

AG OUTLOOK

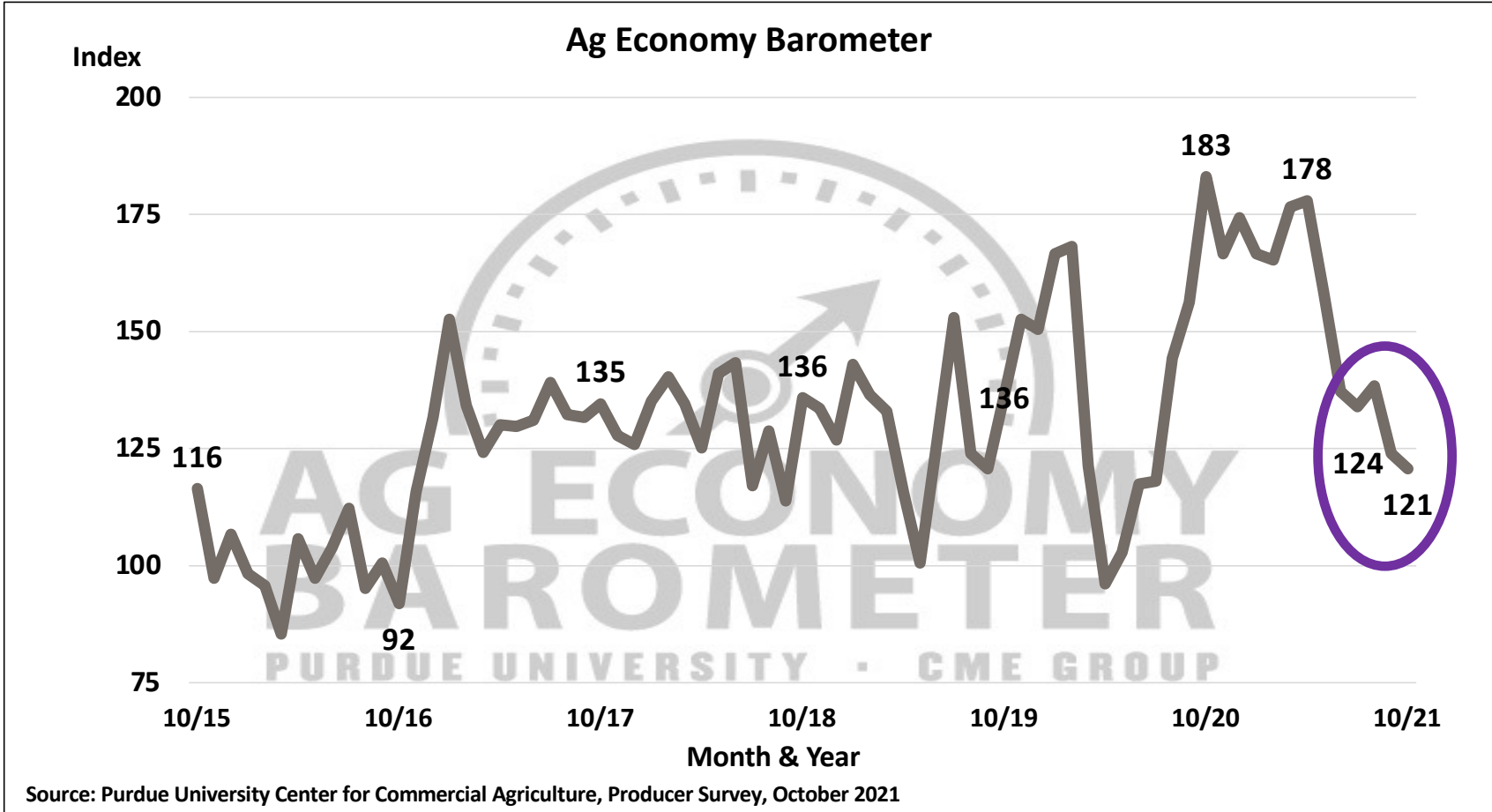
DECEMBER 3, 2021

James Mintert

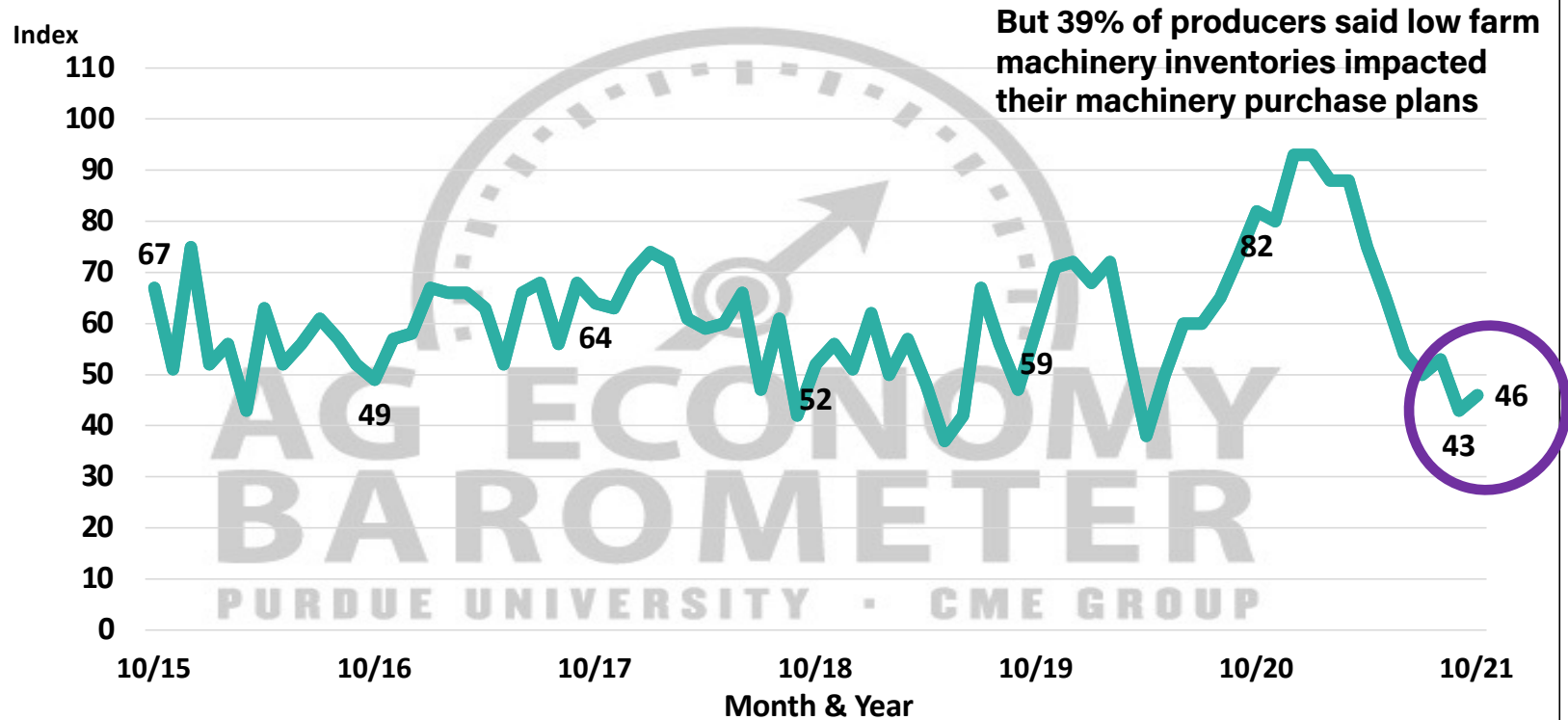
Professor & Director, Center for Commercial Agriculture



Center for Commercial Agriculture

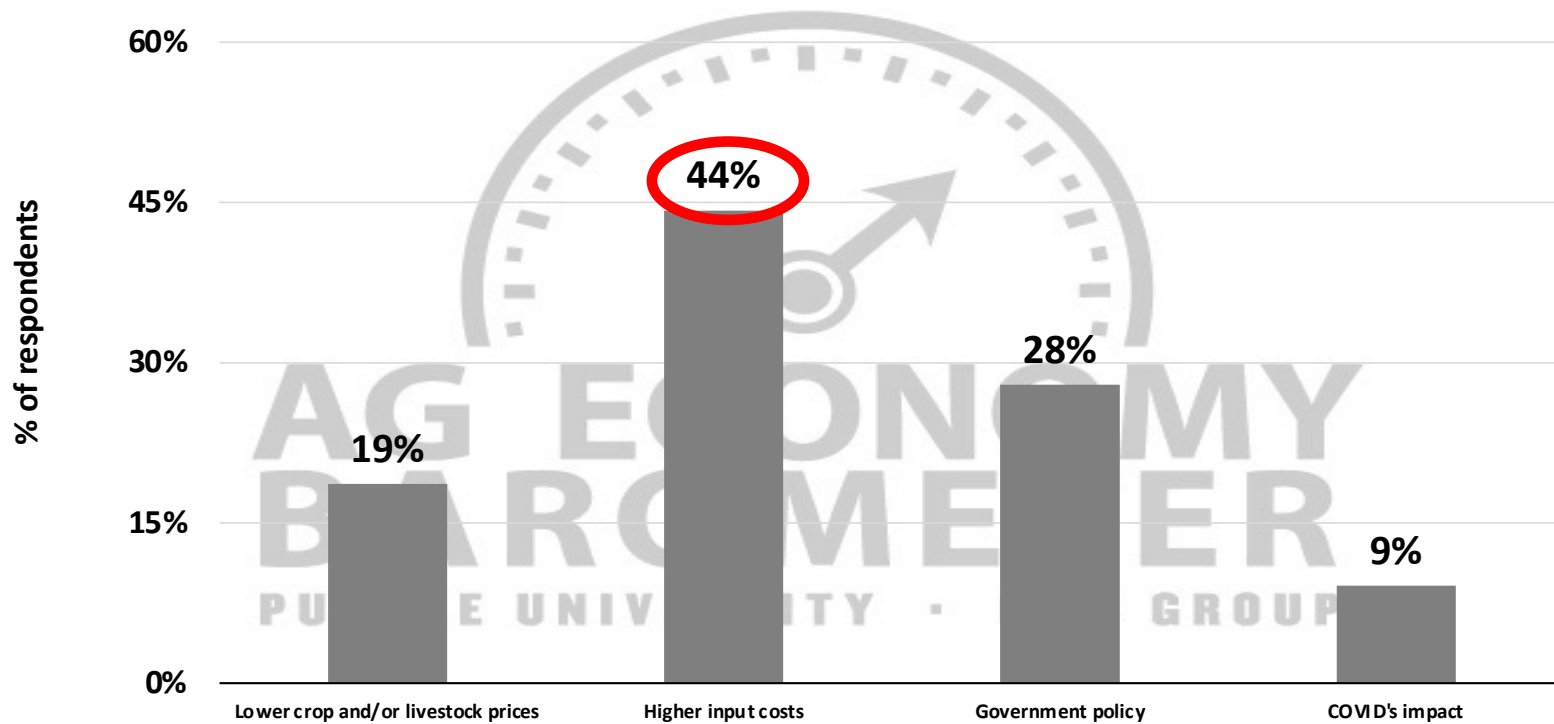


Farm Capital Investment Index



Source: Purdue University Center for Commercial Agriculture, Producer Survey, October 2021

Looking ahead to next year what are your biggest concerns for your farming operation?



Source: Purdue Center for Commercial Agriculture, Producer Survey, October 2021

The average price paid for farm inputs increased by 1.8% per year during the last ten years.
Using this as a frame of reference, by how much do you expect input prices to change during the next 12 months?

% of respondents

50%

6/21 7/21 8/21 9/21 10/21

40%

30%

20%

10%

0%

0 to 2%

2 to 4%

4 to 8%

8 to 12%

> 12%

21%

20%

13%

11%

13%

23%

25%

26%

21%

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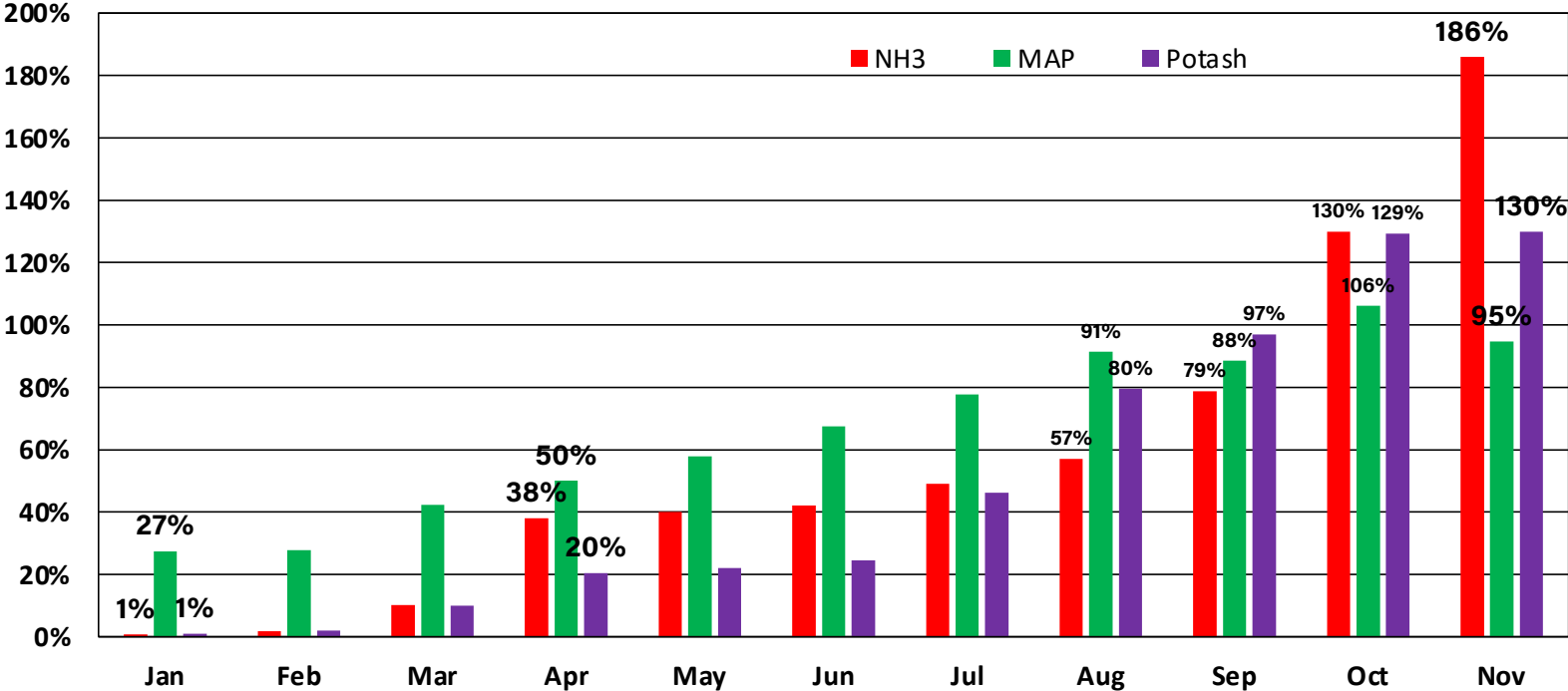
34% 33%

Source: Purdue Center for Commercial Agriculture, Producer Survey, September 2021



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Illinois Monthly Average Fertilizer Price Changes Year-to-Year % Price Change, 2021 vs. 2020



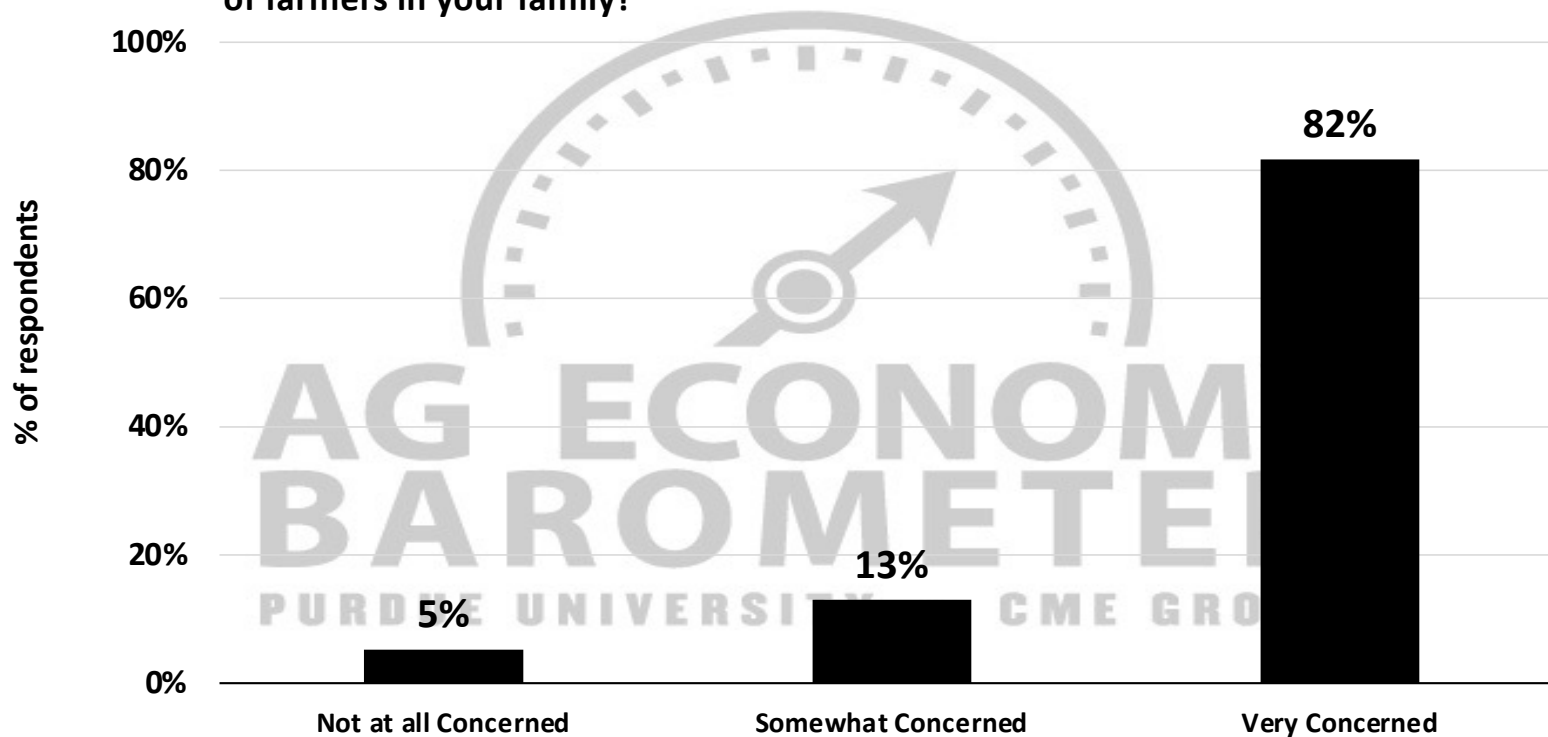
Source: Illinois Production Cost Report, USDA-AMS, GX-GR210

Purdue Center for Commercial Agriculture



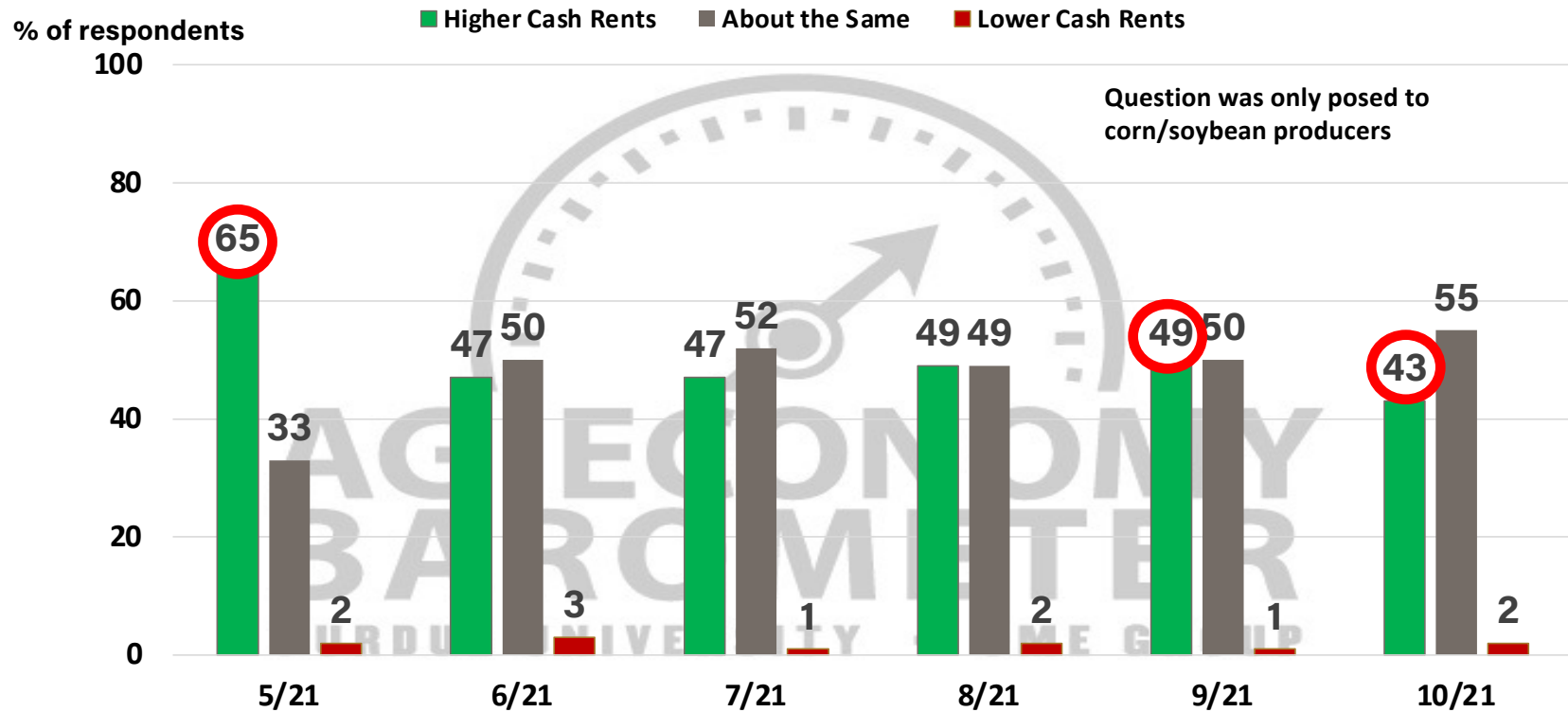
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How concerned are you that changes in estate tax policy currently being considered by Congress will make it more difficult to pass your farm on to the next generation of farmers in your family?



Source: Purdue Center for Commercial Agriculture, Producer Survey, April 2021

Compared to 2021, what are your expectations for cash rents in your area in 2022?

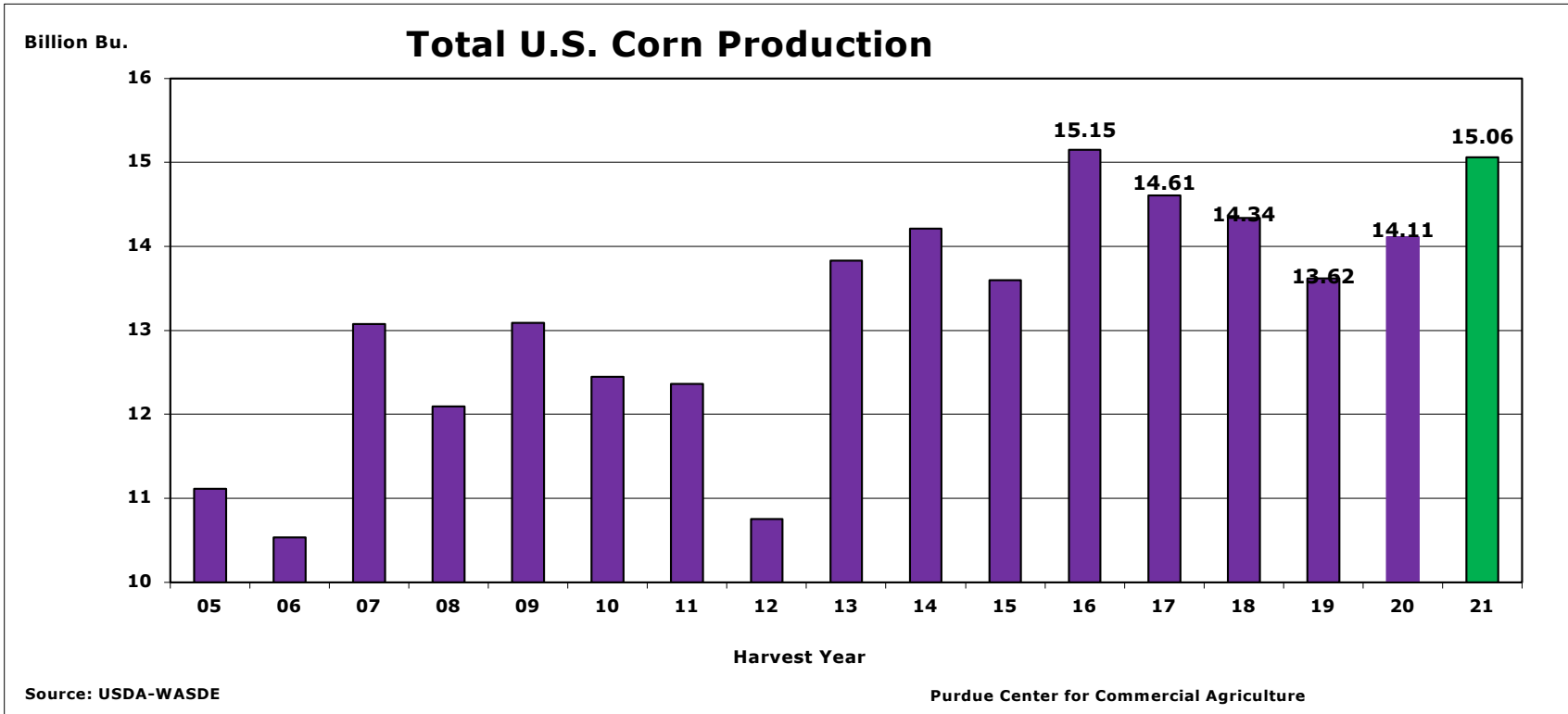


Source: Purdue Center for Commercial Agriculture, Producer Survey, October 2021

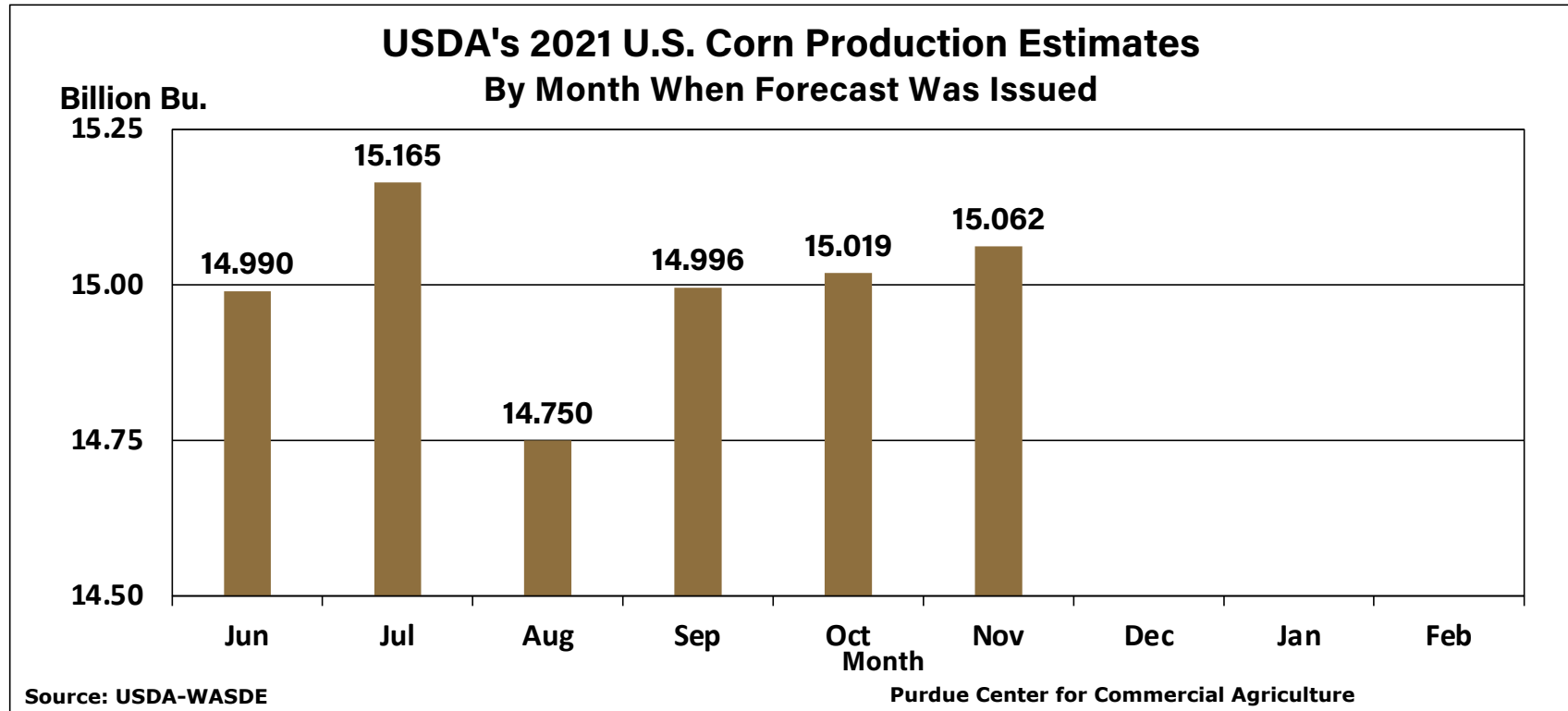


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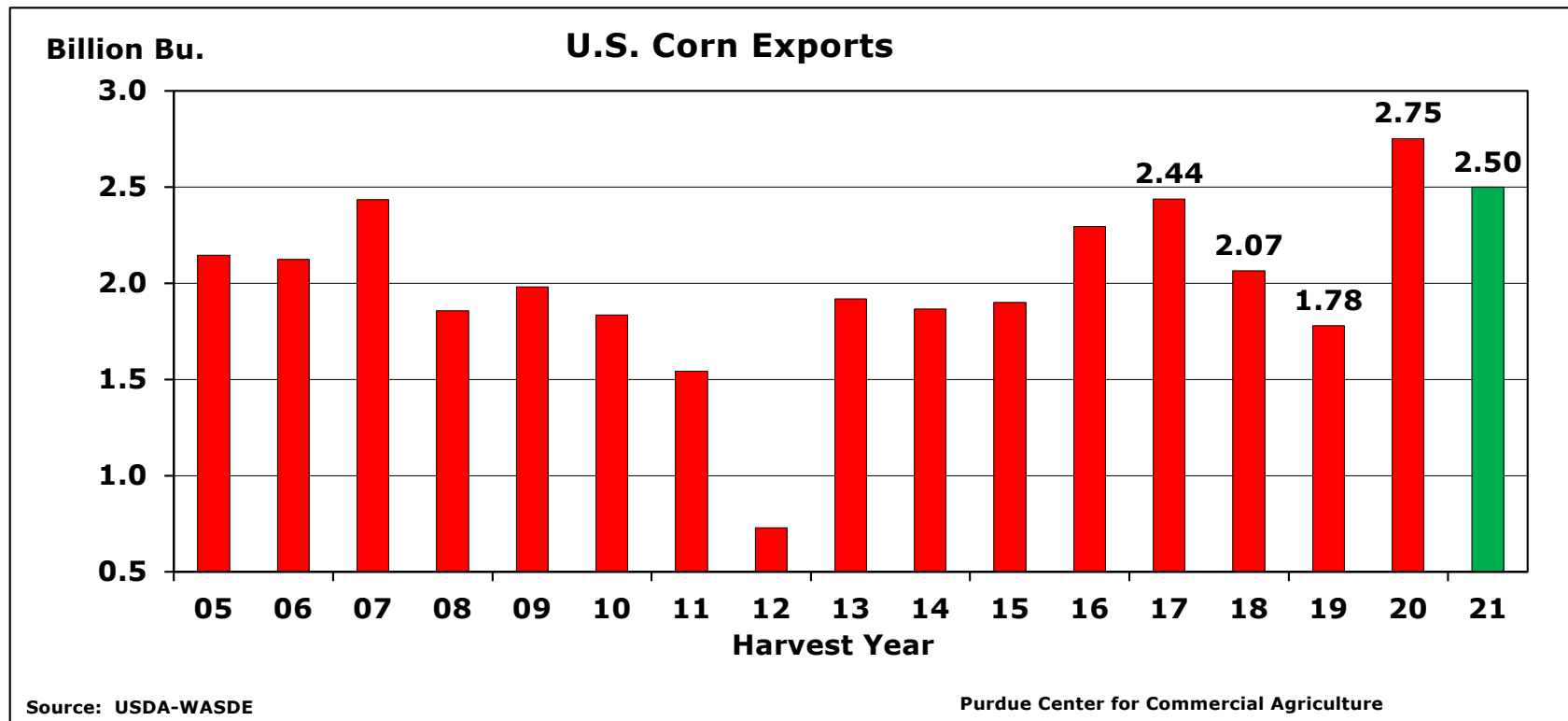
2021 Crop Was Second Largest On Record



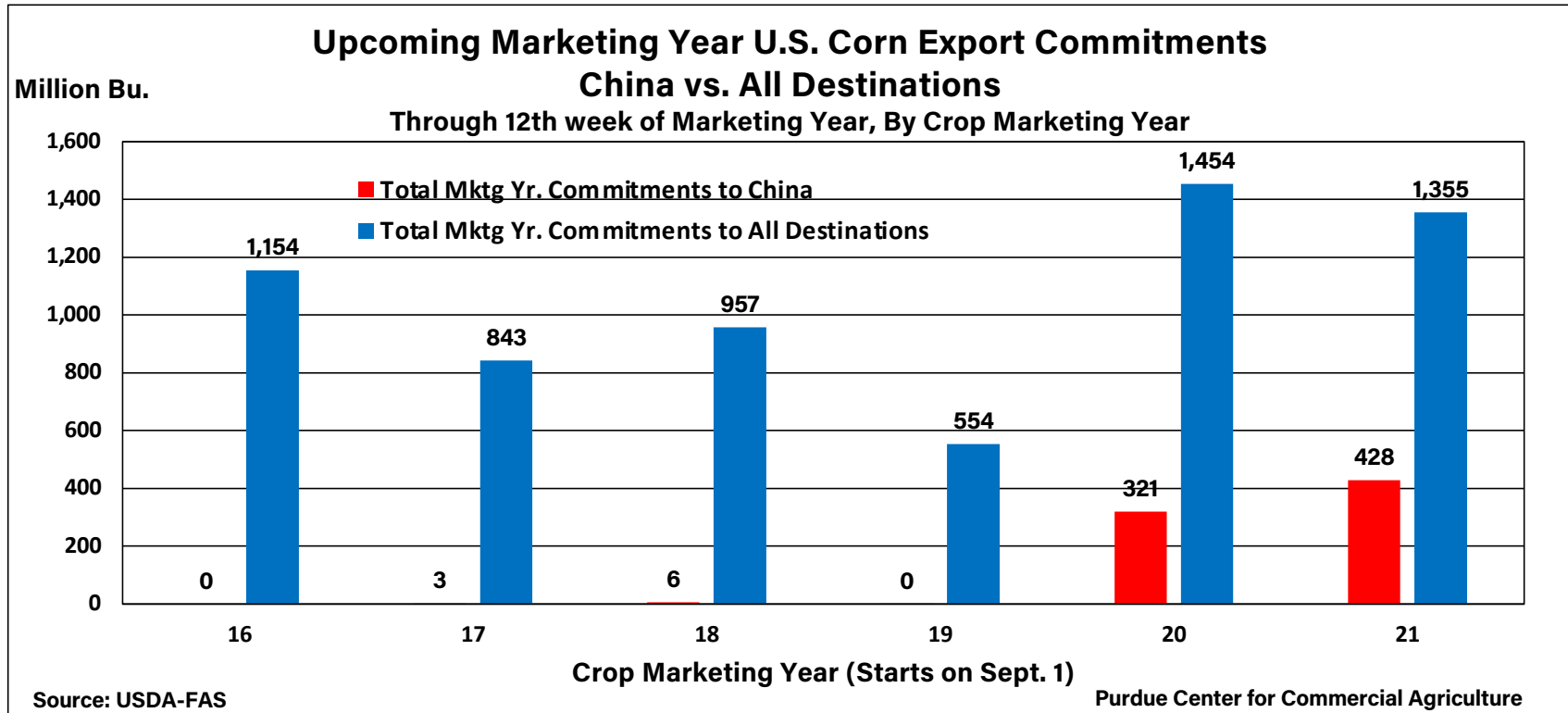
***Small Yield Increase Pushed 2021 Production Estimate Up By Just 43 Million Bushels
But Production Estimate is Up 312 Million Bushels Compared to August***



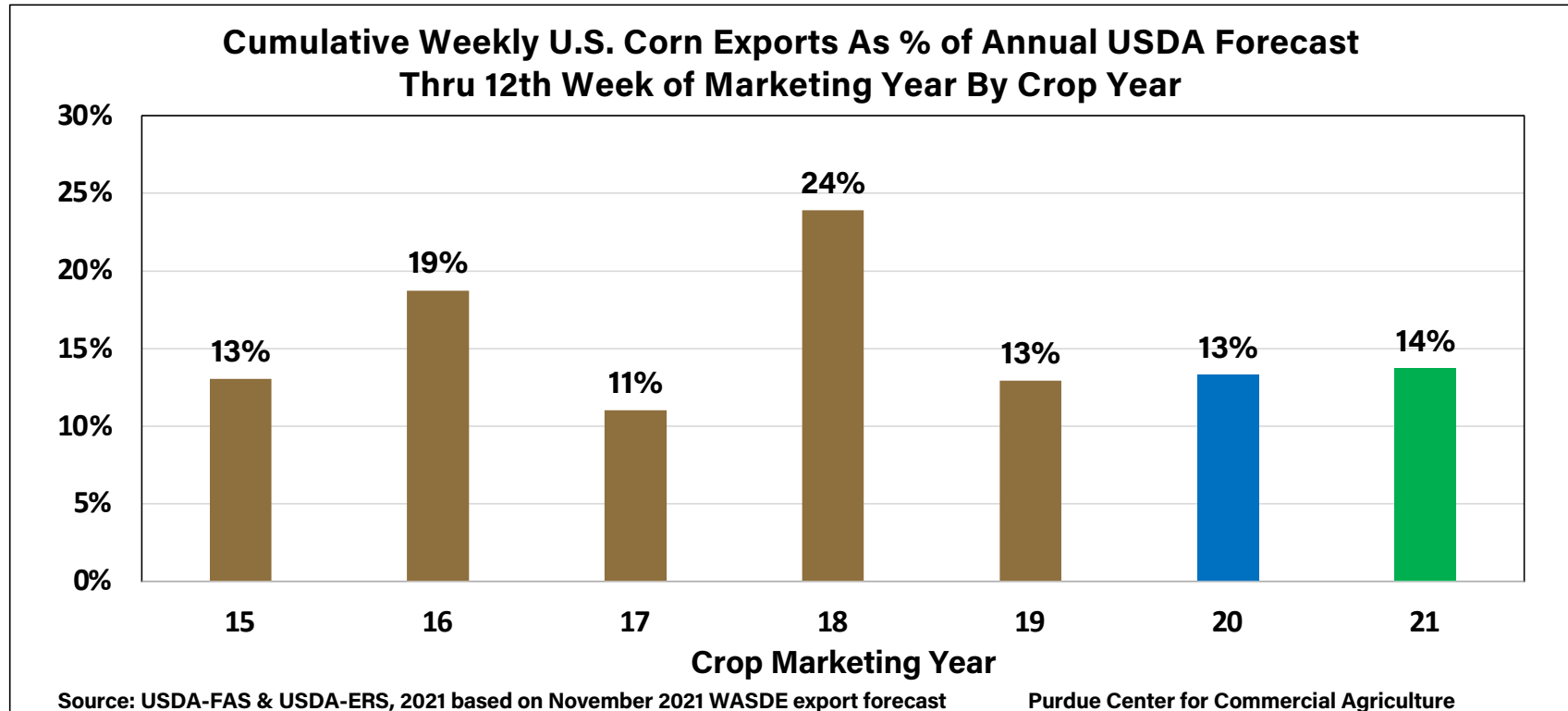
Smaller Corn Exports Expected in 2021 vs. 2020...What Will China Do?



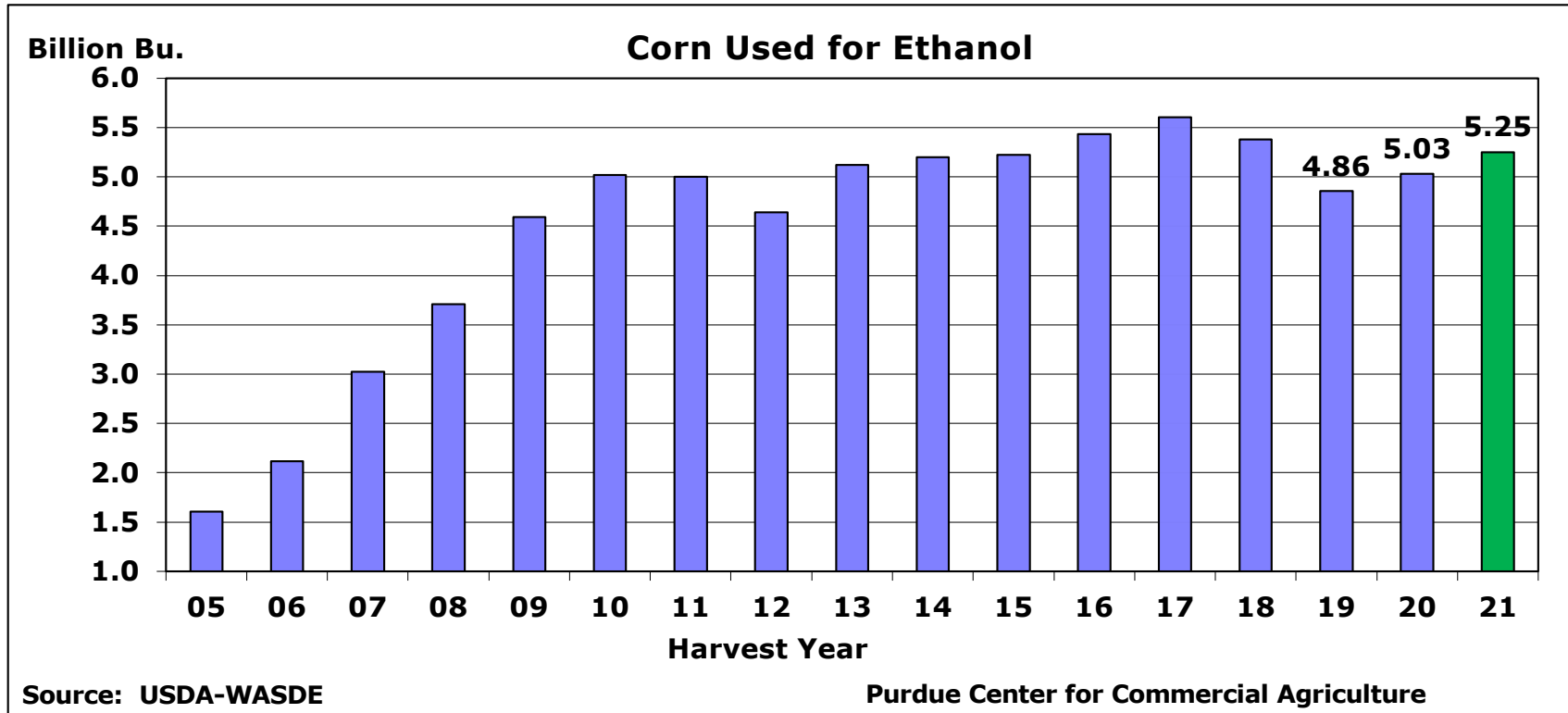
***Total Corn Export Commitments About 7% Below Last Year's Pace
But Commitments to China Ahead of Last year***



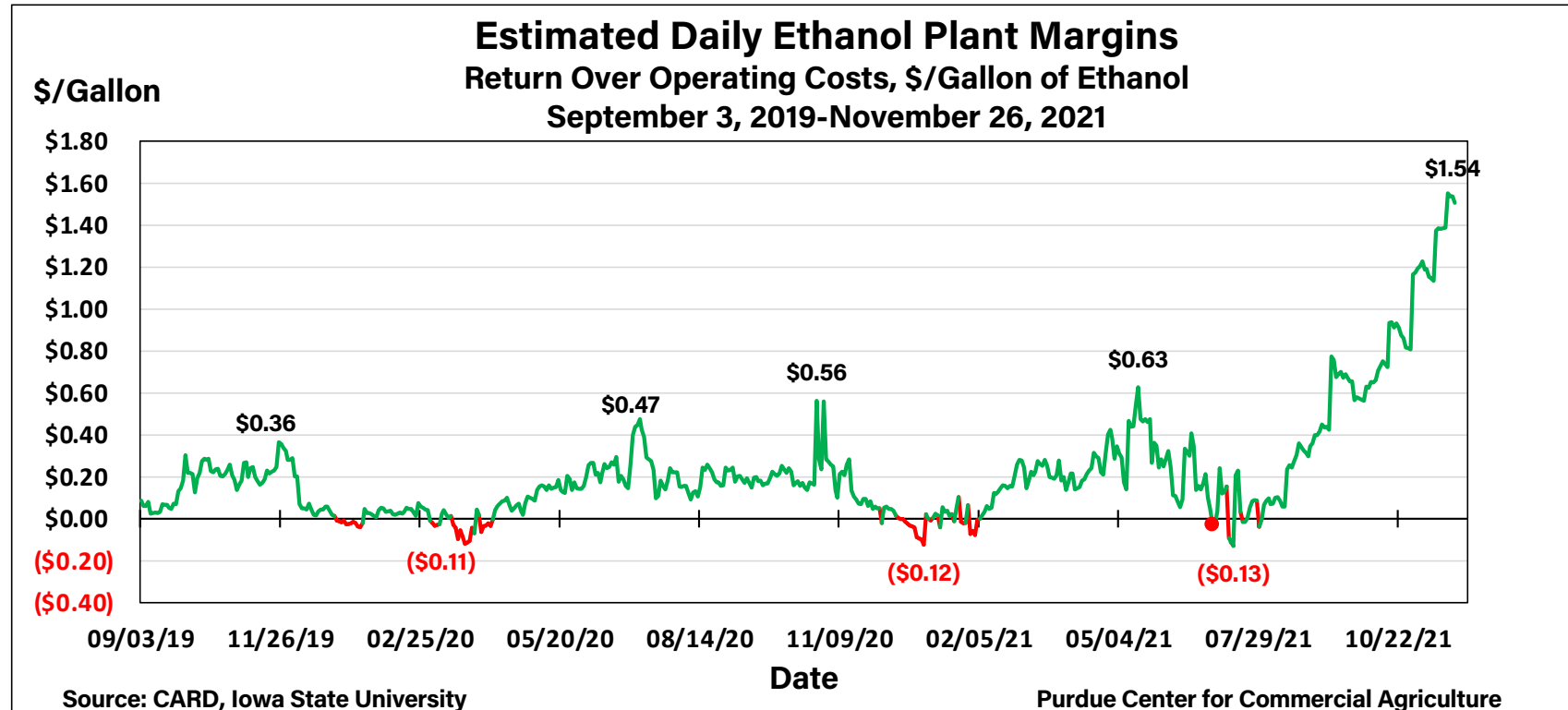
Corn Exports Tracking With USDA's Forecast



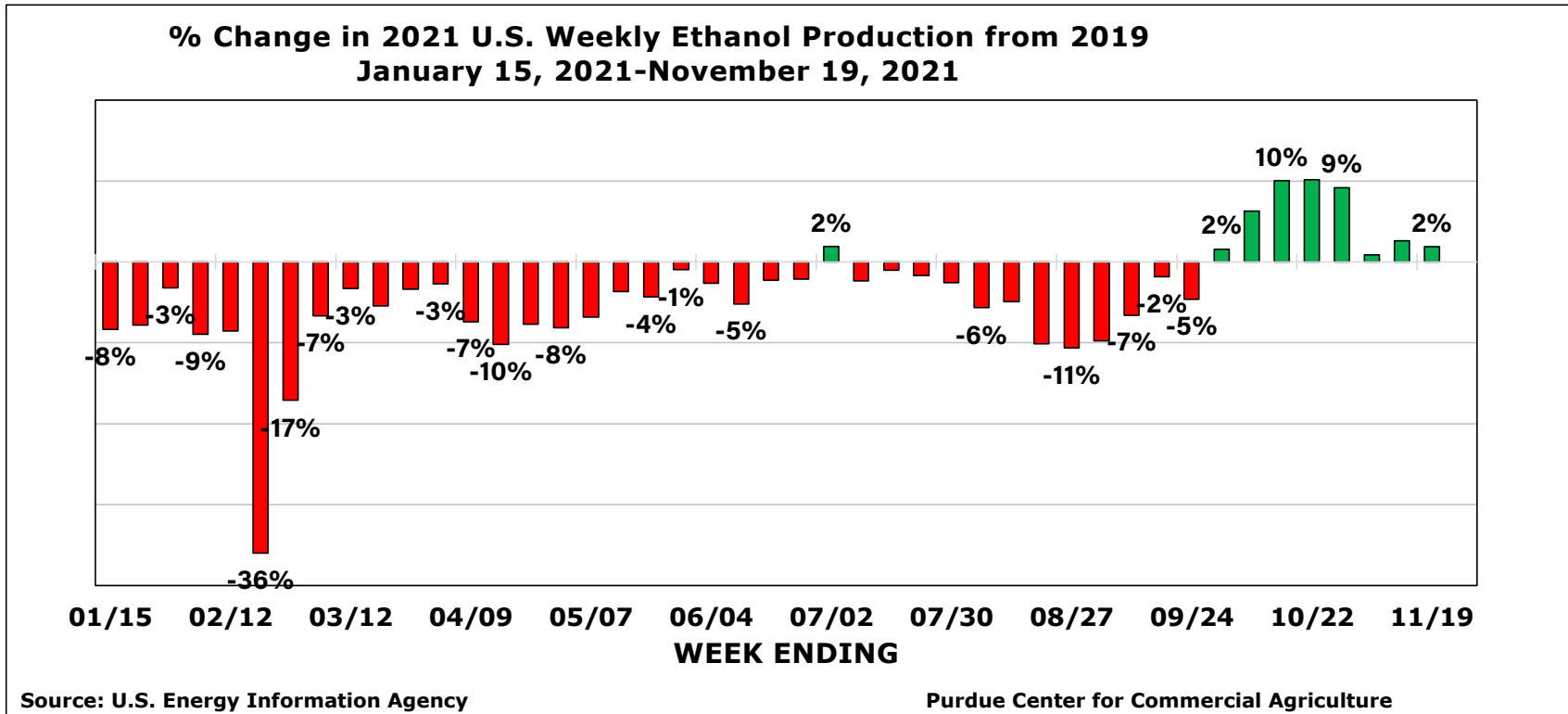
*In NOV, USDA's Increased Its Forecast of 2021 Corn To Be Used for Ethanol Production
But USDA's Corn Forecast Could Be Too Low...How Will New Virus Variant Play Out?*



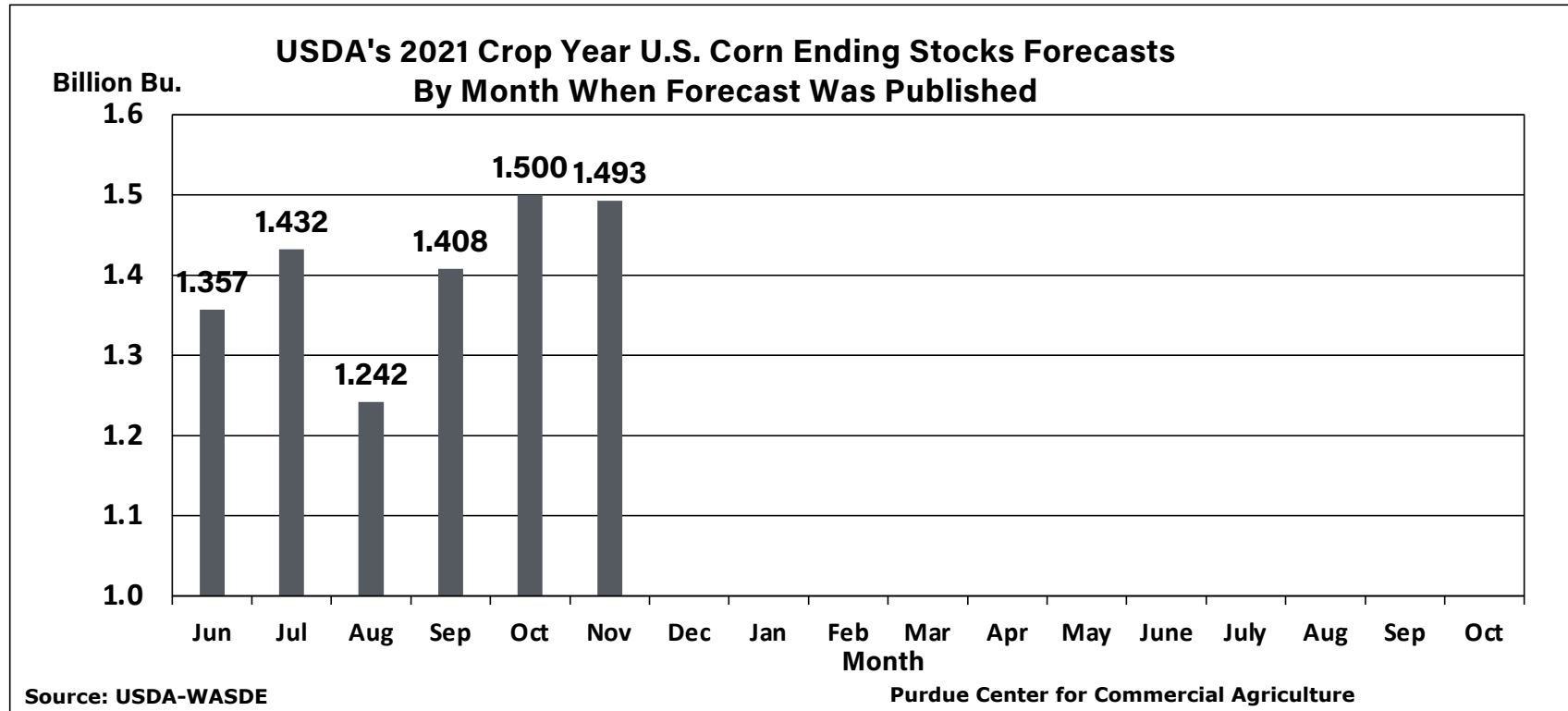
Ethanol Operating Margins Increased Dramatically This Fall As Fuel Demand Increased



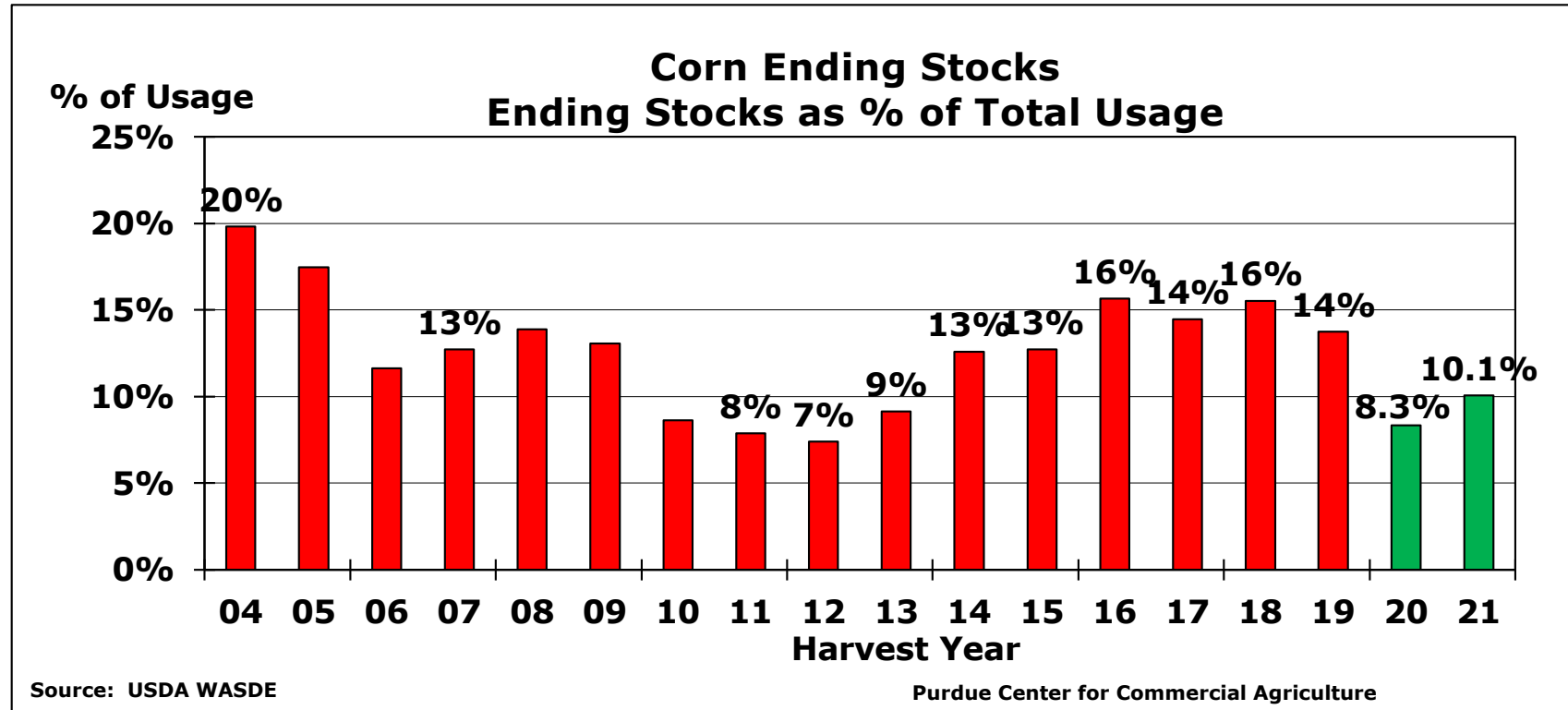
*Increase in Operating Margins Pushed Ethanol Production Above Pre-Pandemic Levels
Will That Continue This Winter?*



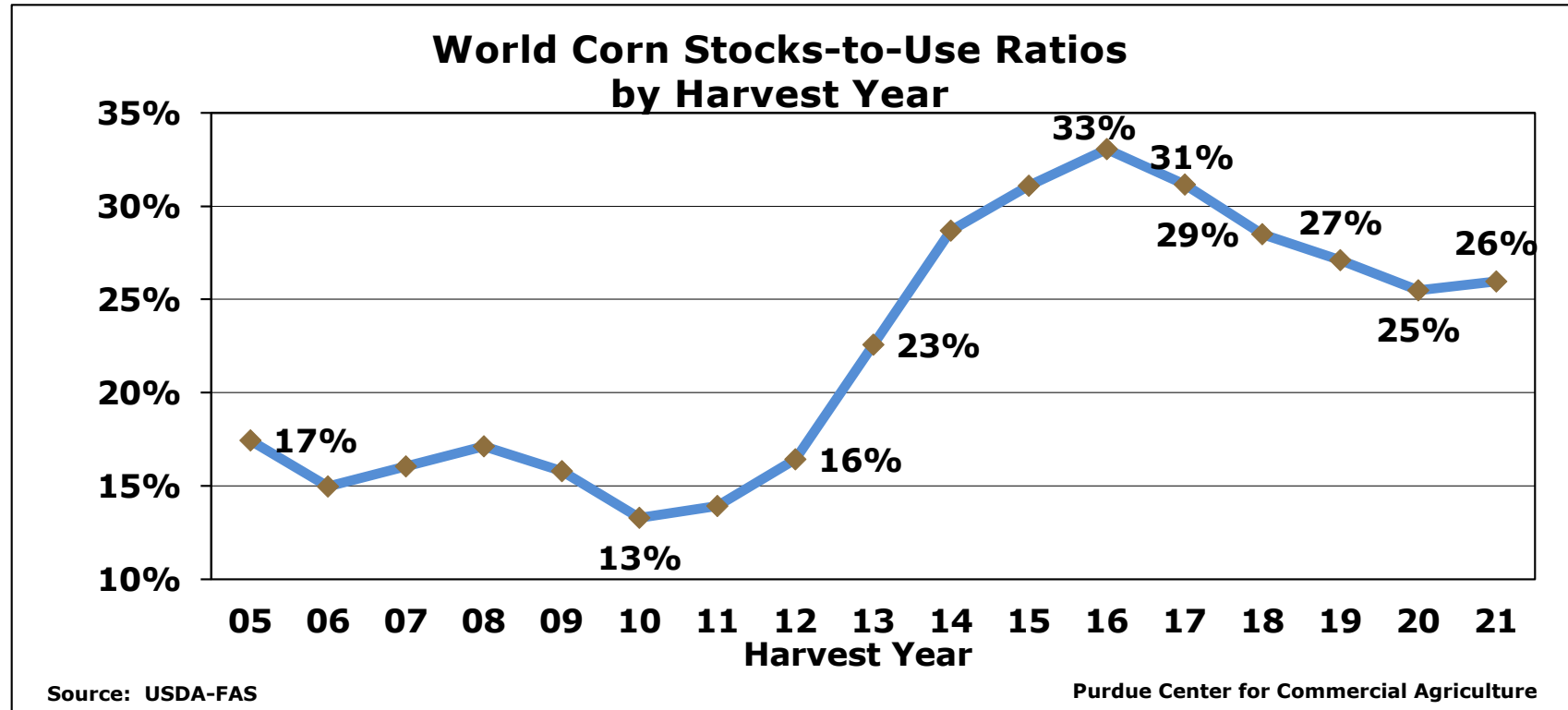
**USDA's Nov. Change in Usage Estimates Increased More Than Production...Resulting in Small Decrease in Ending Stocks
But Ending Stocks Estimate is Up 251 Million Bushels Since August Report**



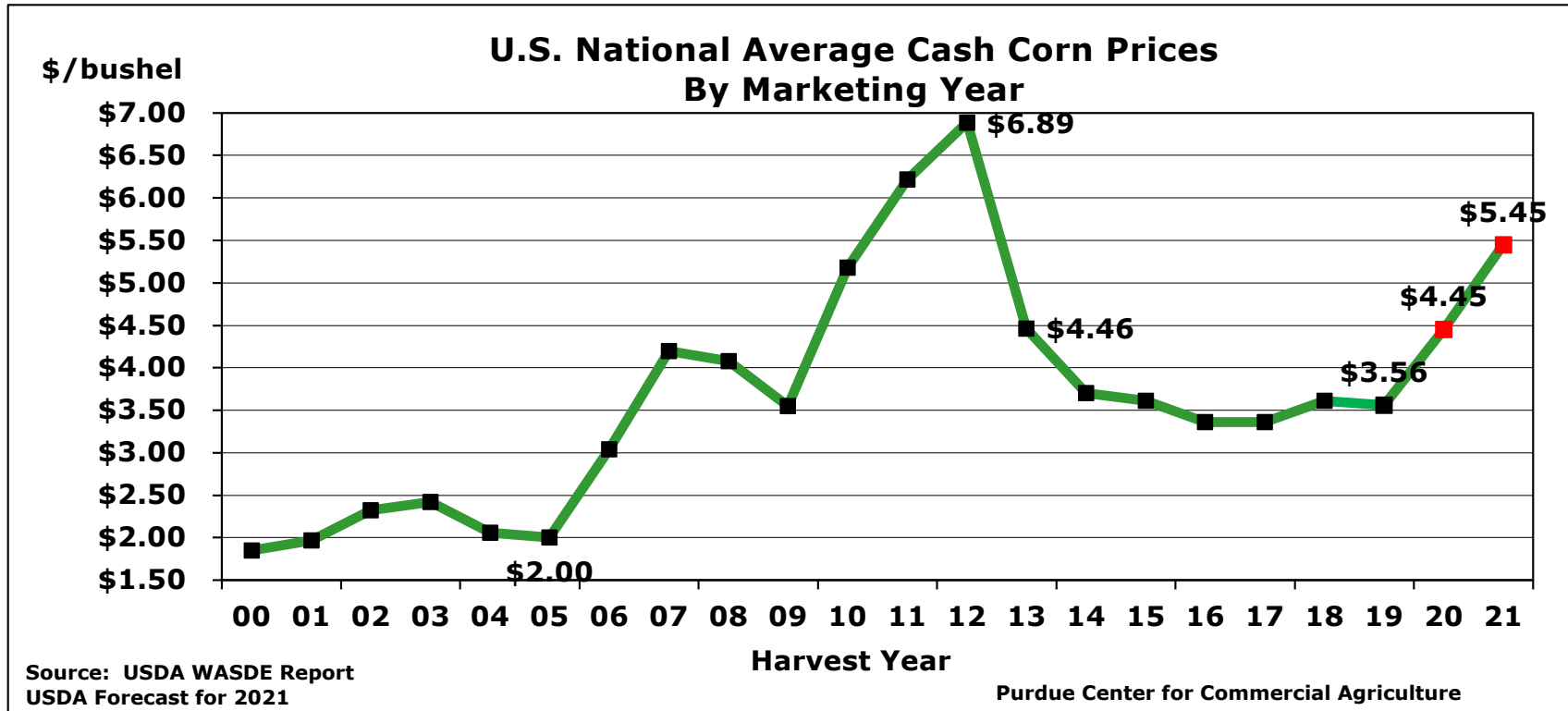
*Ending Stocks as % of Usage Hovering Near 10%
Further Tightening Will Require Larger Exports or Increase in Ethanol Usage*



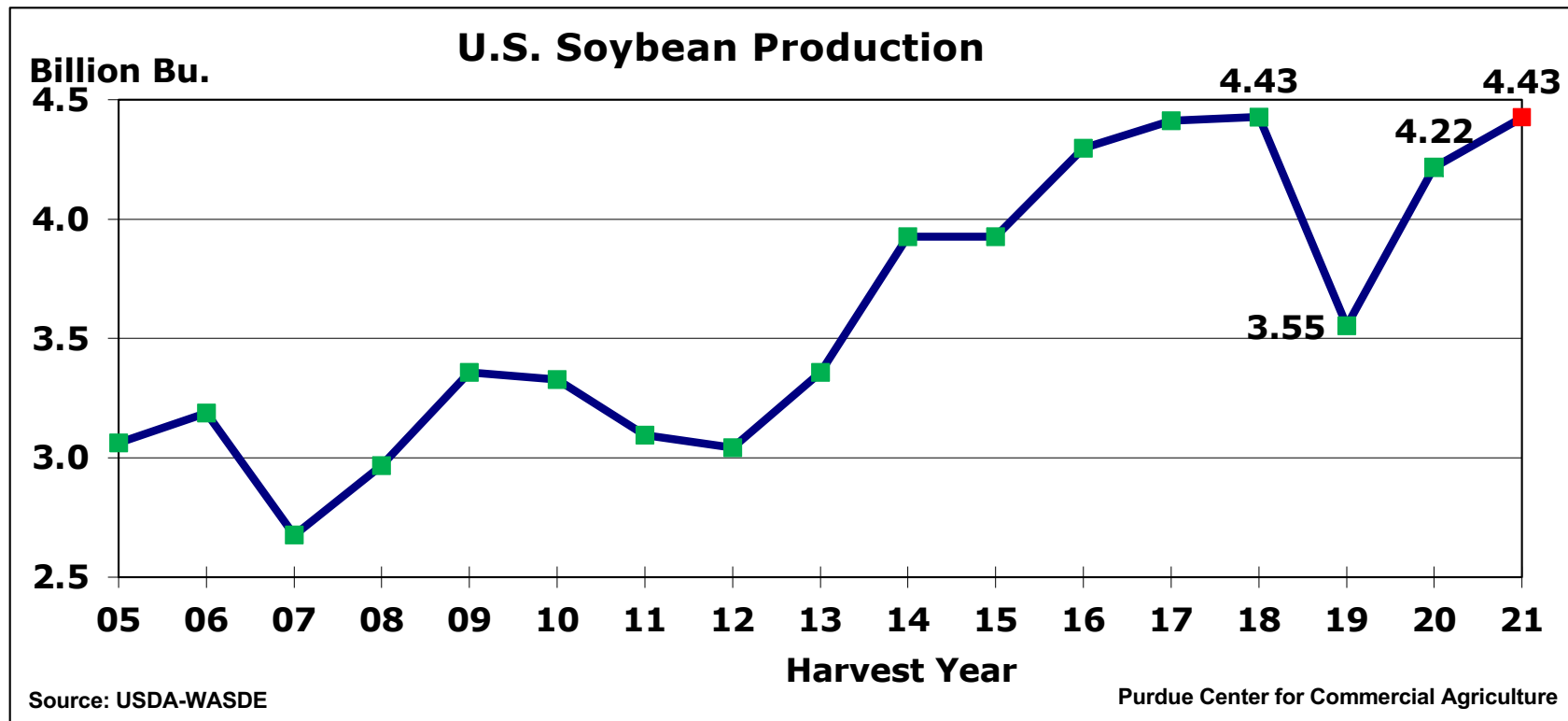
USDA Increased Their World Stocks/Use Ratio Forecast Slightly to 26%



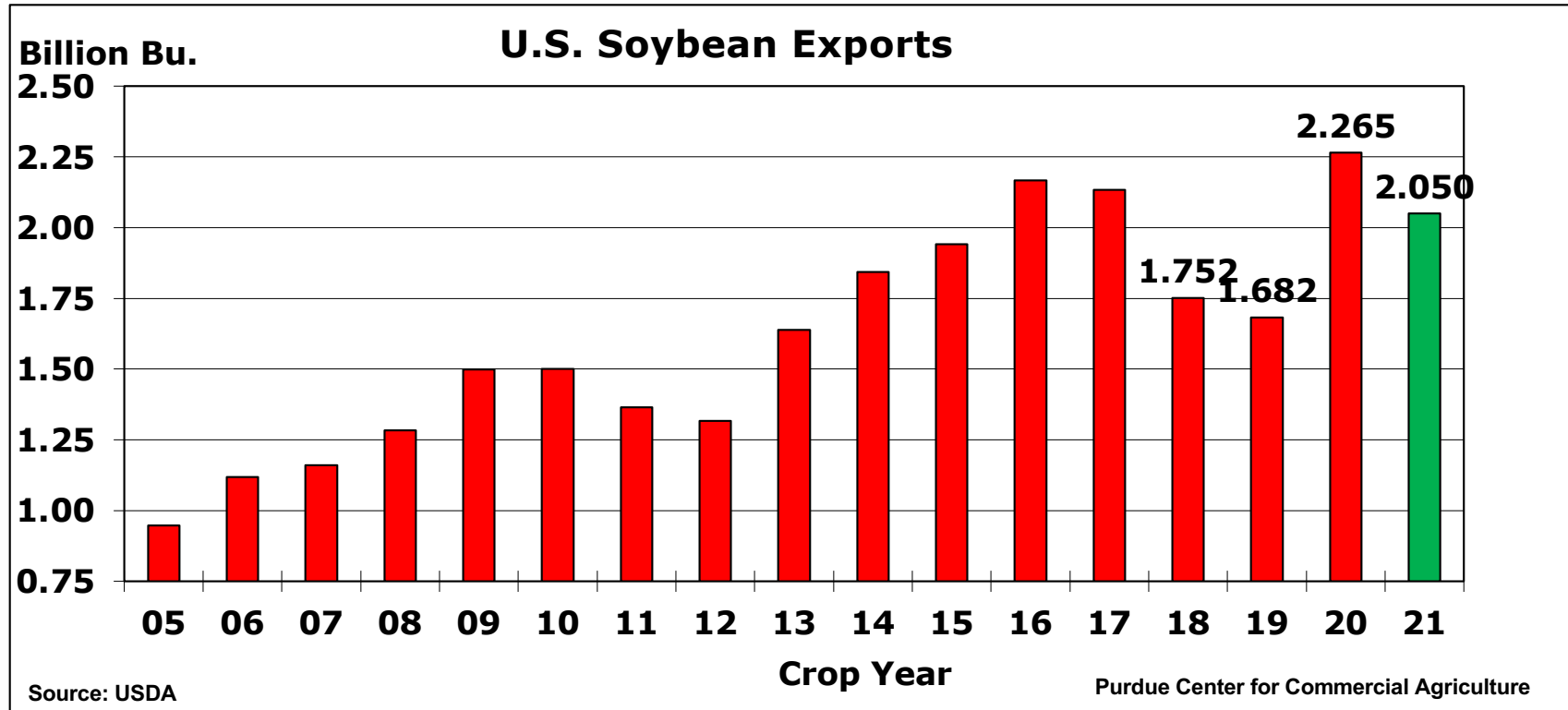
USDA's MYA Price Forecast is Highest Since 2012



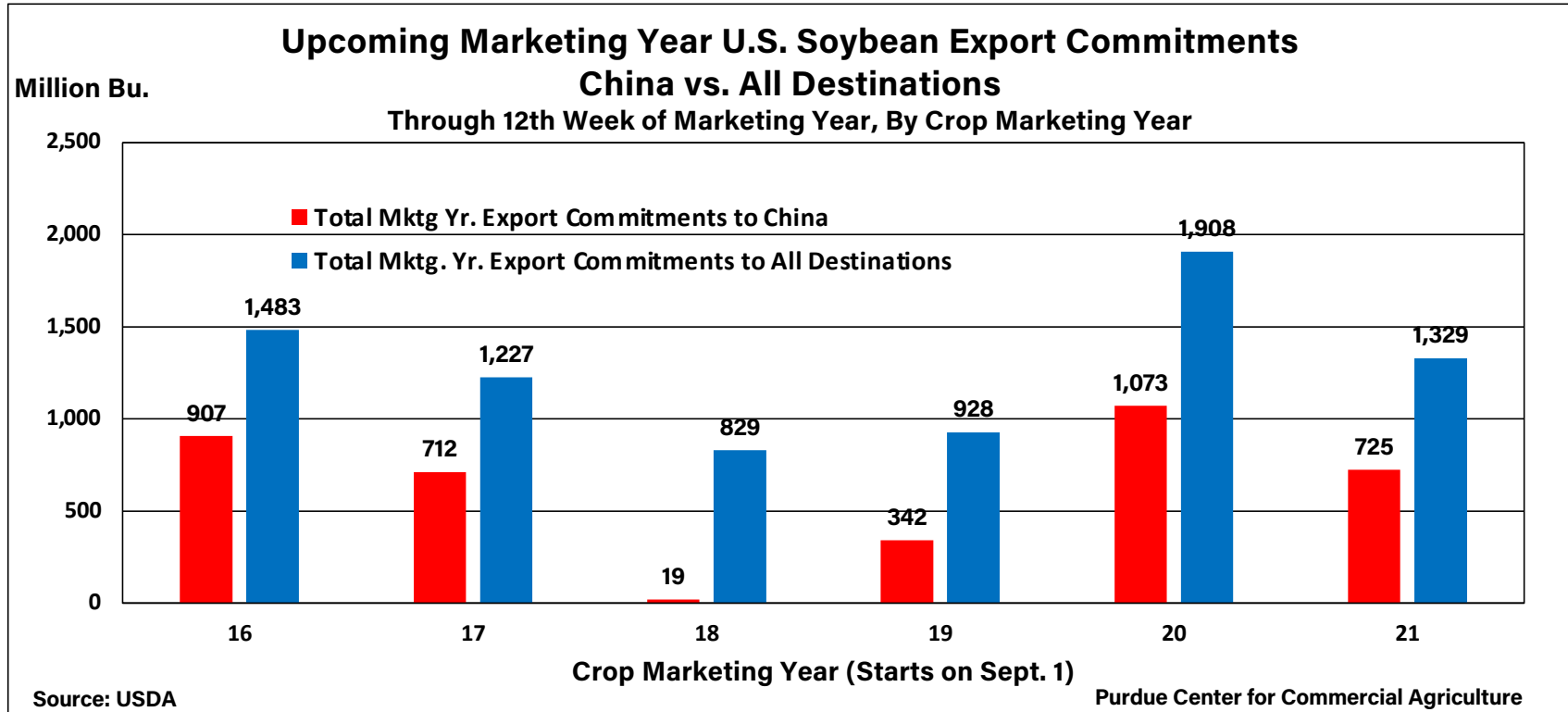
2021 Crop Production Matches 2018's... Two Largest Crops On Record



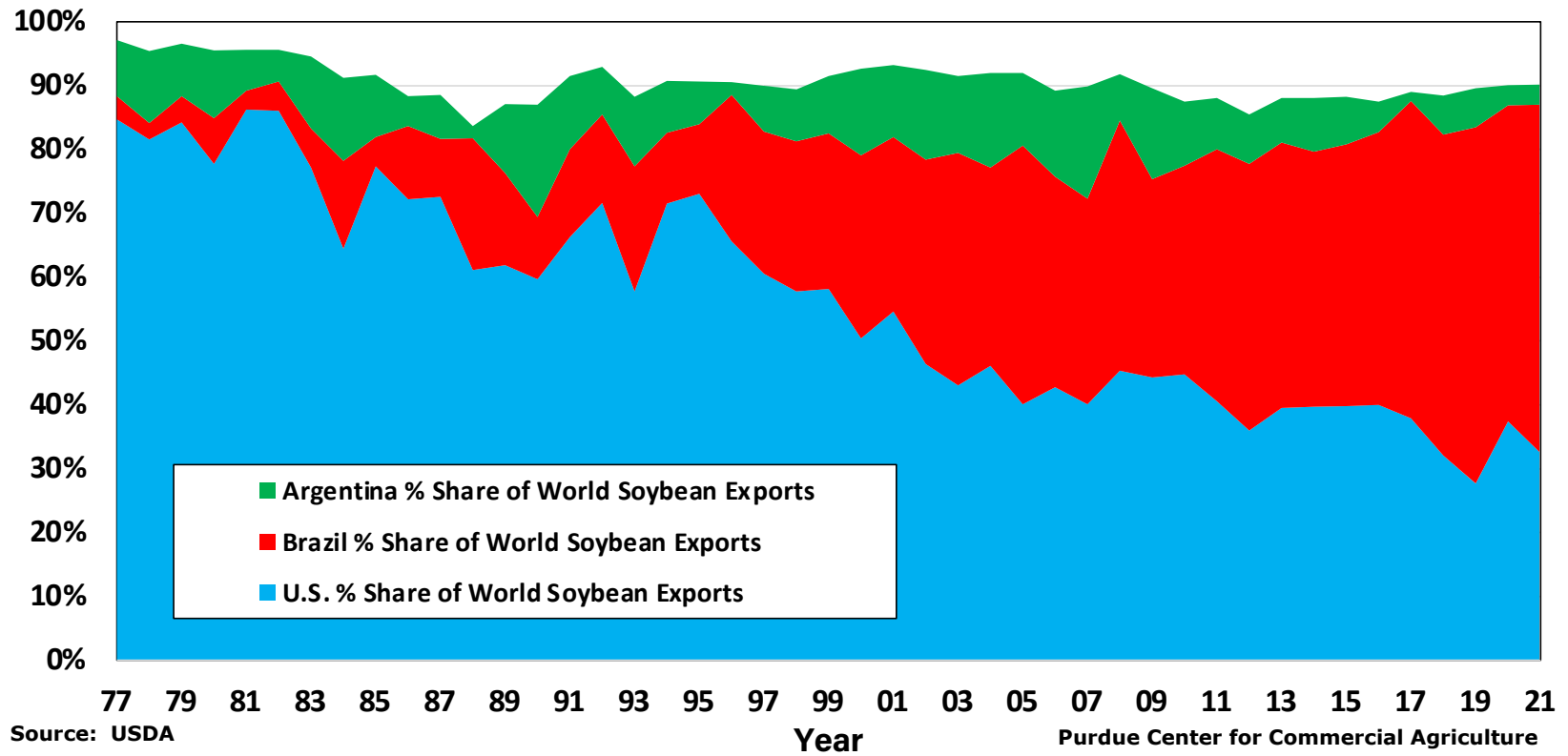
USDA Has Been Pulling Back Their Export Forecast...But Could It Go Even Lower This Winter?



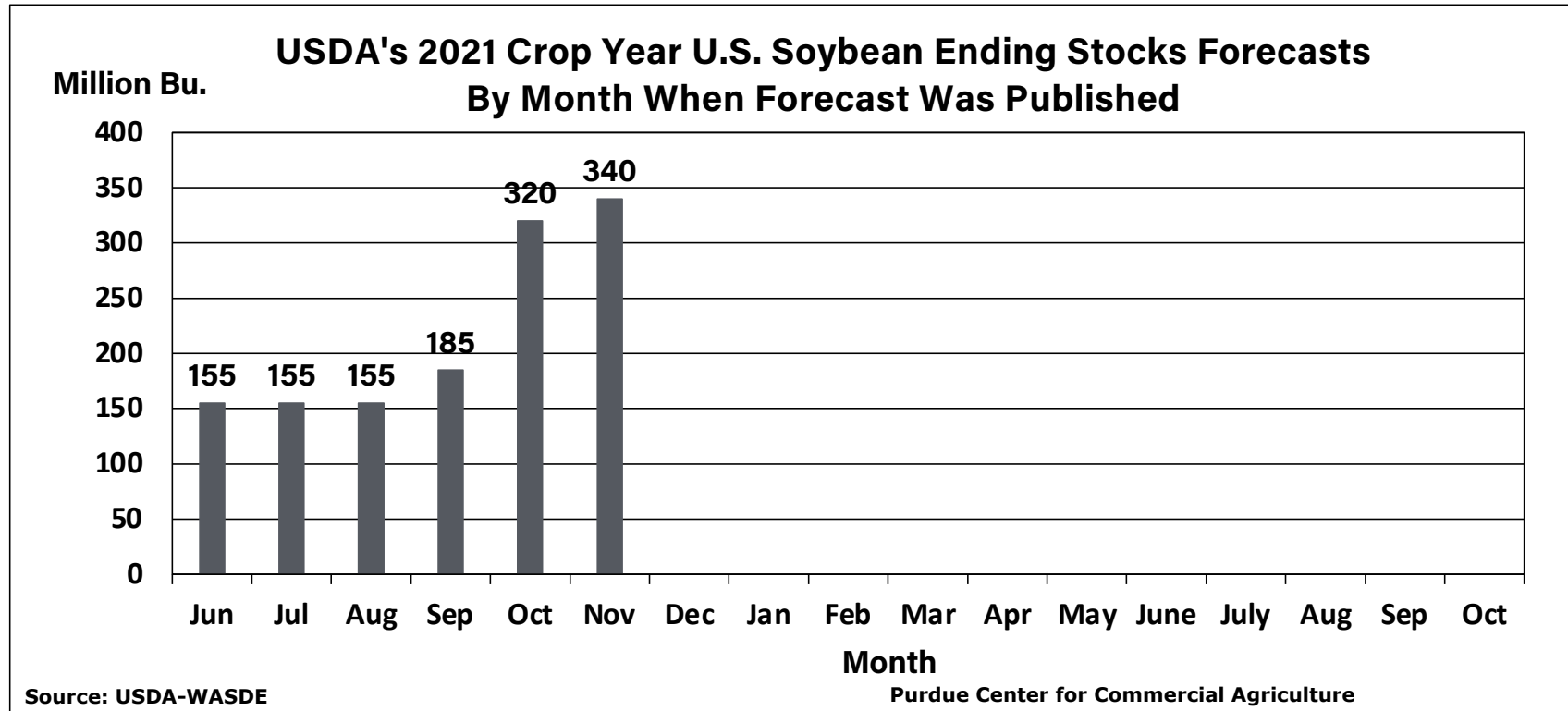
*To date, Total Export Commitments Running 30% Below Last Year
 Reduced Export Commitments to China Account for 60% of the Reduction in Total Export Commitments*



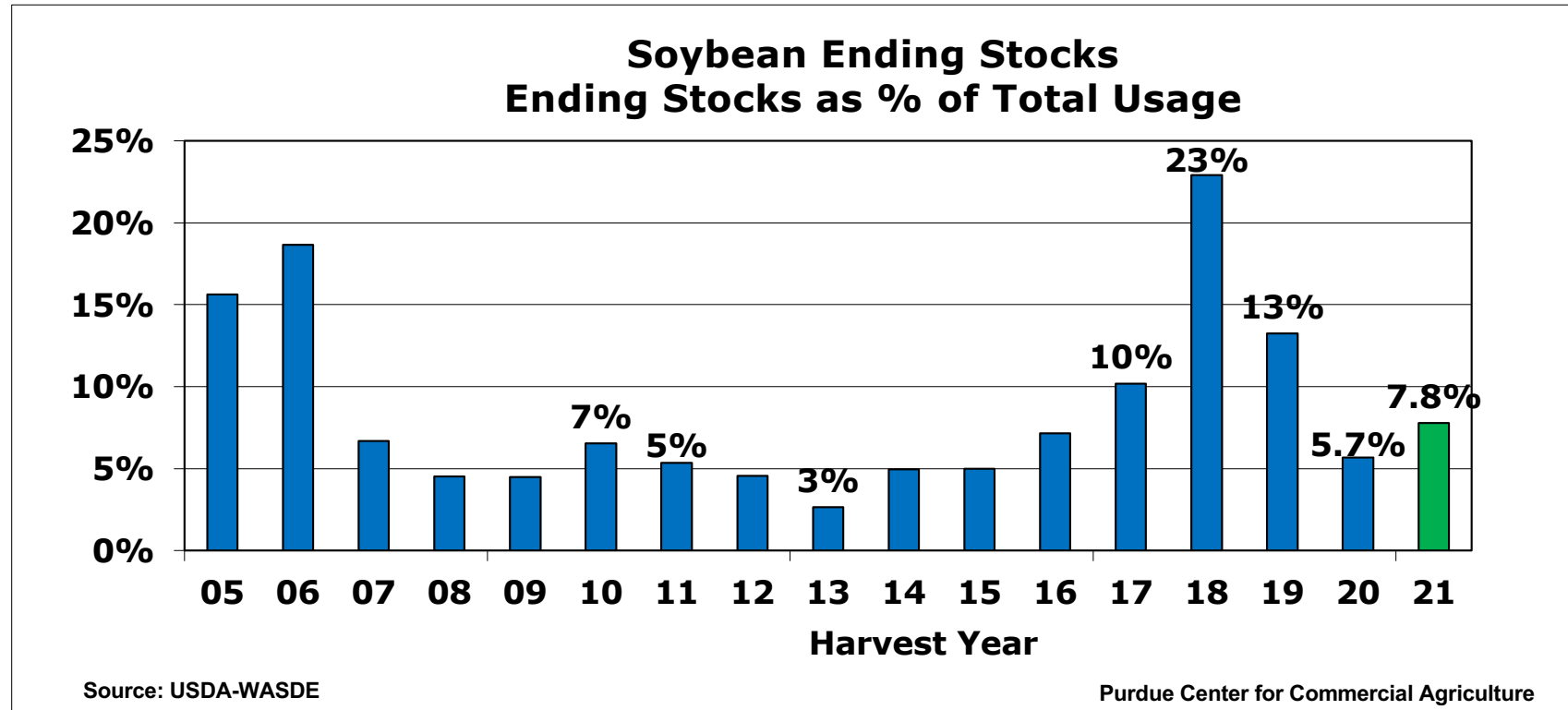
World Soybean Export Shares U.S., Brazil, Argentina



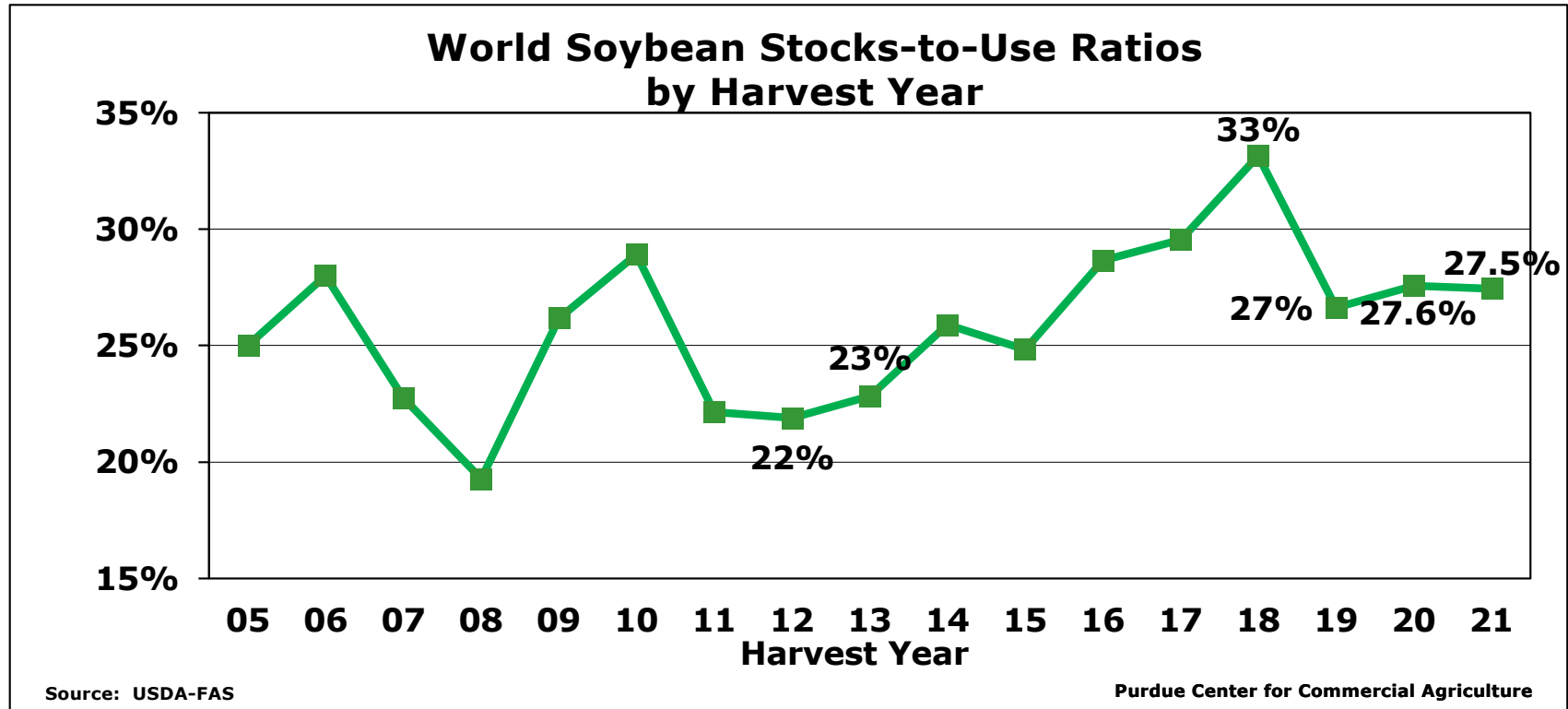
Since August the 2021 Ending Stocks Forecast Has More Than Doubled... Will It Go Higher?



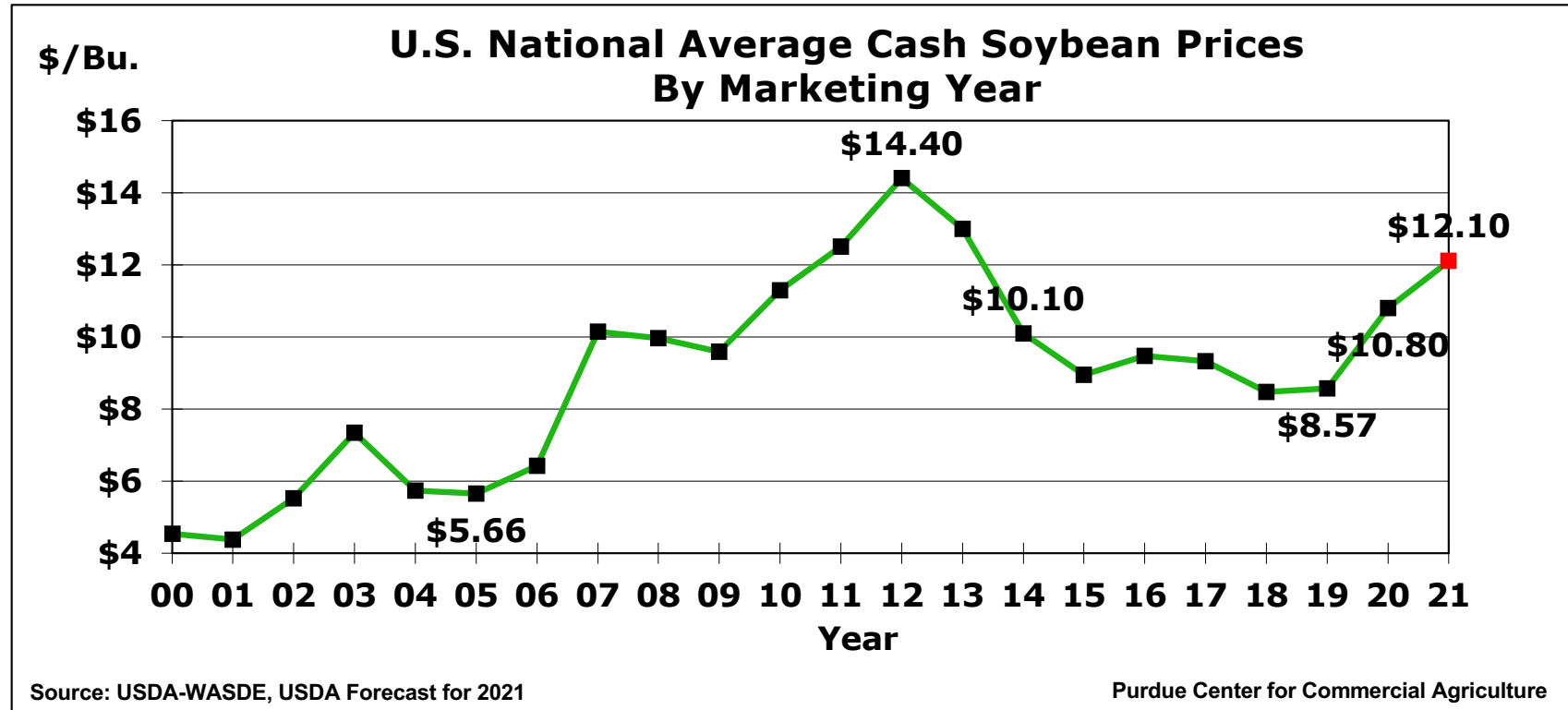
*2021 Crop Ending Stocks As % of Usage Approaching 8%
Tight By Historical Standards, But Not As Tight As Expected Last Summer*



World Stocks Estimates Down Sharply from 2018

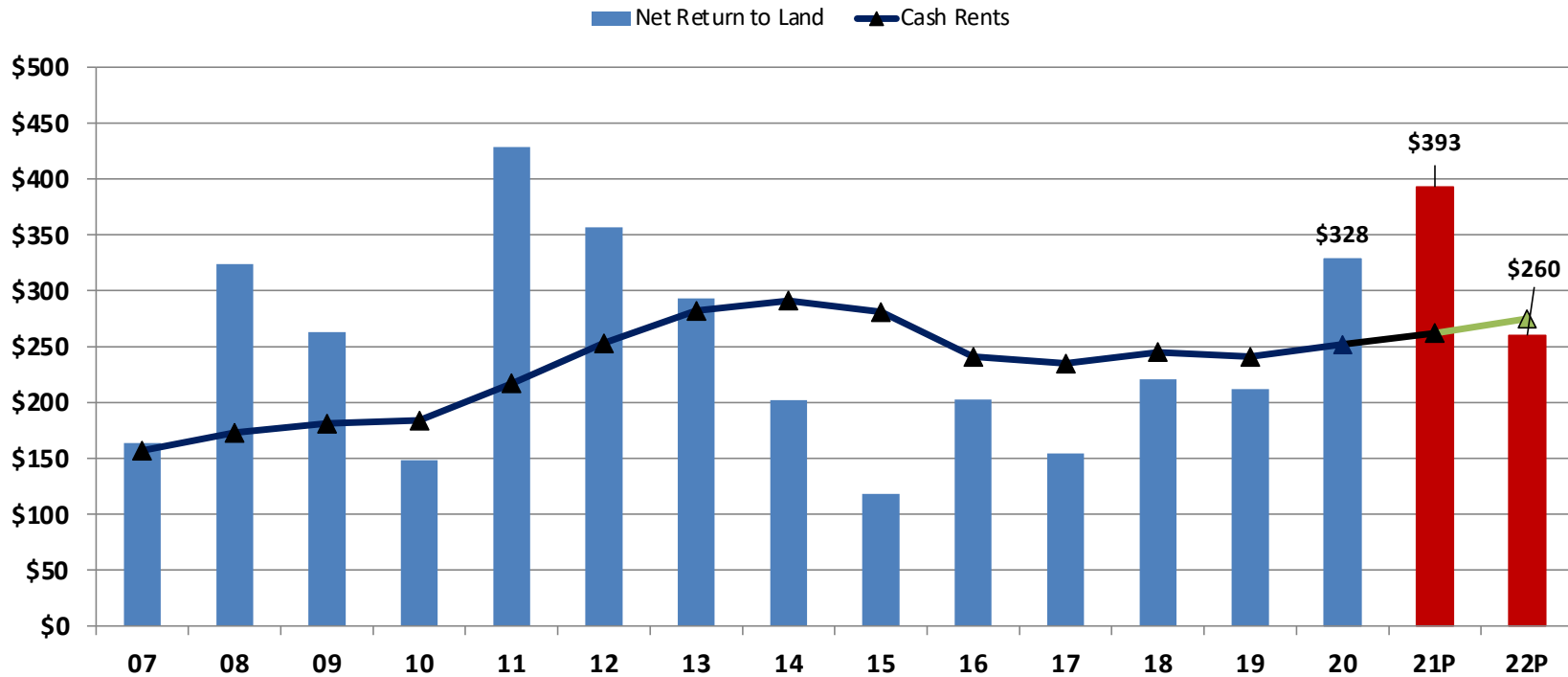


*USDA Reduced MYA Price Again in November Report, This Time By \$0.25/bu.
USDA's November's MYA Forecast is now \$1.60 Lower Than They Projected in August*



Still Some Upward Pressure on Cash Rents

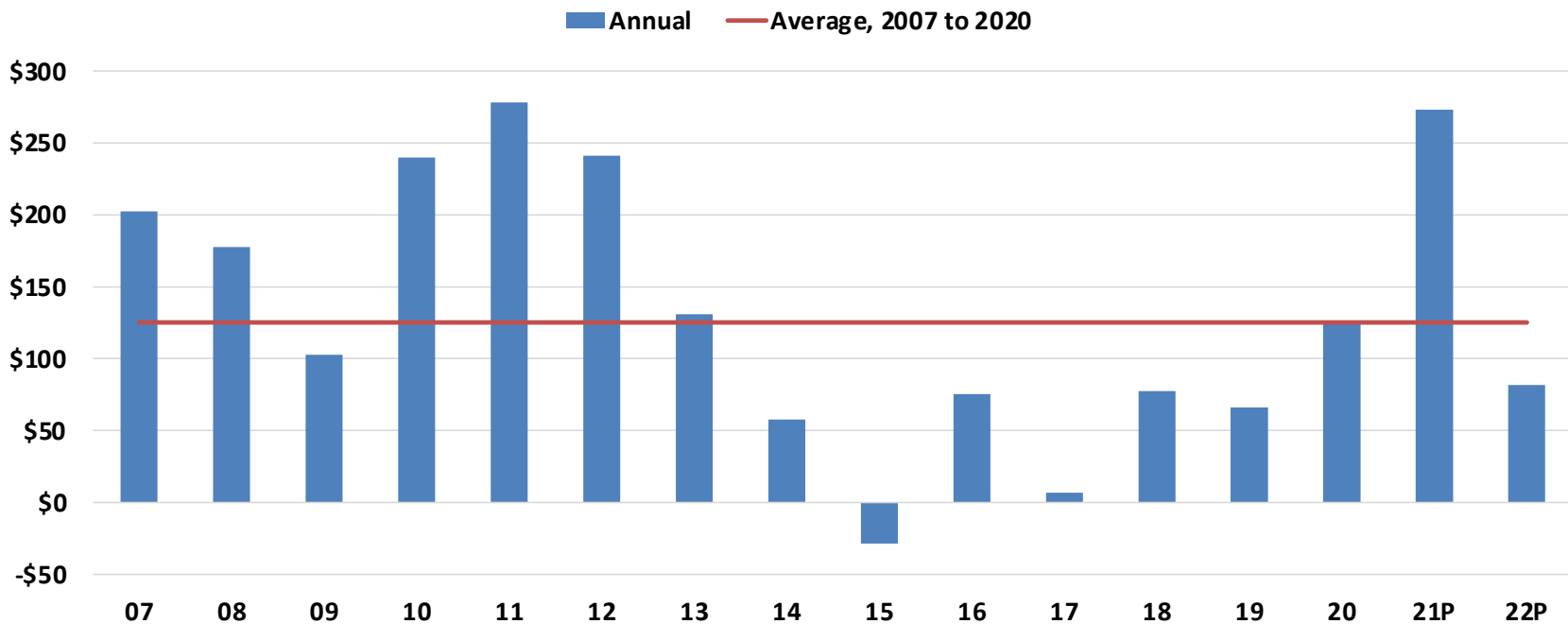
Cash Rent and Net Return to Land, West Central Indiana



Center for Commercial Agriculture

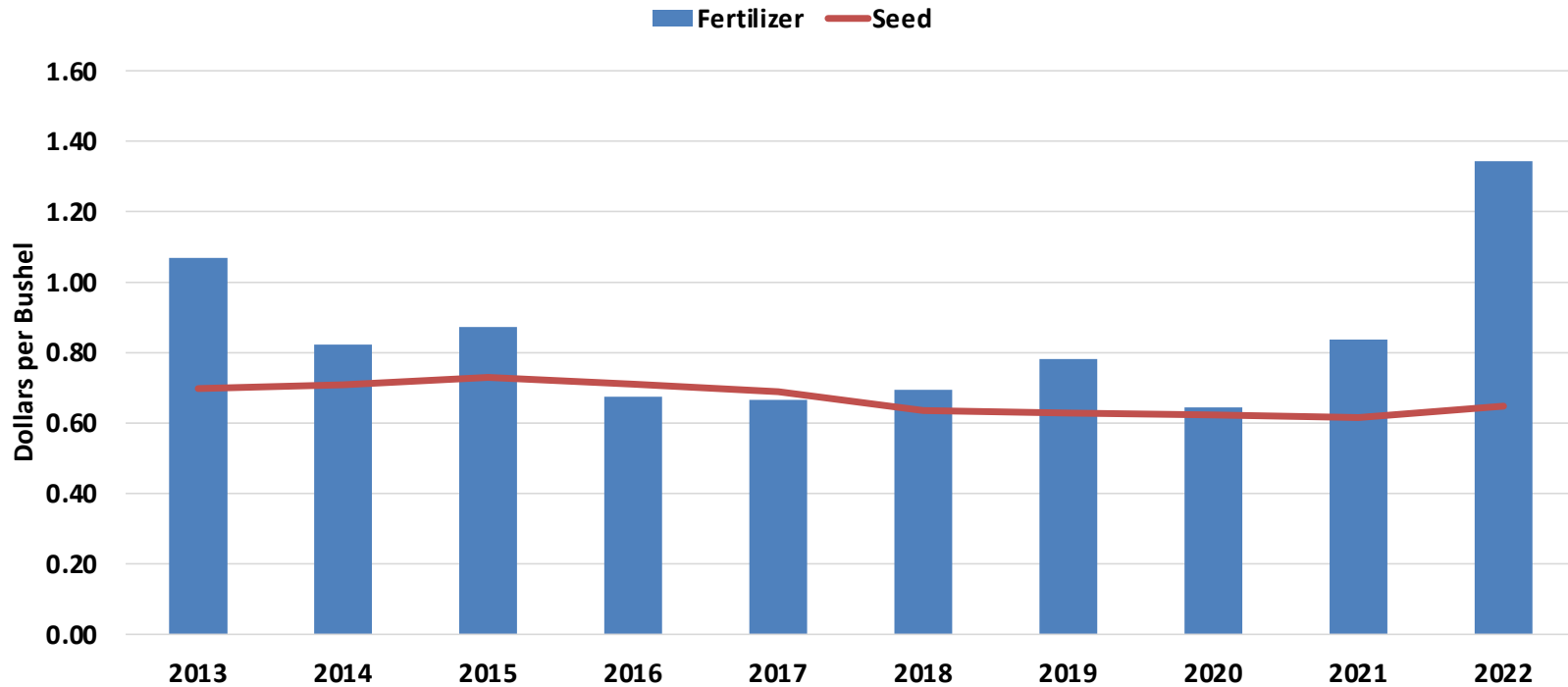
*Net Farm Income Well Above Average in 2021
But Rising Production Costs Paint A Different Picture for 2022*

Net Farm Income, Corn/Soybean Rotation (\$ per Acre)
West Central Indiana Case Farm



Fertilizer and Seed Costs per Bushel of Corn

Fertilizer and Seed Costs for Rotation Corn (Average Productivity Soil)



Optimum Nitrogen Rates @ Various N Prices & \$5.00 Corn

Rates and Charts

State: Indiana

Number of sites: 53

Rotation: Corn Following Soybean

NH3 Prices per ton

	\$700	\$1250	\$1344	\$1500
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N Price (\$/lb N):	\$0.43	\$0.76	\$0.82	\$0.91
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Corn Price (\$/bu):	\$5.00	\$5.00	\$5.00	\$5.00
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Price Ratio:	0.09	0.15	0.16	0.18
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MRTN Rate (lb N/acre):	185	167	164	159
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Profitable N Rate Range (lb N/acre):	174 - 195	156 - 177	153 - 174	148 - 169
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Net Return to N at MRTN Rate (\$/acre):	\$319.26	\$261.20	\$251.26	\$236.73
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Percent of Maximum Yield at MRTN Rate:	99%	98%	98%	98%
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Anhydrous Ammonia (82% N) at MRTN Rate (lb product/acre):	226	204	200	194
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Anhydrous Ammonia (82% N) Cost at MRTN Rate (\$/acre):	\$79.55	\$126.92	\$134.48	\$144.69
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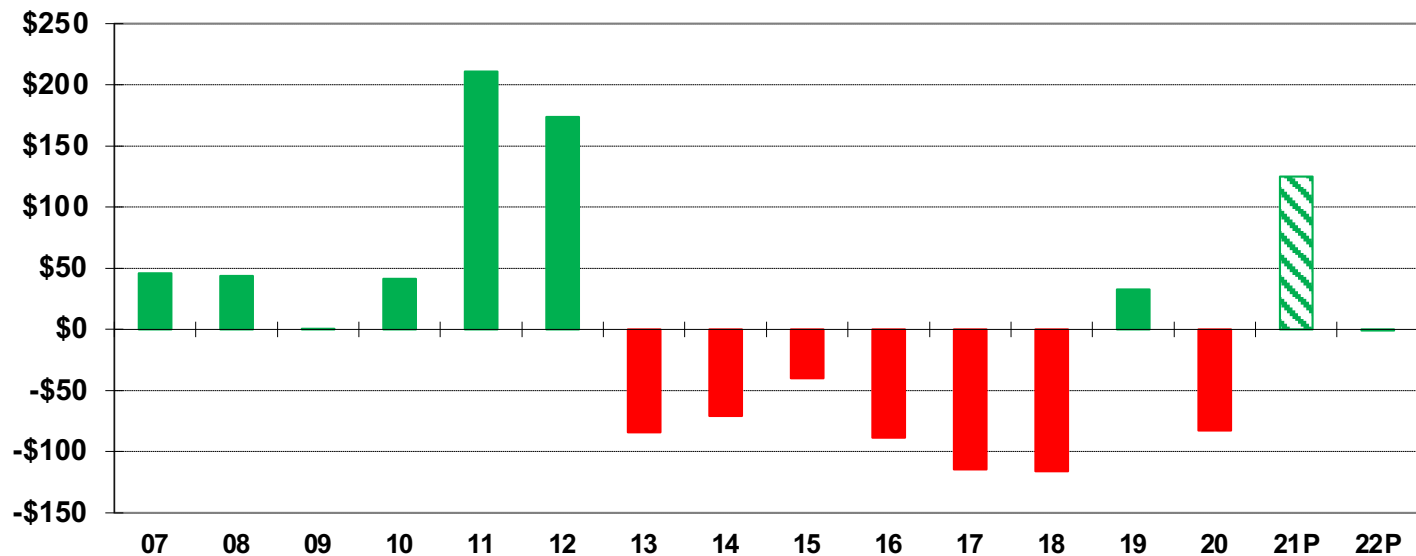
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Source: <http://cnrc.agron.iastate.edu/nRate.aspx>

Is Corn or Soybean Production Favored in 2022?

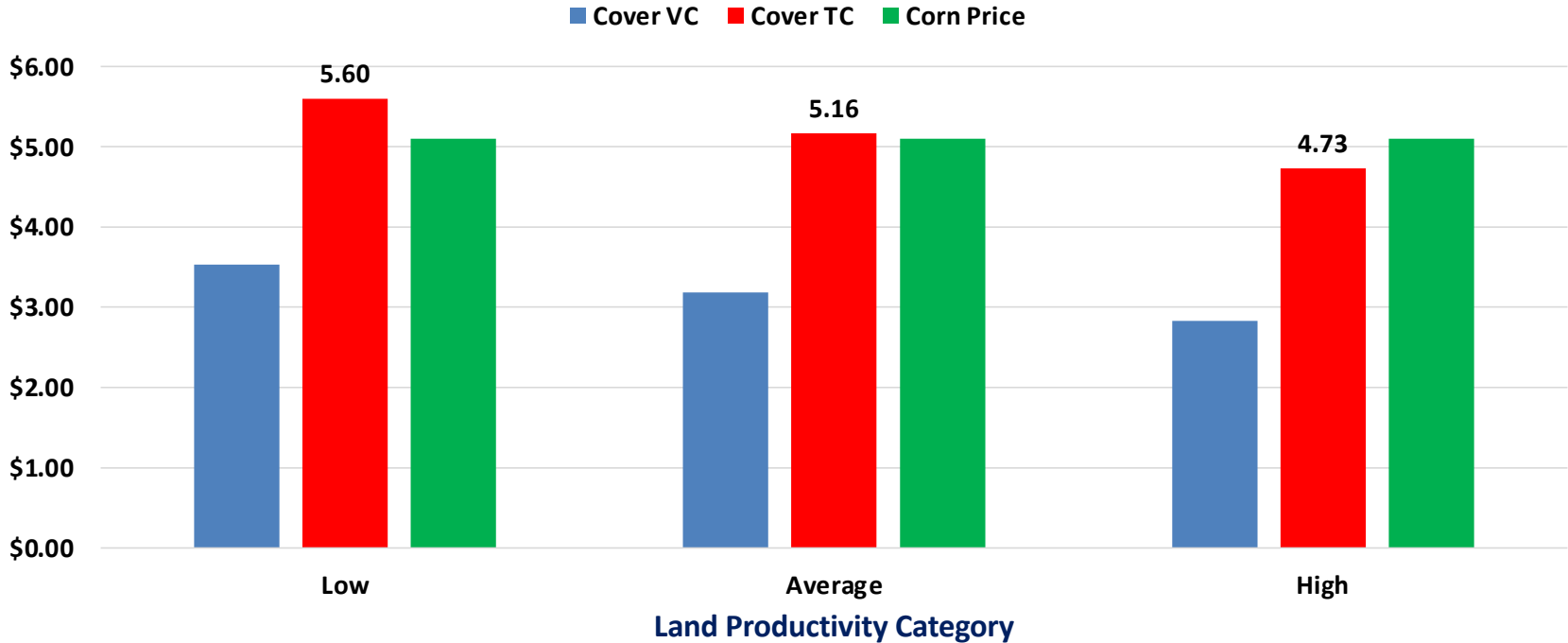
Even With High N Prices, Corn Is Competitive

Difference in Earnings per Acre West Central Indiana (Corn Minus Soybeans)



Corn Breakeven Prices by Land Productivity Category

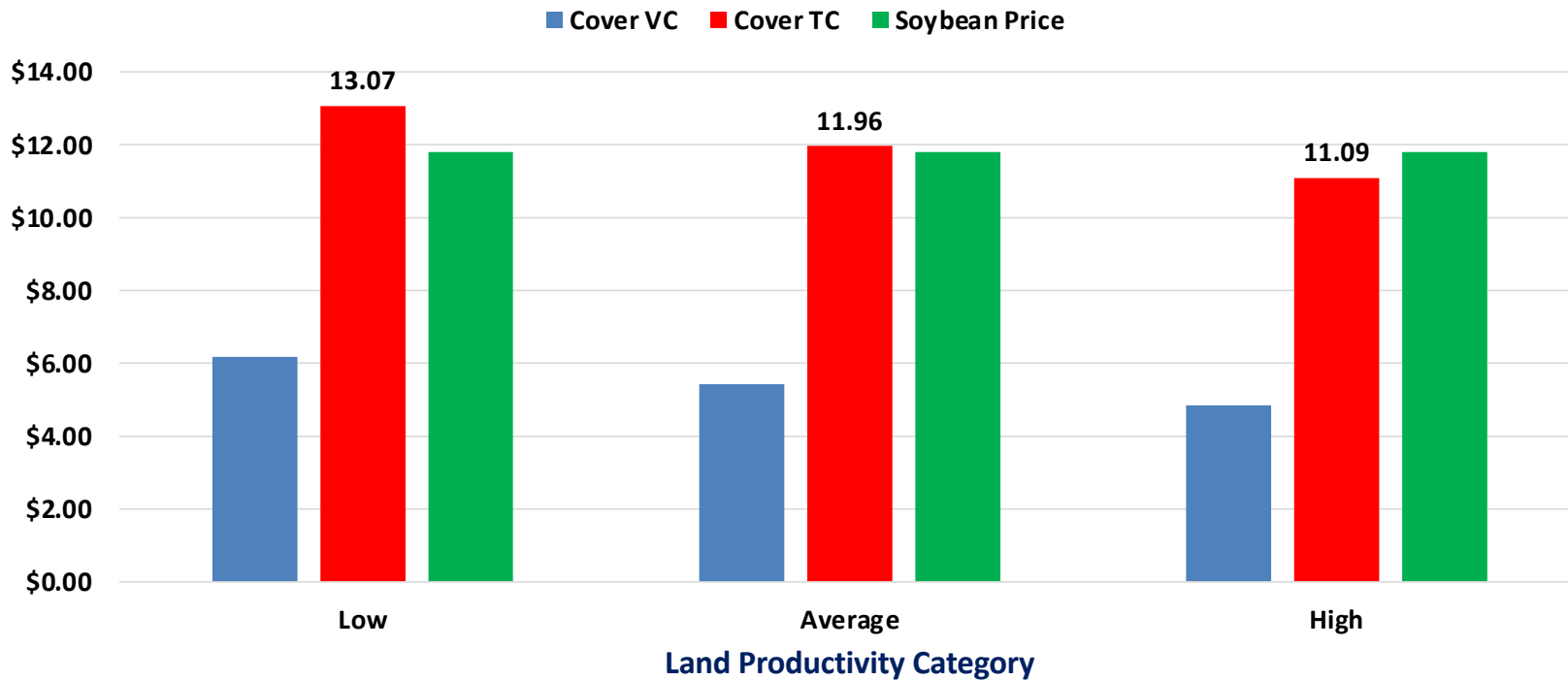
2022 Breakeven Prices for Rotation Corn in Indiana



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Soybean Breakeven Prices by Land Productivity Category

2022 Breakeven Prices for Soybeans in Indiana



Current Price Projections for Fall 2022 Favor Rotation Soybeans Over Continuous Corn in the Eastern Corn Belt

Corn Prices Required to Produce Per Acre Returns Equivalent to Soybeans

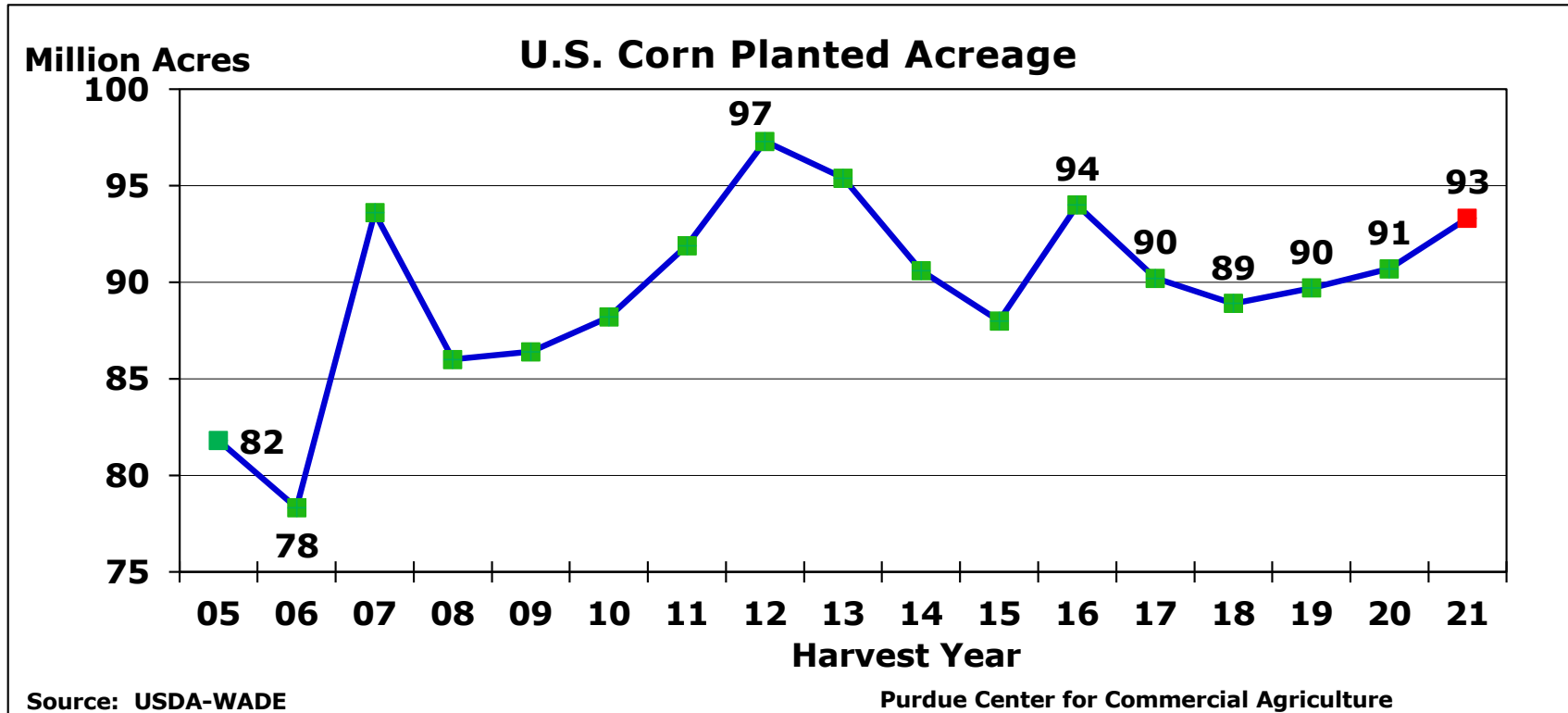
Soybean Price	Low Productivity (C=141; SB=45)	Avg. Productivity (C=171; SB=55)	High Productivity (C=201; SB=65)
\$10.50	\$5.39	\$5.23	\$5.03
\$11.00	\$5.55	\$5.39	\$5.19
\$11.50	\$5.71	\$5.55	\$5.35
\$12.00	\$5.87	\$5.71	\$5.51
\$12.50	\$6.02	\$5.87	\$5.67
\$13.00	\$6.18	\$6.04	\$5.84

Second Year Soybeans versus Rotation Corn in the Eastern Corn Belt?

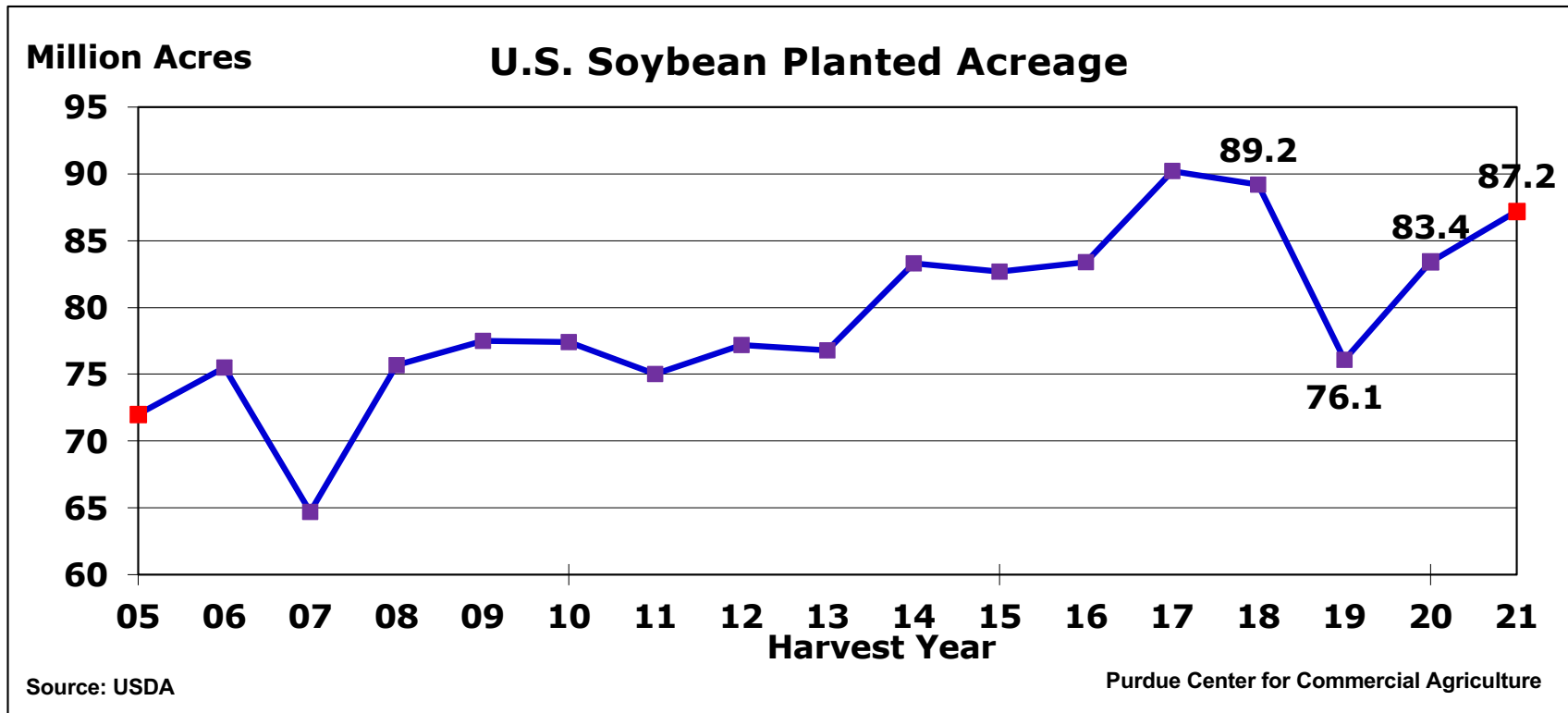
Corn Prices Required to Produce Per Acre Returns Equivalent to Soybeans

Soybean Price	Low Productivity (C=150; SB=45)	Avg. Productivity (C=182; SB=55)	High Productivity (C=214; SB=66)
\$10.50	\$4.83	\$4.72	\$4.55
\$11.00	\$4.98	\$4.87	\$4.70
\$11.50	\$5.13	\$5.02	\$4.85
\$12.00	\$5.28	\$5.18	\$5.00
\$12.50	\$5.43	\$5.33	\$5.16
\$13.00	\$5.58	\$5.48	\$5.31

Will Input Price Rise Push Acreage in 2022 From Corn to Soybeans



How Many "Extra" Soybean Acres Will Be Planted in 2022?



Purdue Top Farmer Conference
January 7, 2022



**MONTHLY
OUTLOOK**

PURDUE CENTER FOR
COMMERCIAL AGRICULTURE

NEXT OUTLOOK WEBINAR:

Wednesday, Dec. 15, 2021

Broadcast from

Indiana Farm & Equipment Technology Expo in Westfield, IN

Details Available at
purdue.edu/commercialag



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