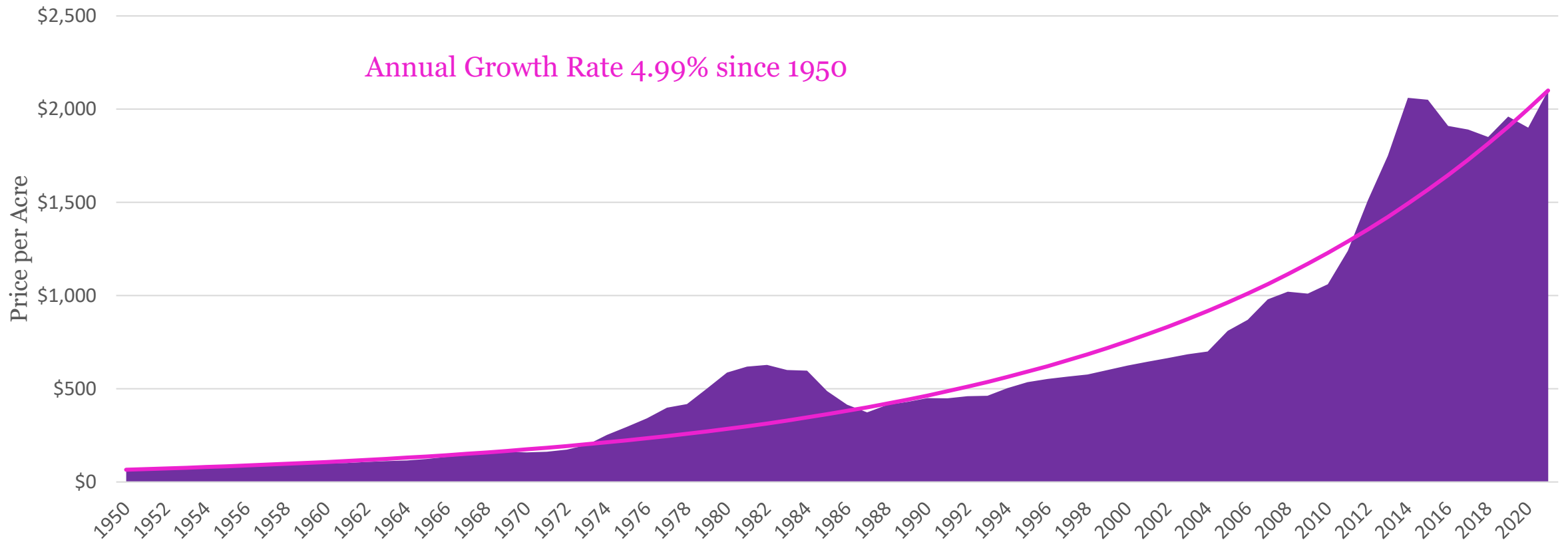
KFMA Farms Repayment Capacity



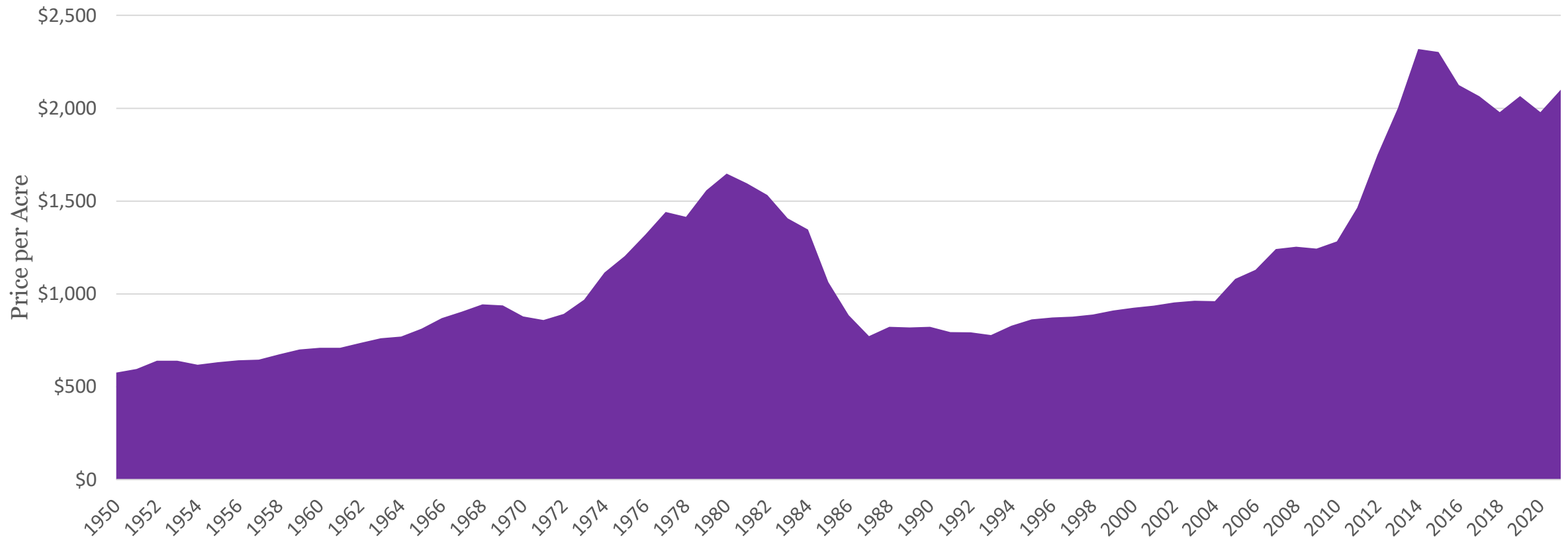
Kansas Land Values from 1950



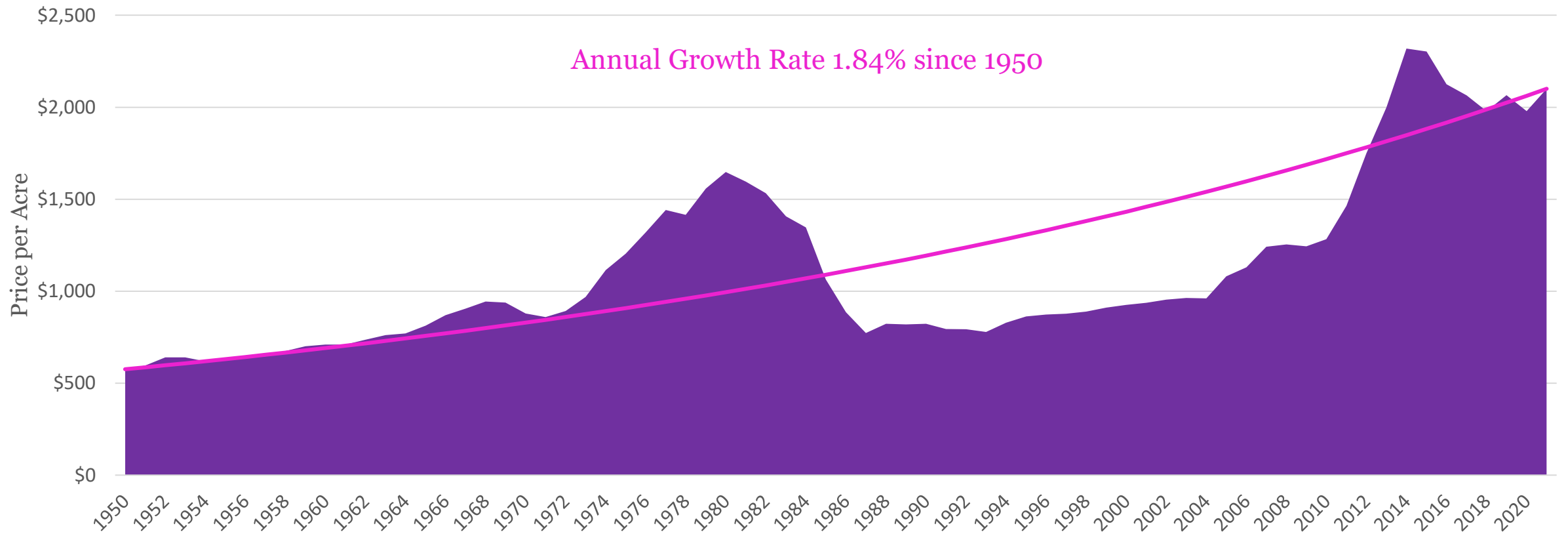
Kansas Land Values from 1950



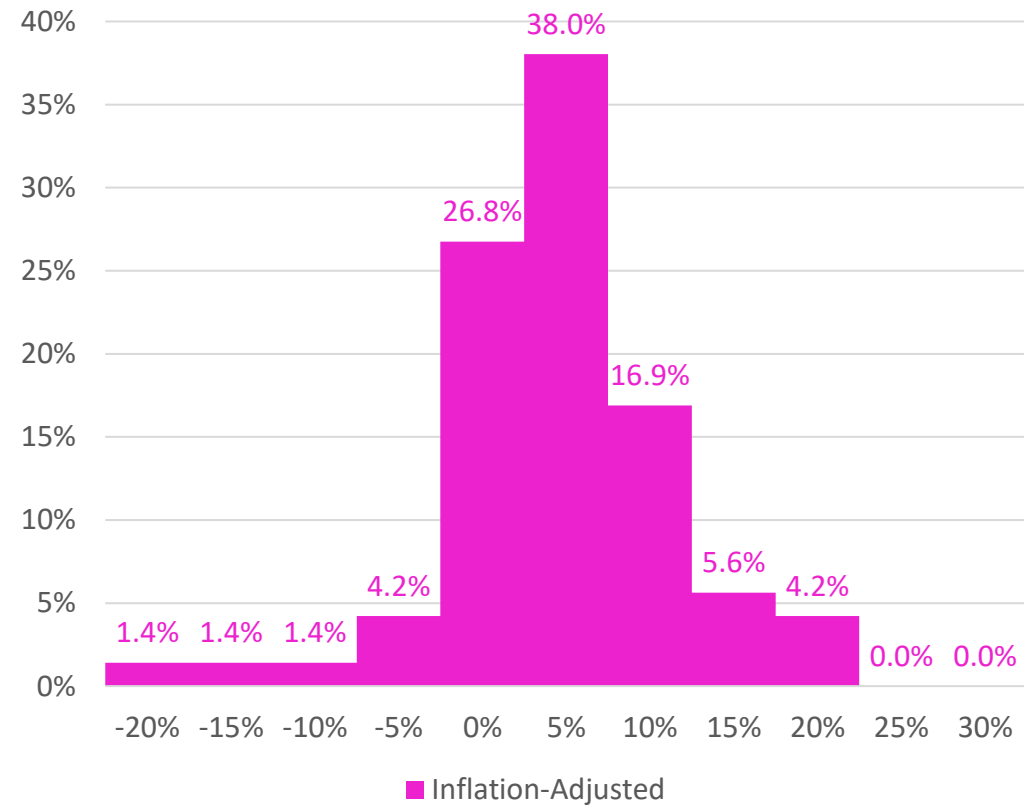
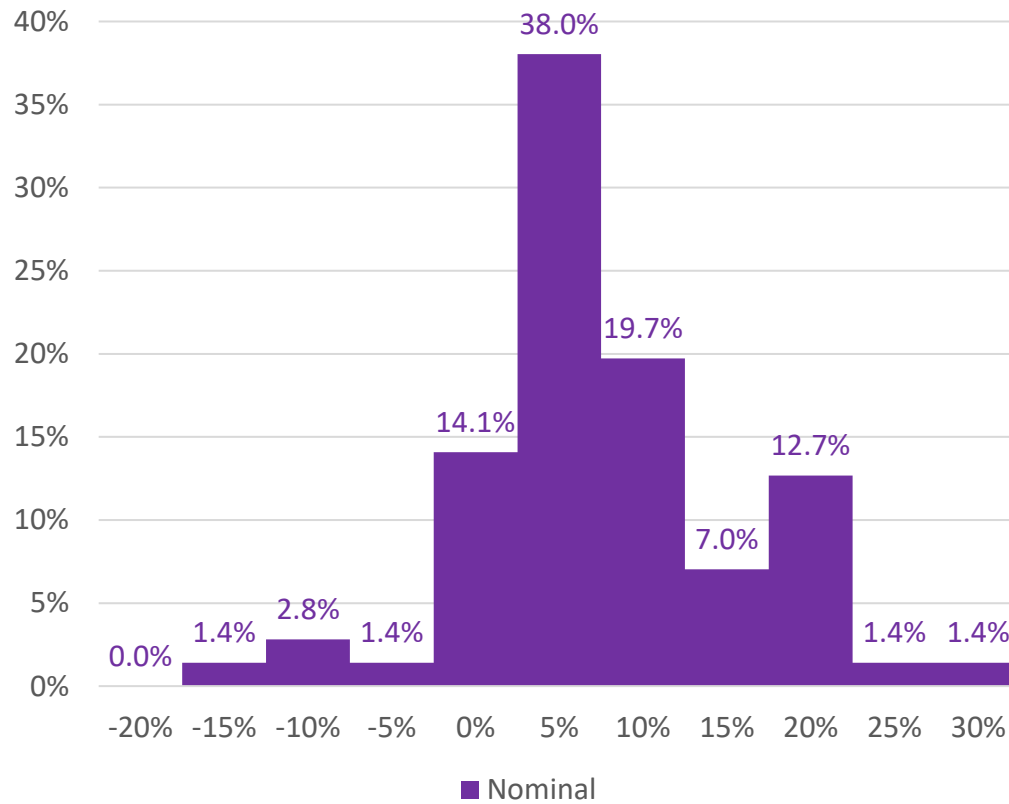
Inflation-Adjusted Kansas Land Values



Inflation-Adjusted Kansas Land Values



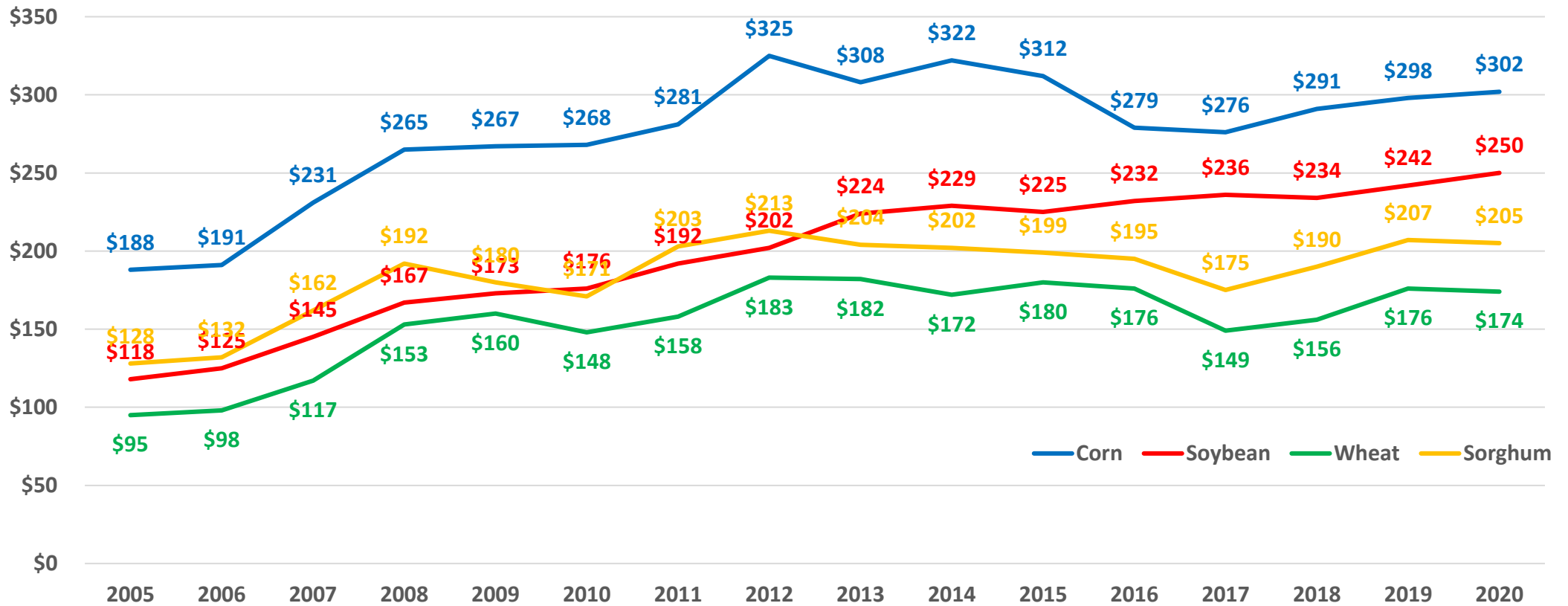
Distribution of Land Price Changes



Land Value Summary

- ❖ Kansas Agricultural Land Values increased by 10.5% in 2021 according to USDA (August)
- ❖ Kansas Inflation-Adjusted Agricultural Land Values increased by 6.1% in 2021 according to USDA
- ❖ The annual increase in Kansas Agricultural Land Values has been 4.99% since 1950
- ❖ The annual inflation-adjusted increase in Kansas Agricultural Land Values has been 1.84% since 1950
- ❖ Kansas Land Values have fallen 19.7% of the years since 1950
- ❖ Kansas Inflation-Adjusted Land Values have fallen 35.2% of the years since 1950
- ❖ 72% of the years Kansas Land Values have been between -5% and 10%
- ❖ 82% of the years Inflation-Adjusted Kansas Land Values have been between -5% and 10%

KFMA Enterprise Non-Irrigated Variable Cost of Production per Acre



2020 Enterprise Information – Crop Mix Shift?

- **Kansas Corn – 2020 Yield 14% below the previous 5-year average (4.5% increase for 2021 over 2020)**
 - Revenue - \$397 per acre
 - Variable Cost - \$302 per acre
 - Total Cost - \$412 per acre
- **Kansas Soybeans – 2020 Yield 9% below previous 5-year average (2.4% increase for 2021 over 2020)**
 - Revenue - \$385 per acre
 - Variable Cost - \$250 per acre
 - Total Cost - \$366 per acre
- **Kansas Wheat – 2020 Yield 7% below the previous 5-year average (22.2% increase for 2021 over 2020)**
 - Revenue - \$208 per acre
 - Variable Cost - \$174 per acre
 - Total Cost - \$253 per acre
- **Kansas Sorghum – 2020 Yield 0% above the previous 5-year average (5.9% decrease for 2021 over 2020)**
 - Revenue - \$387 per acre
 - Variable Cost - \$205 per acre
 - Total Cost - \$297 per acre

Shifting Crop Mix

Crop	2015	2016	2017	2018	2019	2020	2021	6-Year % Change
	Acres Harvested (Thousand)							
Corn	3,920	4,920	5,200	4,980	6,020	5,720	5,300	35%
Sorghum	3,200	2,950	2,360	2,650	2,450	2,800	3,350	5%
Soybean	3,860	4,010	5,110	4,690	4,490	4,750	4,800	24%
Wheat	8,700	8,200	6,950	7,300	6,500	6,250	6,900	-21%
Total	19,680	20,080	19,620	19,620	19,460	19,520	20,350	3.4%

Increase in soybean, sorghum, and wheat acres in 2021 and a decrease in corn acres

2022 Price Outlook

Commodity	Cash Bid (1/24)	Forward Bid (2022 Crop)	Difference
Wheat	\$7.98	\$7.77	\$0.21
Corn	\$6.31	\$5.36	\$0.95
Sorghum	\$6.56	\$5.41	\$1.15
Soybean	\$13.06	\$12.38	\$1.18

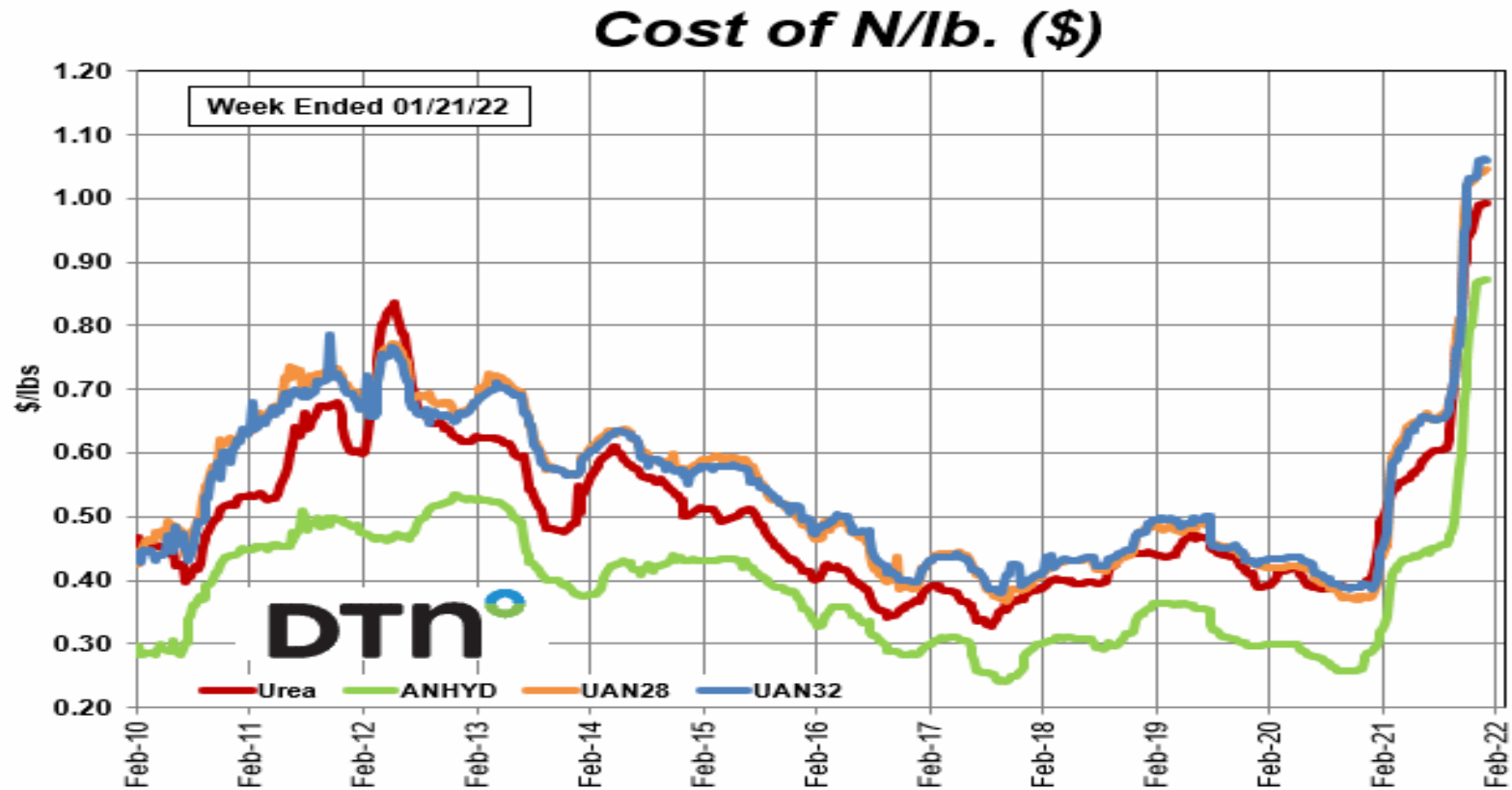
January 24, 2022 Bid at Salina Kansas

Crop Farm Income Estimates

Year	Net Farm Income	Government Payments	% Government Payments
2019	\$133,012	\$95,763	72.0%
2020	\$187,209	\$80,404	42.9%
2021	\$260,881	\$54,960	21.1%
2022	\$90,472	\$0	0%

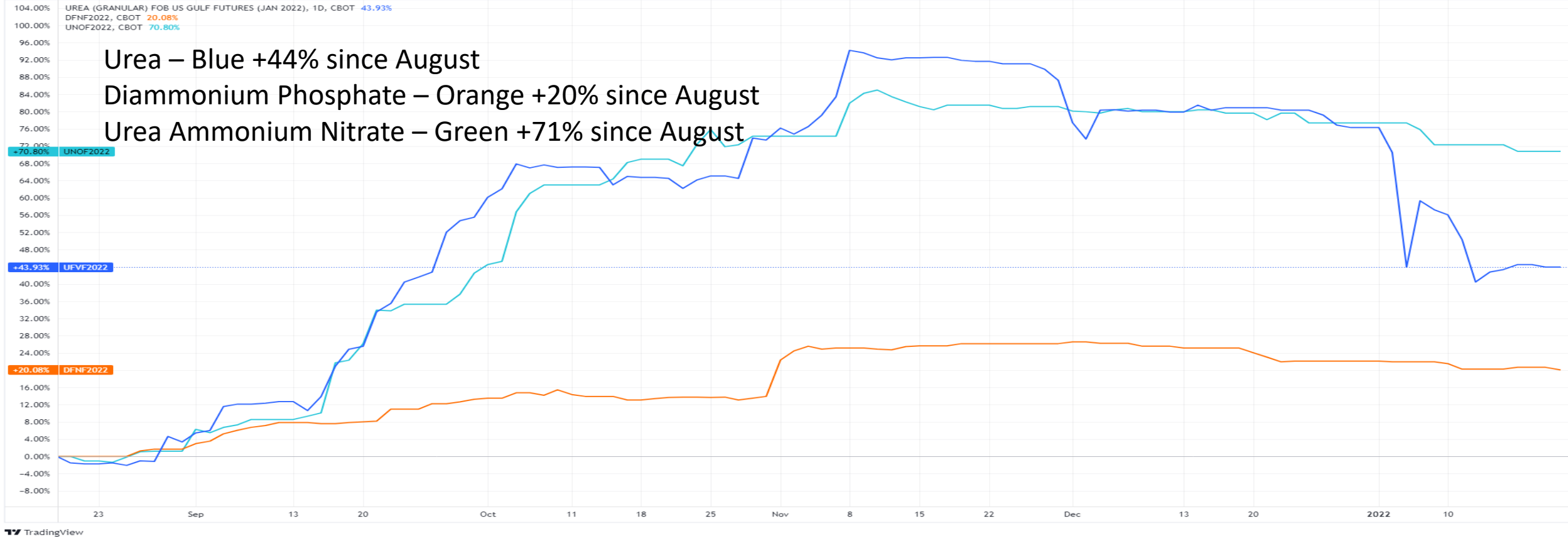
January estimates from Gregg Ibendahl

Cost of Nitrogen per pound



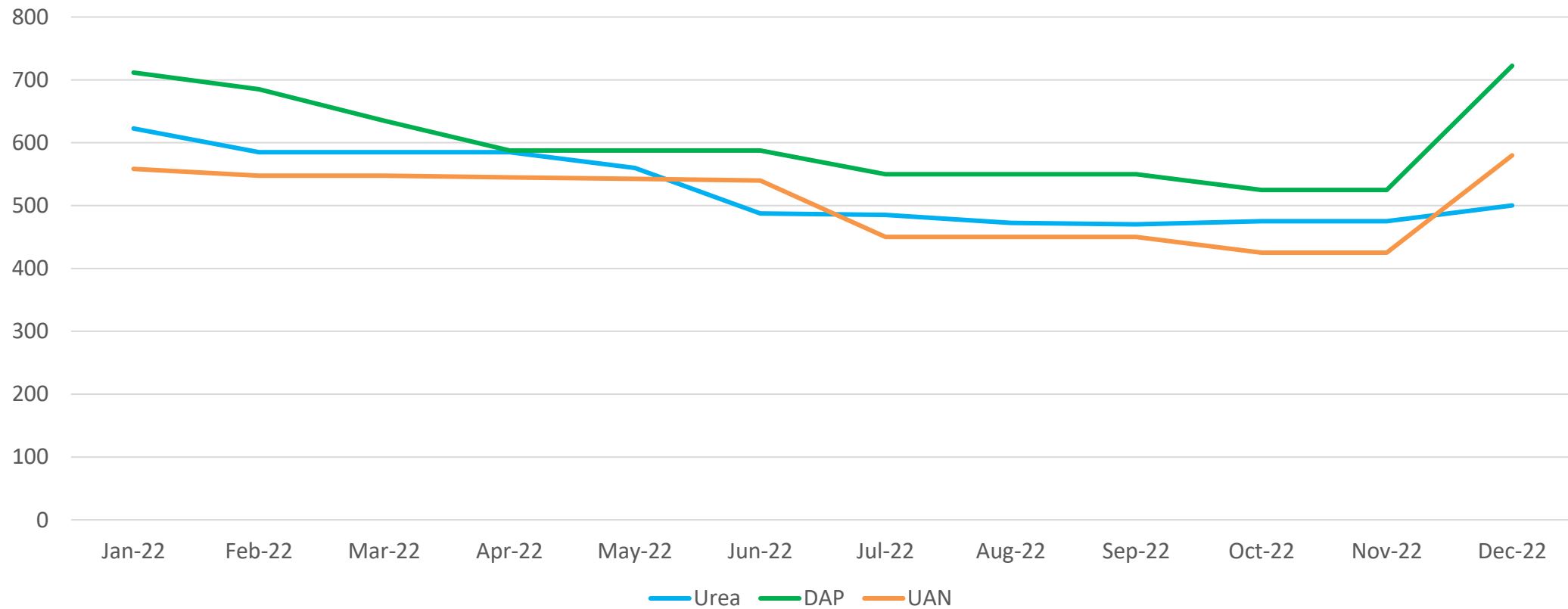
January 2022 Fertilizer Futures

Published on TradingView.com, Jan 24, 2022 12:07 UTC-6



TradingView

Fertilizer Futures Prices 1/24/2022



2022 Non-Irrigated Crop Expense Estimates

	Per Acre		
Crop (5-yr yield)	Fertilizer/Chemical Increase	Total Expenses	Net Income
Corn (110)	\$108	\$520	\$70
Sorghum (90)	\$65	\$363	\$124
Soybean (45)	\$65	\$431	\$126
Wheat (50)	\$66	\$319	\$49

Summary

- At the end of 2020, Kansas has experienced 5 years of increasing net farm income on average
 - Farms with negative net income fell from 39.6% of farms in 2015 to 9.5% of farms in 2020
 - Much of that improvement was due to increasing government payments
- 2021 was the 6th year of increasing average net farm income
- The probability of default improved in 2020
- The debt to asset ratio improved in 2020
 - 16.6% of KFMA farms had a debt to asset ratio of greater than 40%, down from 22.5% in 2018
 - 2.9% of KFMA farms had a debt to asset ratio of greater than 70%, down from 4.6% in 2018
- The working capital to asset ratio increased for the 3rd year in a row in 2020
- The capital debt repayment capacity increased for the 5th year in a row in 2020
- Farmers continue to shift crop mix in Kansas
 - Shift to Soybean, Wheat, and Sorghum in 2021 away from Corn

Conclusions

- Crop Farmers income will be up in 2021
- Government Payments will be down in 2021
- 2022 prospects are encouraging but will not be as high as 2020 and 2021
- Crop expenses will be up
 - Supply disruptions are concerning to the agricultural sector
- Land values will be up in 2022