

The Impacts of Ad Hoc Government Payments on Commodity and Land Markets

IOWA STATE UNIVERSITY
Extension and Outreach



Wendong Zhang

Assistant Professor and Extension Economist at ISU
wdzhang@iastate.edu, 515-294-2536

American Farm Bureau Federation

February 18, 2021

A Quick Introduction: Dr. Wendong Zhang

- Grown up in a rural county in NE China
- Attended college in Shanghai and Hong Kong
- Ph.D. in Ag Econ in 2015 from Ohio State
- 2012 summer intern at USDA-ERS on farm economy and farmland values
- Research and extension interests:

land value/ownership

- 2020 Results now available at **ISU Farmland Portal** www.card.iastate.edu/farmland/

- 2019 Farm Transfer Survey

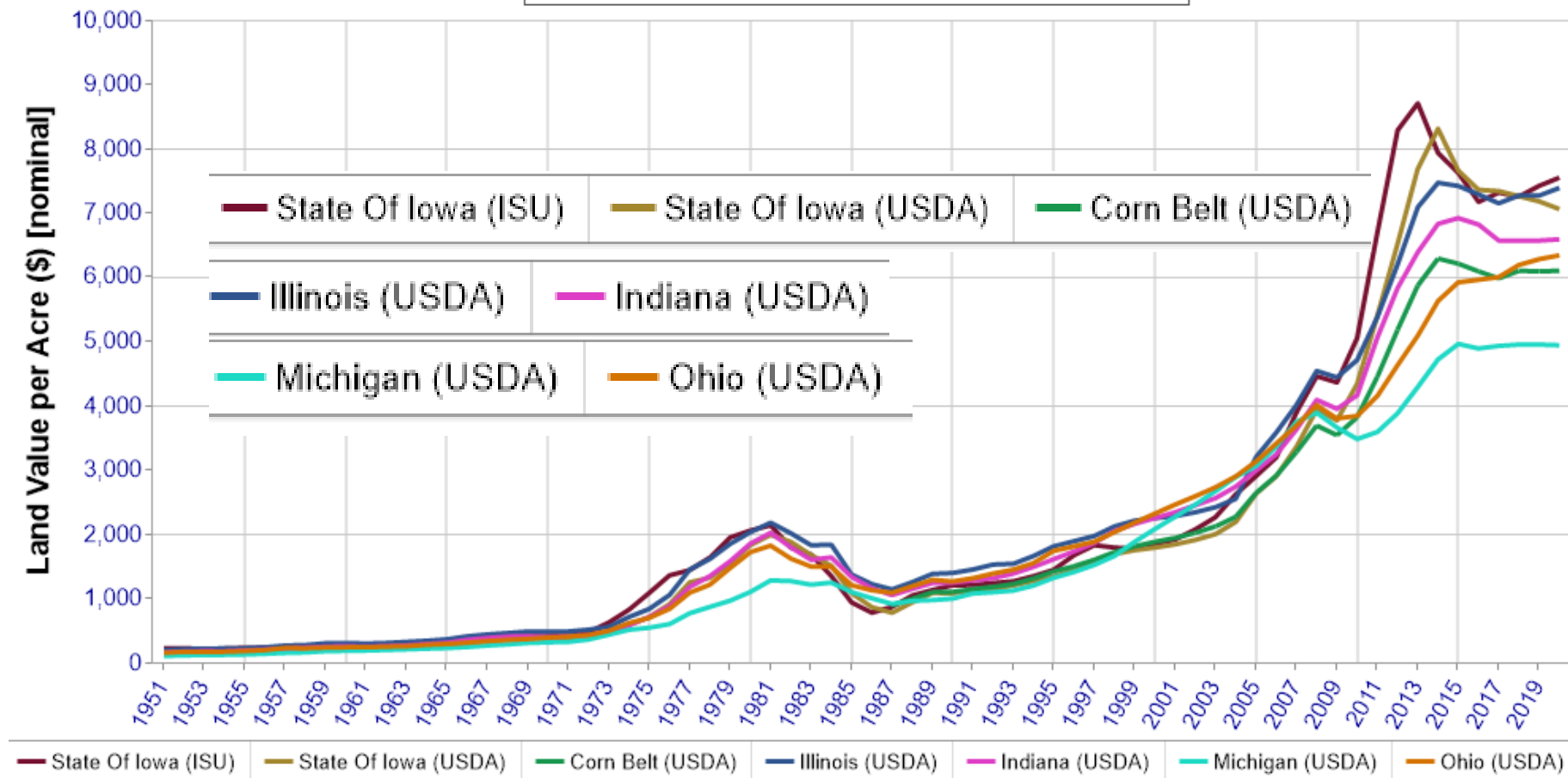
agriculture and the environment (e.g., the 2019 Iowa Lakes Survey)

China Ag center www.card.iastate.edu/china



IOWA STATE UNIVERSITY
Extension and Outreach

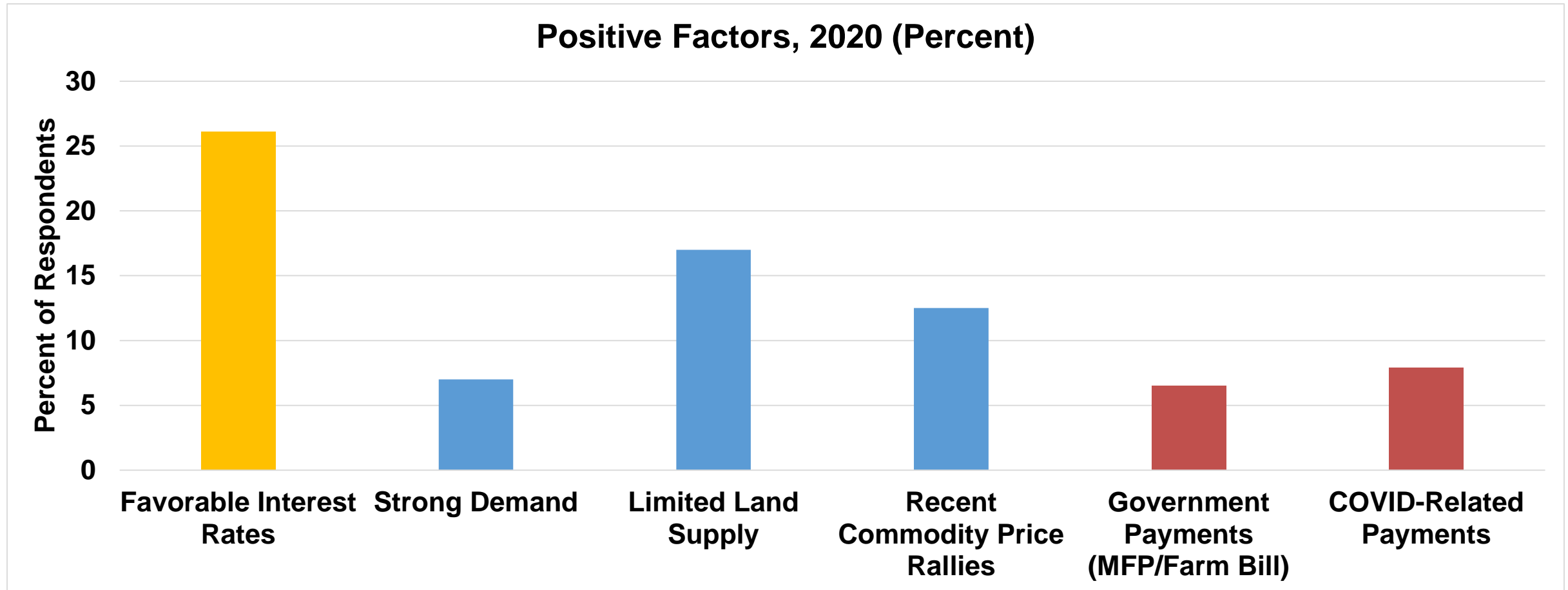
Land Value History for State Of Iowa (1951-2020)



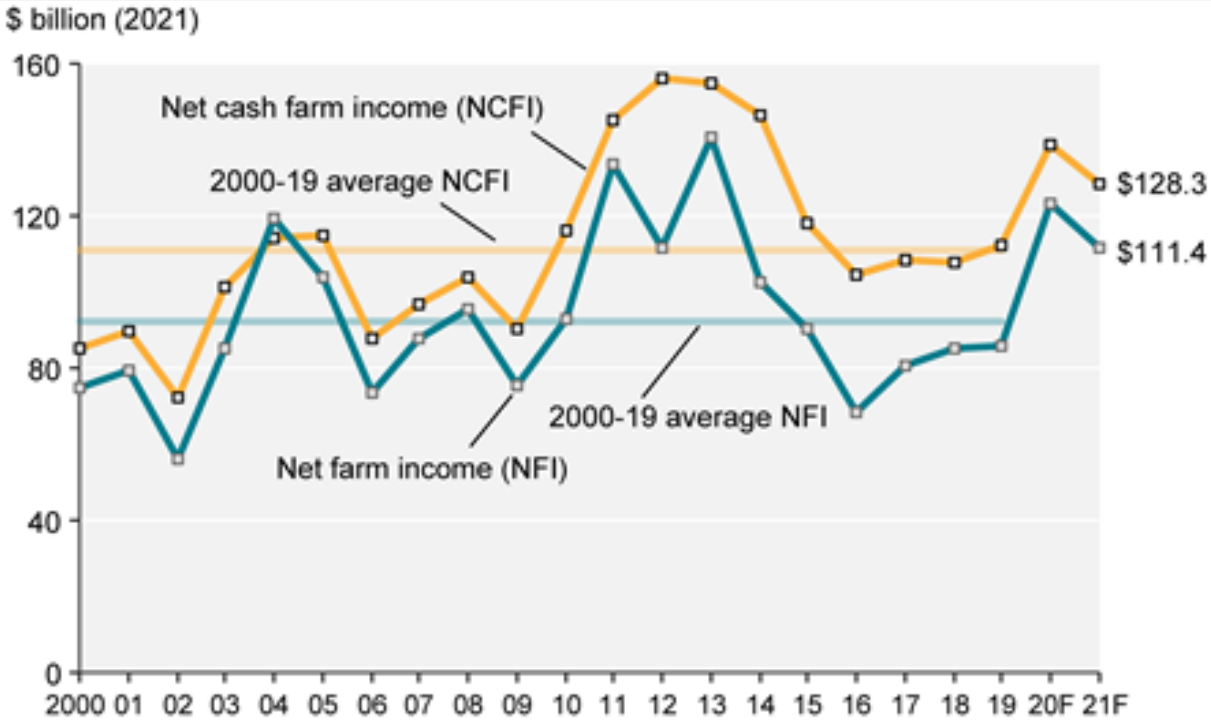
Iowa Land Value Survey (Nov 2019 to Nov 2020)

Avg: +1.7%
High: -0.1%
Med: +2.6%
Low: +6.7%

Major Positive Factors Affecting Iowa Farmland Market, 2020

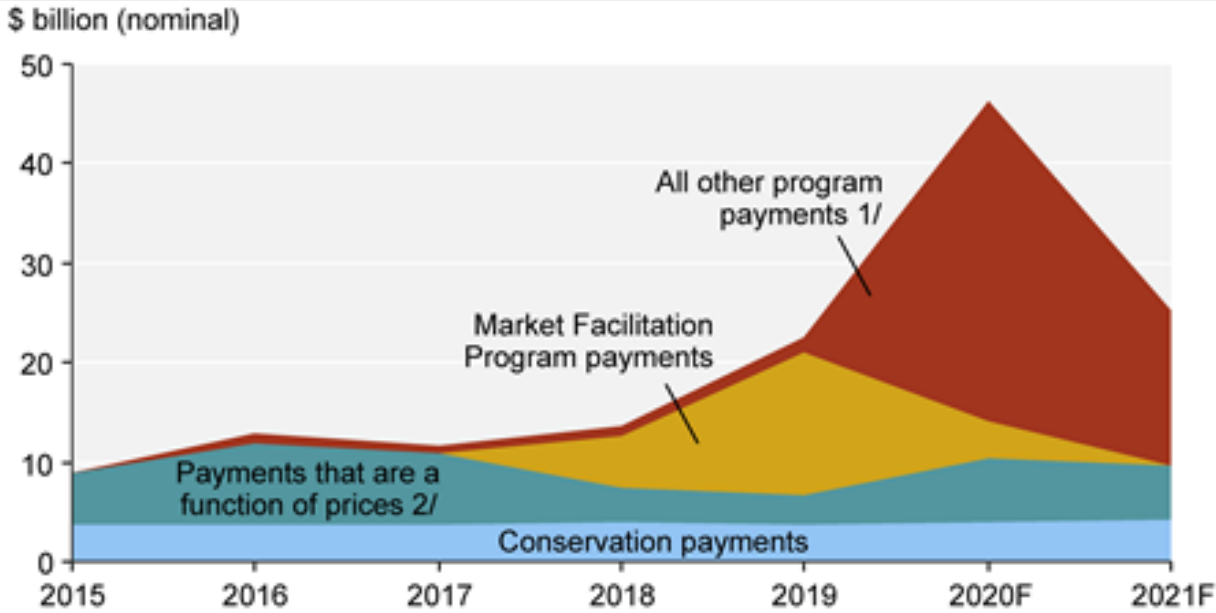


U.S. net farm income and net cash farm income, 2000–21F



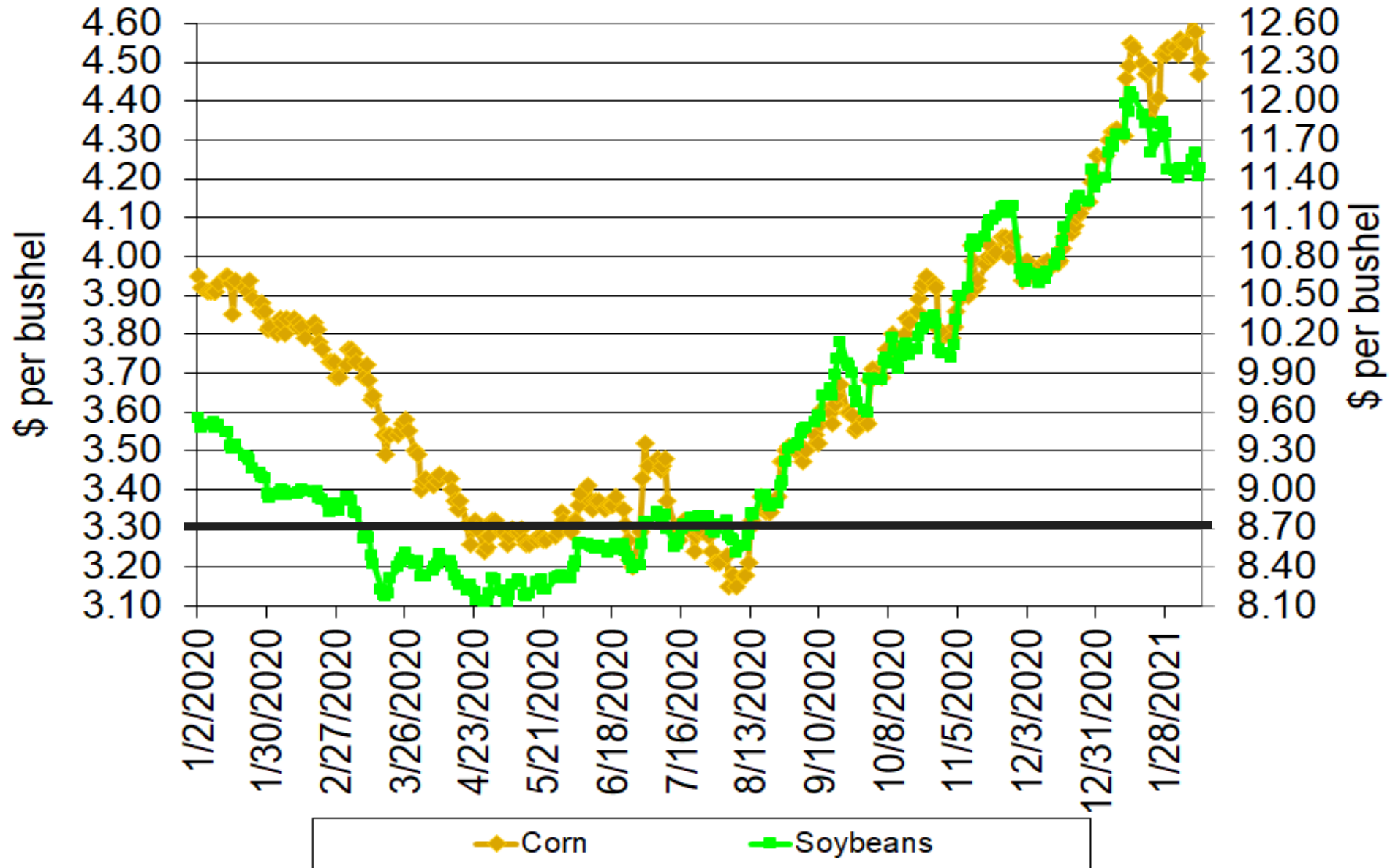
Note: F = forecast. Values are adjusted for inflation using the Gross Domestic Product chain-type price index, 2021=100.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of February 5, 2021.

Direct government payments to farm producers, 2015-21F



Note: F = forecast. 1/ "All other program payments" includes supplemental and ad hoc disaster assistance, which in 2020 and 2021 includes payments from the Coronavirus Food Assistance Program and the Paycheck Protection Program, and in 2021 also includes payments under the Consolidated Appropriations Act, 2021. 2/ Includes Price Loss Coverage, Agriculture Risk Coverage, loan deficiency payments (excluding grazeout payments), marketing loan gains, certificate exchange gains, and dairy payments.
Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.
Data as of February 5, 2021.

2020/21 Crop Prices

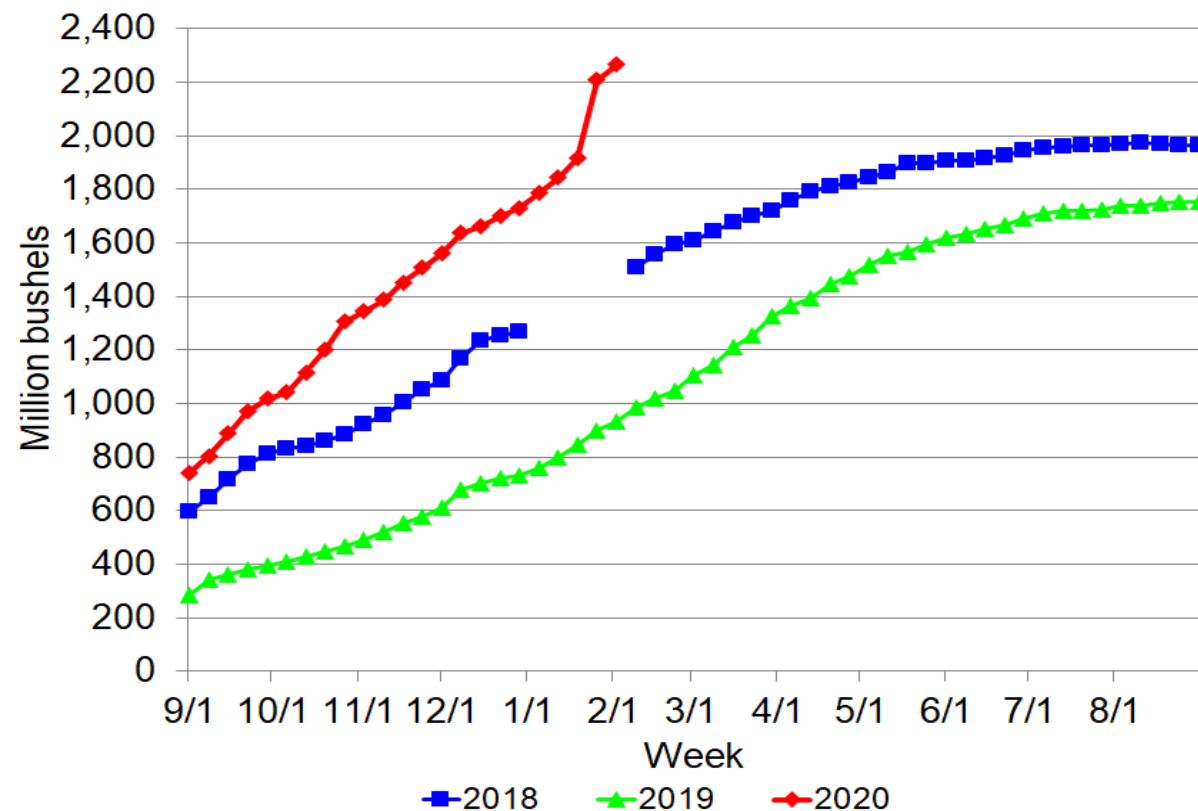


Source:
Chad Hart, ISU

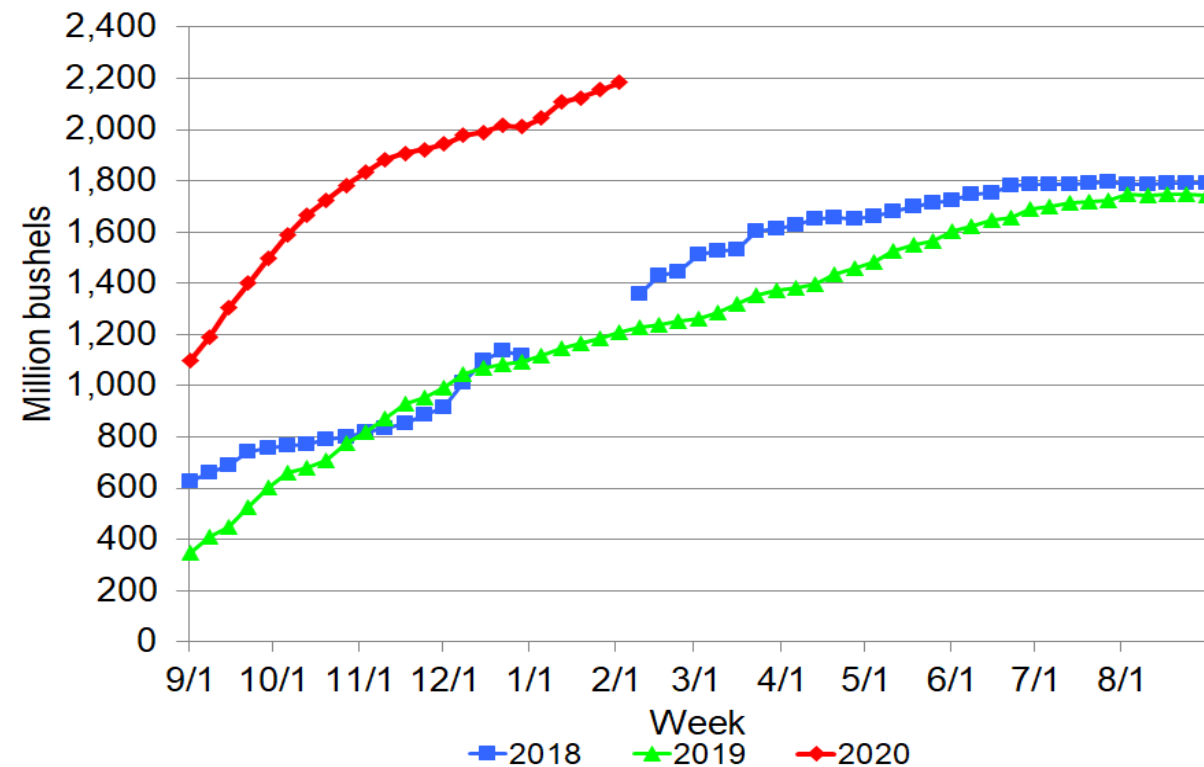
Based on futures
prices

Recent commodity price rallies driven by surging exports, not record gov't payments

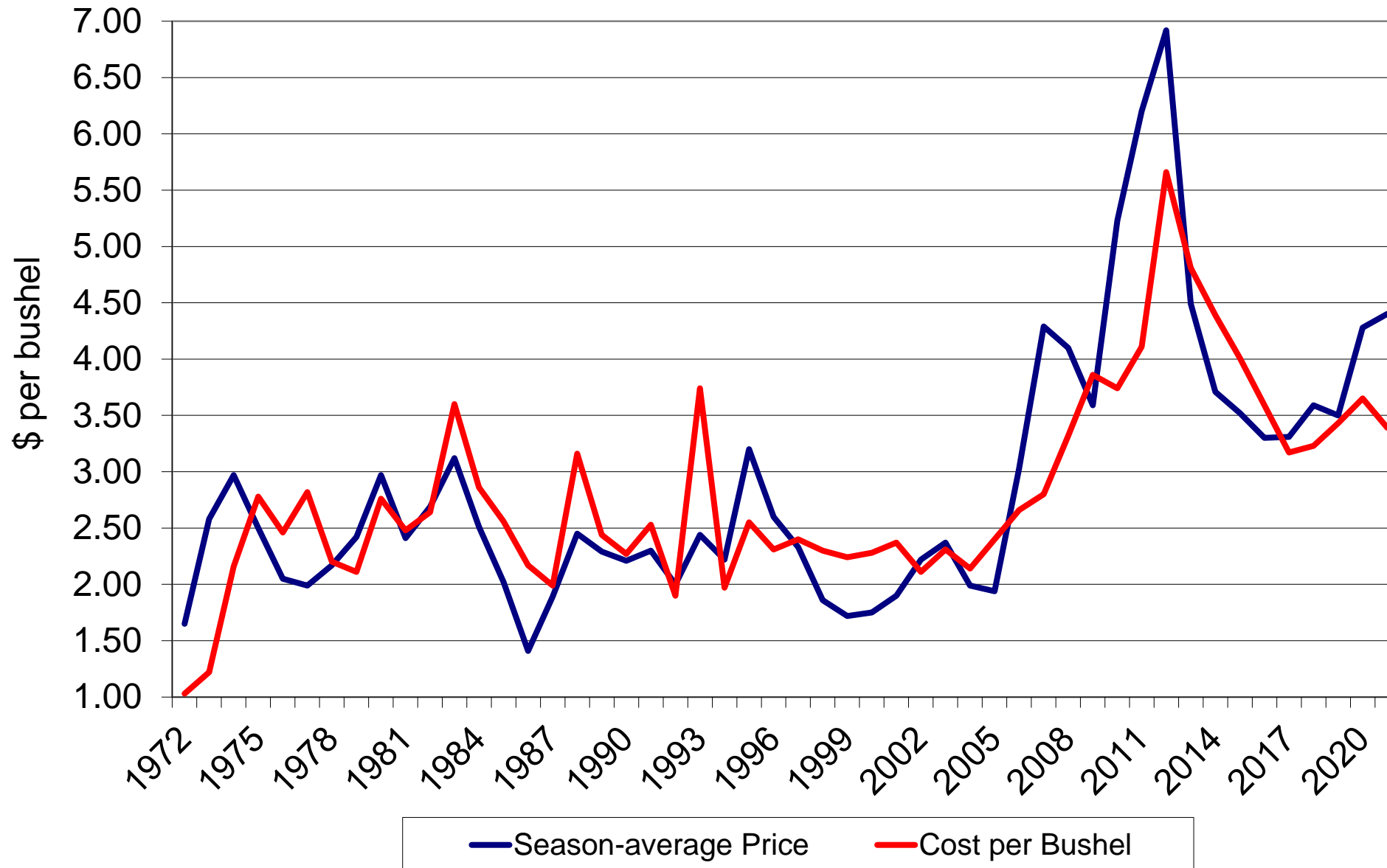
Corn Export Sales



Soybean Export Sales

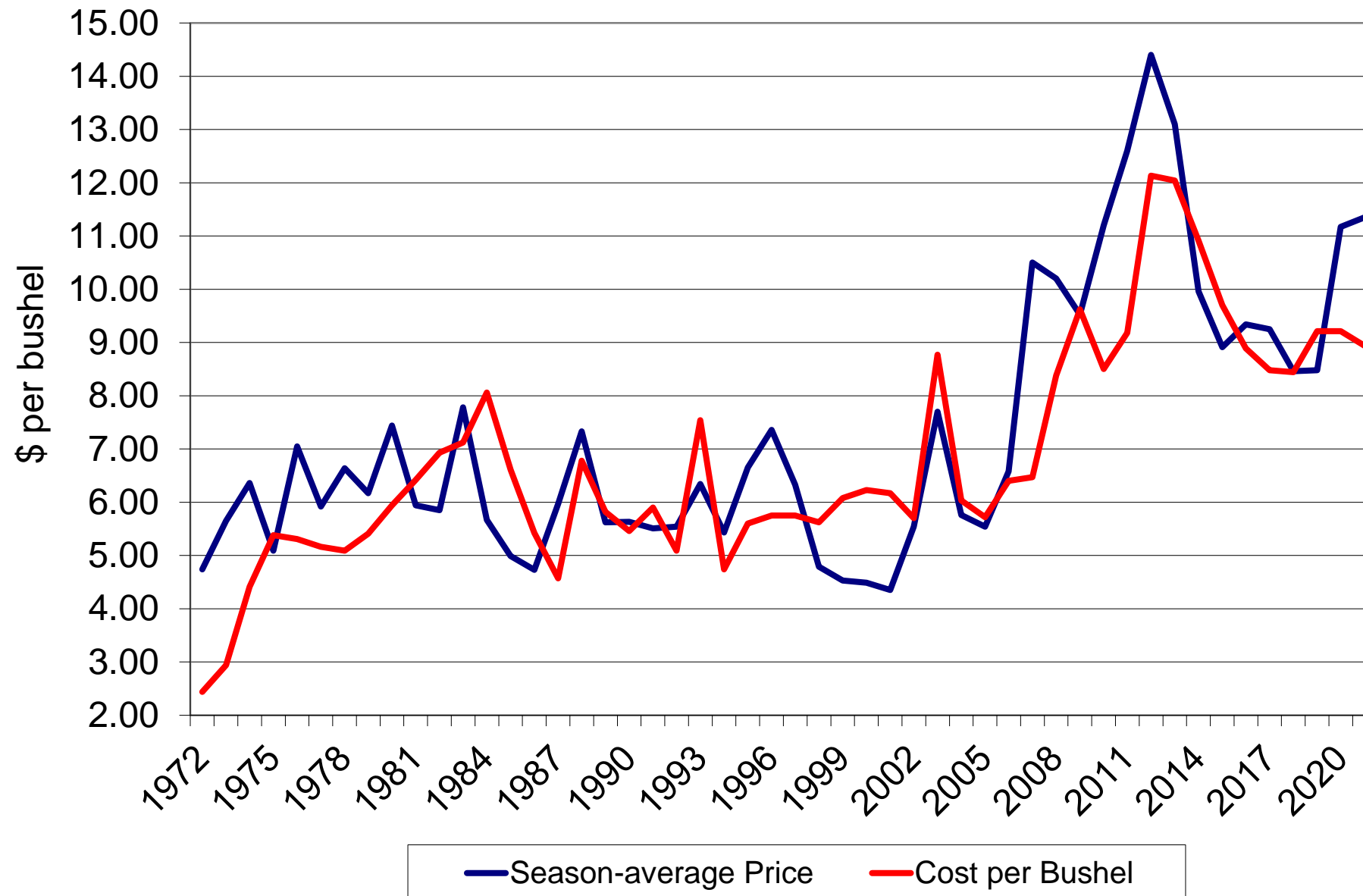


Iowa Corn Revenue & Cost Per Bushel



Source:
Chad Hart, ISU

Iowa Soybean Revenue & Cost Per Bushel



Source:
Chad Hart, ISU

Table 1. Revenue and Cost Projections for Central Illinois, High-Productivity Farmland, 2018 - 2020P

	Corn				Soybeans			
	2018	2019	2020P	2021P	2018	2019	2020P	2021P
Yield per acre	237	208	215	217	74	64	68	68
Price per bu	\$3.60	\$3.55	\$3.25	\$3.45	\$9.36	\$8.55	\$8.25	\$8.35
	\$/acre	\$/acre	\$/acre	\$/acre	\$/acre	\$/acre	\$/acre	\$/acre
Crop revenue	\$853	\$738	\$699	\$749	\$693	\$547	\$561	\$568
ARC/PLC	0	10	35	30	0	10	35	30
MFP payments	1	82	0	0	121	82	0	0
CFAP payments	0	28	0	0	0	12	0	0
Other Federal aid ¹	0	0	80	0	0	0	80	0
Crop insurance proceeds	<u>2</u>	<u>14</u>	<u>0</u>	<u>0</u>	<u>14</u>	<u>15</u>	<u>0</u>	<u>0</u>
Gross Revenue	\$856	\$872	\$814	\$779	\$828	\$666	\$676	\$598
Non-land Cost	574	606	571	571	353	372	359	359
Operator and Land Return	\$282	\$266	\$243	\$208	\$475	\$294	\$317	\$239
Cash rent	274	275	275	275	274	275	275	275
Farmer Return	\$8	-\$9	-\$32	-\$67	\$201	\$19	\$42	-\$36
Ad hoc Federal aid ²	\$1	\$110	\$80	\$0	\$121	\$94	\$80	\$0
Ad hoc Federal aid as a percent of gross revenue	0%	13%	10%	0%	15%	14%	12%	0%
Farmer return without ad hoc Federal aid	\$7	-\$119	-\$112	-\$67	\$80	-\$75	-\$38	-\$36

Gov't payments helped boost farm income / mitigate losses

farmdocDAILY

Soybean Uses, and Future Farm Profitability

Gary Schnitkey, Krista Swanson, Jonathan Coppess, Nick Paulson

Department of Agricultural and Consumer Economics

University of Illinois

Carl Zulauf

Department of Agricultural, Environmental and Development Economics

Ohio State University

June 10, 2020



CARD

Center for Agricultural and Rural Development

The impacts of interest rate changes on US Midwest farmland values

Albulena Basha, Wendong Zhang, Chad Hart ▾

Agricultural Finance Review

ISSN: 0002-1466

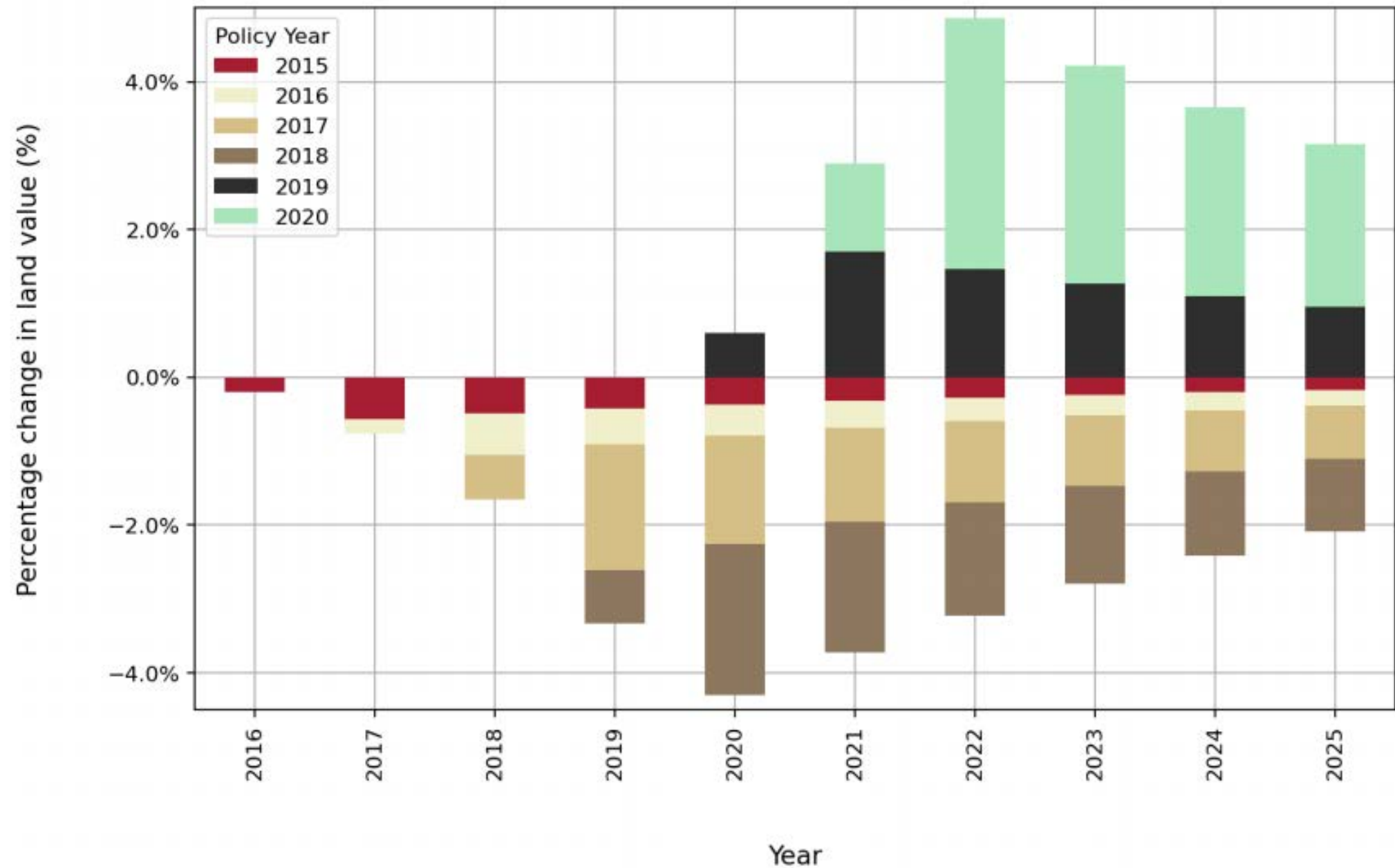
Publication date: 8 February 2021



<https://www.card.iastate.edu/products/publications/synopsis/?p=1317>

- We find that changes in the federal funds rate have long-lasting impacts on farmland values, as it takes at least a decade for the full effects of an interest rate change to be capitalized in farmland values. **The results show that the three recent federal funds rate cuts in 2019 were not sufficient to offset the downward pressures from the 2015–2018 interest rate hikes, but the 2020 cut is.** The combined effect of the Federal Reserve's recent interest rate moves on farmland values will be positive for some time starting in 2022.
- **It takes multiple years, at least a decade, for the full effects of interest rate changes to capitalize in the farmland market**

Figure 3. The short- and long-term impacts of recent Federal Reserve interest rate moves on I-states' farmland values.



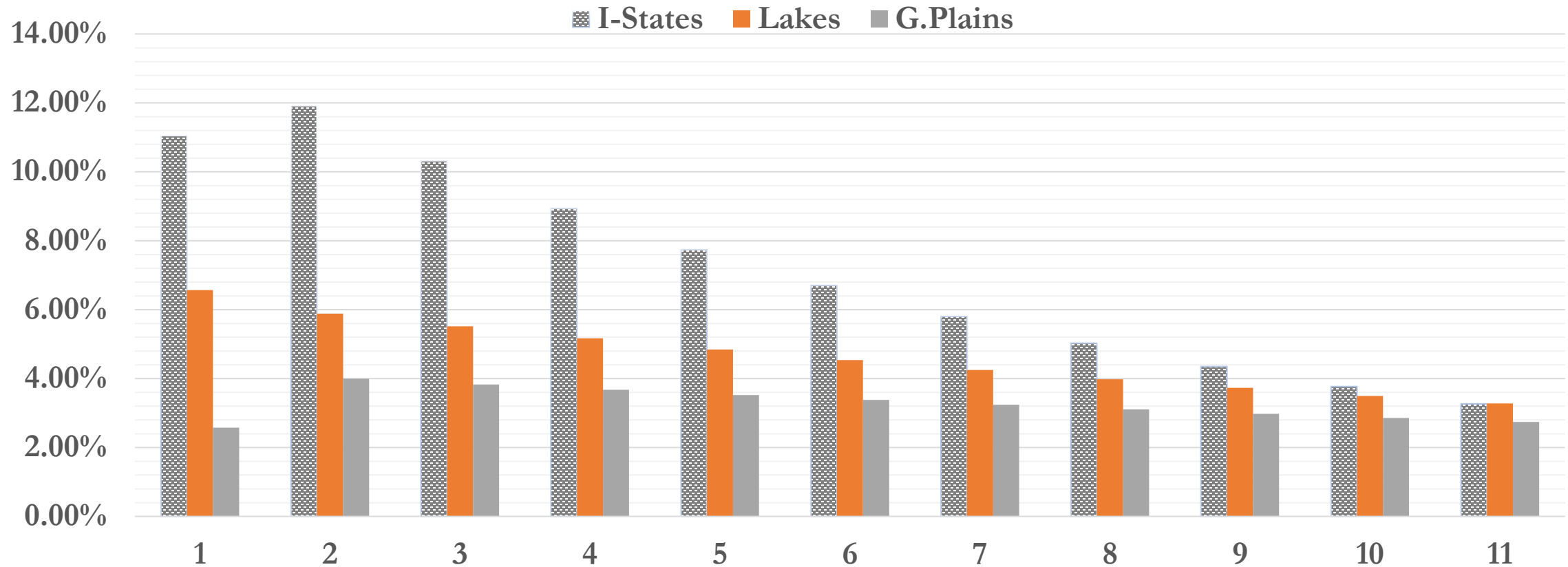
Effects of farm income changes on land values

- **Farmland values in the three I-states grow 1.55% with a 10% increase in contemporaneous gross farm income. (1.69% Lakes states; 1.10% G. Plains States)**
- In contrast, we find the lagged farm income to be not statistically significant in the model, which stems from the fact that ***farmland values quickly capitalize on changes in farm income***, either induced by government payments or by commodity price fluctuations.

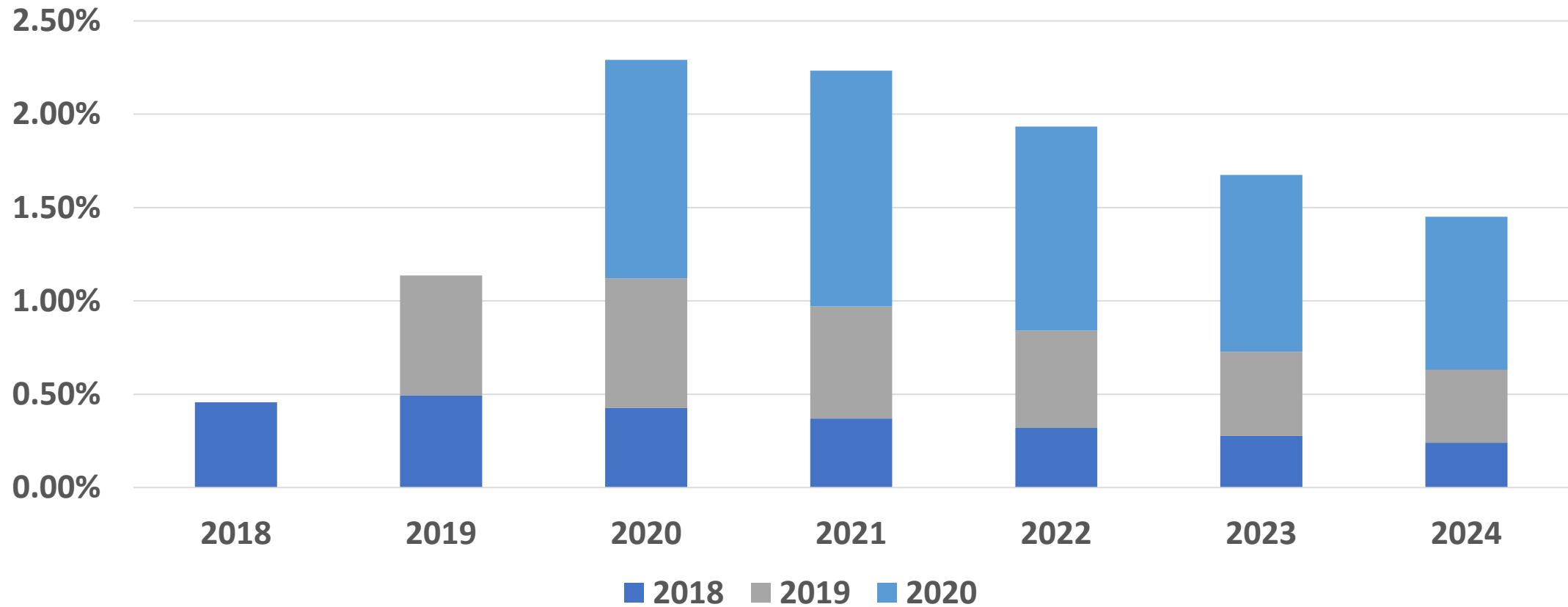
Gross Farm Income (\$ Mil.)				
	Illinois	Indiana	Iowa	
2018	19,300	12,200	30,700	
2019	19,800	12,500	31,400	
2020	21,213	13,392	33,641	
Major Ad Hoc Government Payments (\$ Mil.)				
	Illinois	Indiana	Iowa	
MFP 2018	778	377	665	
MFP 2019	975	508	1,034	
CFAP 1 2020	488	251	978	
CFAP 2 2020	733	381	1,063	
MFP 2020	488	254	517	

The projected 2021 government payments is similar in magnitude to 2019

Median lag length: how many years does it take for farm income impacts to be fully capitalized in the land market (I states: half effect within 5 years)

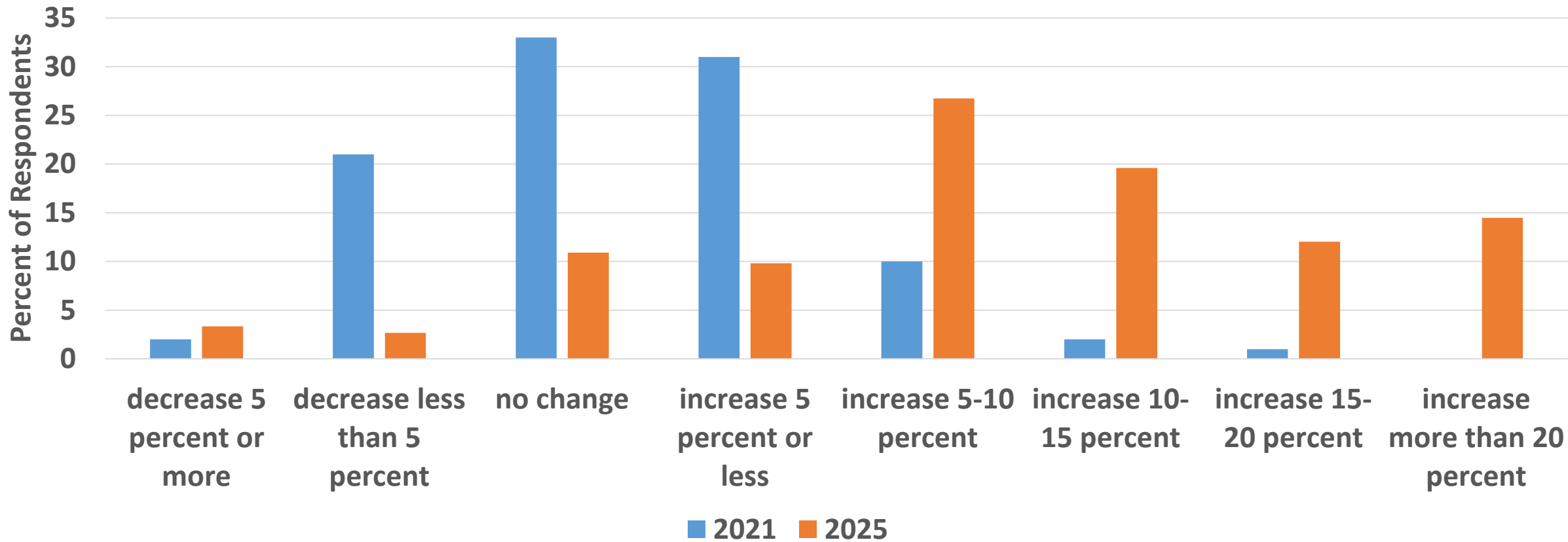


Impacts of 2018-2020 ad hoc gov't payments on I-states land values



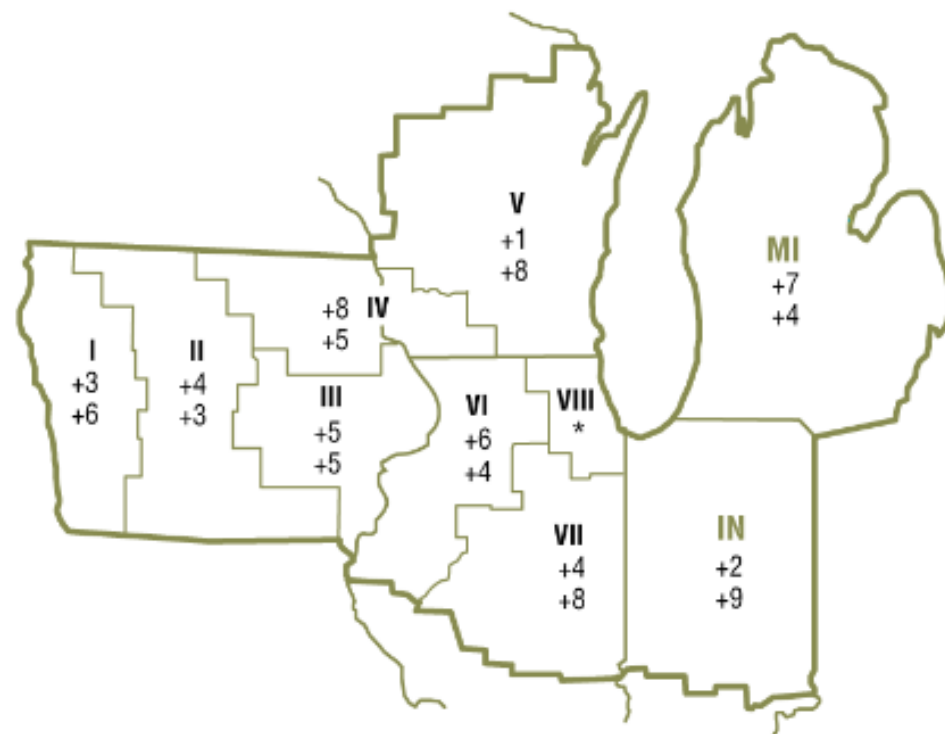
The projected 2021 government payments is similar in magnitude to 2019

Iowa Land value predictions one & five years from Nov 2020, more optimism over time



Percent change in dollar value of “good” farmland

	October 1, 2020 to January 1, 2021	January 1, 2020 to January 1, 2021
Illinois	+4	+6
Indiana	+2	+9
Iowa	+6	+5
Michigan	+7	+4
Wisconsin	+2	+7
Seventh District	+4	+6



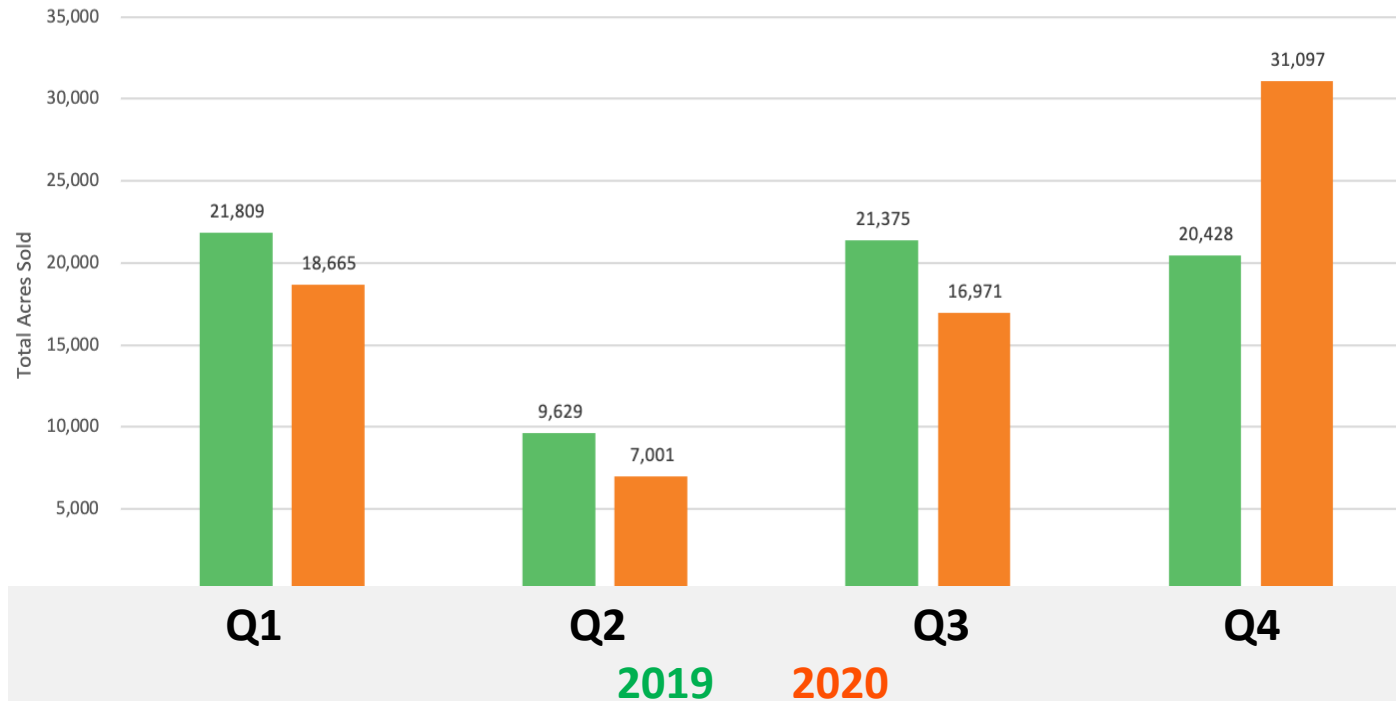
Top: October 1, 2020 to January 1, 2021

Bottom: January 1, 2020 to January 1, 2021

*Insufficient response.

Q4 2020 saw a surge in both land prices and acres sold

Total Acres Sold at Auction



\$/Tillable CSR2 Point from Iowa Land Auctions

Year	\$/Tillable CSR2
2020	\$116
2019	\$111
2018	\$110

Thank You!



IOWA STATE UNIVERSITY
Extension and Outreach

CARD
Center for Agricultural and Rural Development

IOWA STATE UNIVERSITY

Home Products/Output News Tools Research Areas Ag Policy Review Farmland China Ag Conservation People About

Overview ISU Survey Graphs Interactive Maps Ownership Downloads Resources FAQ News History Archive

2019 ISU Land Value Survey


2019 ISU Land Value Survey


The 2019 ISU Land Value Survey shows a 2.3 percent increase in average Iowa farmland values from November 2018 to November 2019. The average statewide value of an acre of farmland is now estimated at \$7,432. This modest increase, which barely exceeds the pace of inflation, is the second rise over the past six years, but still represents a 15 percent decrease from the 2013 peak in nominal land values, or a 23 percent drop in inflation-adjusted values.

2017 Iowa Farmland Ownership & Tenure Survey Paper Copy Available for Order (\$5 Only)

The new, 60-page **2017 Iowa Farmland Ownership and Tenure Survey report is available for order at the Extension Store** for only \$5 each paper copy. This is a unique survey across the nation which provides statistically representative information on many aspects of land ownership, tenure and transitions in Iowa. For example, the survey finds that 60% of Iowa land is owned by people 65 years or older, 82% of Iowa land is owned free of debt, and 29% of all acres is primarily owned for family or sentimental reasons.

1. What are you interested in?

 **find more land value data**

 **recent analysis & contact**

Contact Us | Site Map | Links | Staff Intranet

Iowa State University
578 Heady Hall
518 Farm House Lane
Ames, Iowa 50011-1054

Phone: (515) 294-1183
FAX: (515) 294-6336

© Copyright 2020 CARD

CARD is a center located within the **College of Agriculture and Life Sciences** at **Iowa State University**.

www.card.iastate.edu/farmland

Wendong Zhang

Assistant Professor and Extension Economist
478C Heady Hall, Iowa State University
515-294-2536
wdzhang@iastate.edu

This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to www.extension.iastate.edu/diversity/ext.

CARD
Center for Agricultural and Rural Development

IOWA STATE UNIVERSITY

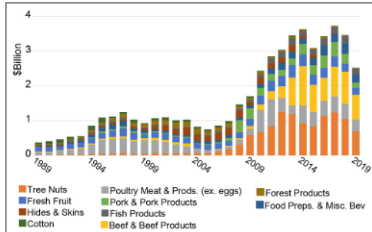
Home Products/Output News Tools Research Areas Ag Policy Review Farmland China Ag Conservation People About

中文版 Home Publications Presentations COVID-19 Trade War Data Resources News

China Ag Center · Publications

Xi He and Wendong Zhang, 2020. "Implications of Hong Kong's Special Status Revocation for Agricultural Trade between the United States, Hong Kong, and Mainland China." *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

In 1992, the United States granted Hong Kong status as a customs territory separate from mainland China. On June 29, 2020, however, the US Department of Commerce withdrew that status due to recent tensions between China and the United States. Hong Kong, as the world's largest re-exporting port, plays a large intermediary role in US-China trade, and the revocation of its special status may provoke China into taking retaliatory economic and/or political actions. He and Zhang examine trends in Hong Kong's import/export of US agricultural products and how that trade may be affected. They find that the revocation itself is not likely to directly affect US-China agricultural trade prospects much if neither China nor the United States responds with further actions.



Chen-Ti Chen, Tao Xiong, and Wendong Zhang, 2020. "Large Hog Companies Gain from China's Ongoing African Swine Fever." *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Since November 2018, China has reduced its hog and sow inventory by almost 32% due to ongoing outbreaks of African Swine Fever (ASF).



www.card.iastate.edu/china

CARD Policy Briefs

IOWA STATE UNIVERSITY

February 2021 20-PB 29

China's Agricultural Imports under the Phase One Deal: Is Success Possible?

Xi He
Dermot Hayes
Wendong Zhang

Table 1. China's Imports of Key Commodities 2017 and 2020

	2017 Jan–Dec			2020 Jan–Dec		
	US	Non-US countries	US share	US	Non-US countries	US share
<i>China's total import value (\$Million)</i>						
Corn	160	442	26.55%	959	1532	38.50%
Soybeans	13940	25698	35.17%	10634	28904	26.90%
Cotton	983	1207	44.88%	1466	1869	43.96%
Sorghum	957	69	93.26%	978	135	87.90%
Peanuts	62	268	18.74%	203	941	17.77%
Pork	1162	3217	26.53%	1695	17198	8.97%
Beef	25	3116	0.80%	228	10000	2.23%
Poultry	0	1032	0.00%	750	2748	21.44%
Dairy	1087	8203	11.71%	479	9659	4.73%
Ethanol	1	29	3.09%	15	21	41.18%
Total agricultural and related products	24,000	101,860	19.07%	27,300	143,501	15.98%



CARD Policy Briefs

IOWA STATE UNIVERSITY

February 2021 20-PB 29

China's Agricultural Imports under the Phase One Deal: Is Success Possible?

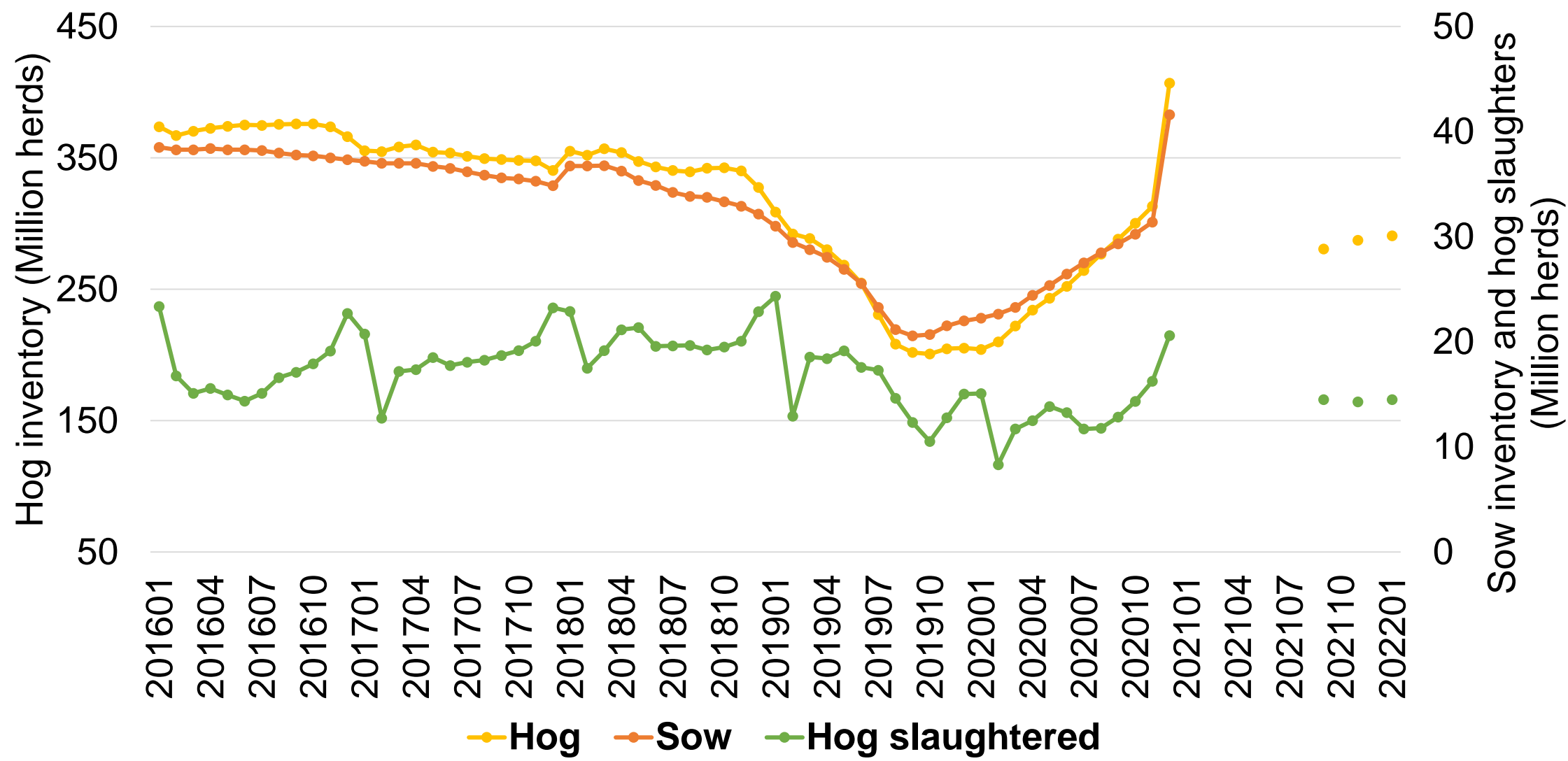
Xi He
Dermot Hayes
Wendong Zhang

Table 3. China's Predicted Agricultural Imports of Key Commodities from February 15, 2020, to February 14, 2021

	<u>Imports from US</u>		<u>Imports from all sources</u>	
	<u>Value</u> <u>(\$Million)</u>	<u>Quantity (Thousand metric</u> <u>tons)</u>	<u>Value</u> <u>(\$Million)</u>	<u>Quantity (Thousand metric</u> <u>tons)</u>
Corn	3,907	17,690	5,475	24,647
Soybeans	14,520	35,130	40,006	101,884
Cotton	1,501	922	3,172	1,935
Sorghum	1,121	4,828	1,261	5,410
Pork	2,005	1,488	20,567	25,319
Beef	230	28	10,439	2,168
Ethanol	33	78*	54	129*
Poultry	751	423	3,593	1,589
Total ag	35,822		182,130	

Note: Author's estimation based on 2017 seasonal patterns and China's most recent agricultural purchases from the United States, which includes advanced corn and soybeans sales until January 29, 2021. We assume the advanced corn and soybean sales until January 29, 2021, will be delivered in the

China's hog rebuilding progress 2018-2021



China's hog & pork prices 2017-2021

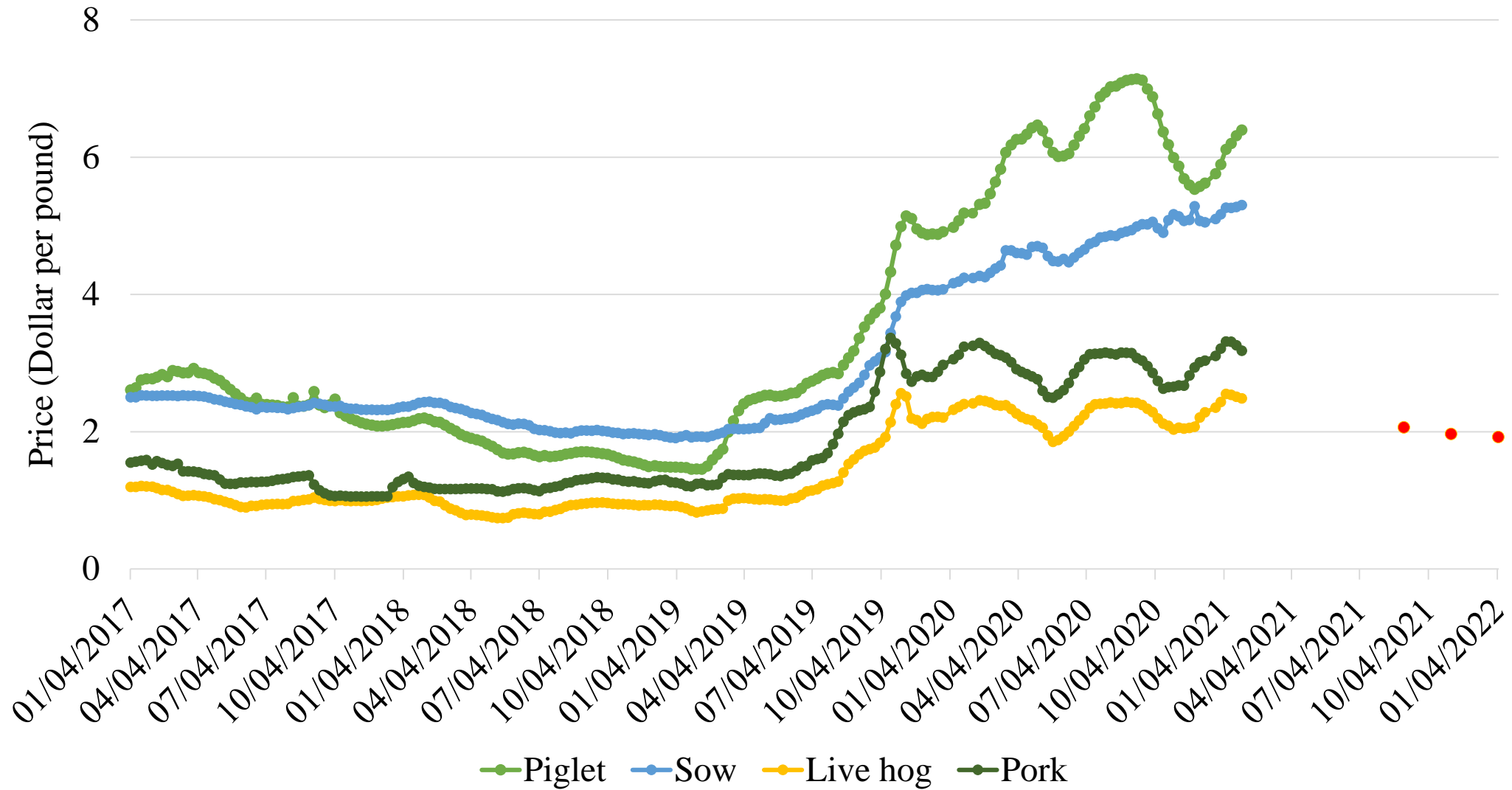


Figure 1. Government Farm Payments to Farms Excluding Conservation and Energy Payments, US, 1975-2020

