

***CORN & SOYBEAN OUTLOOK UPDATE...FOLLOWING USDA'S FEBRUARY WASDE REPORT***

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**February 10, 2023**



Center for Commercial Agriculture

# USDA Reduced Ethanol Usage: Result...Pushed Ending Stocks Up

## USDA's February 2023 Corn Balance Sheet

	20/21	21/22	Jan. Proj. 22/23	Feb. Proj. 22/23
		<i>Million Acres</i>		
Area Planted	90.7	93.3	88.6	88.6
Area Harvested	82.3	85.3	79.2	79.2
		<i>Bushels</i>		
Yield per Harvested Acre	171.4	176.7	173.3	173.3
		<i>Million Bushels</i>		
Beginning Stocks	1,919	1,235	1,377	1,377
Production	14,111	15,074	13,730	13,730
Imports	24	24	50	50
Supply, Total	16,055	16,333	15,157	15,157
Feed and Residual	5,607	5,718	5,275	5,275
Food, Seed & Industrial 2/ Ethanol & by-products 3/ Domestic, Total	6,467 5,028 12,074	6,766 5,326 12,484	6,715 5,275 11,990	6,690 5,250 11,965
Exports	2,747	2,471	1,925	1,925
Use, Total	14,821	14,956	13,915	13,890
Ending Stocks	1,235	1,377	1,242	1,267
Avg. Farm Price (\$/bu) 4/	4.53	6.00	6.70	6.70

# Ethanol Margins Have Tightened...But Are Still Positive

Estimated Daily Ethanol Plant Margins  
Return Over Operating Costs, \$/Gallon of Ethanol  
September 3, 2019-February 3, 2023



Source: CARD, Iowa State University

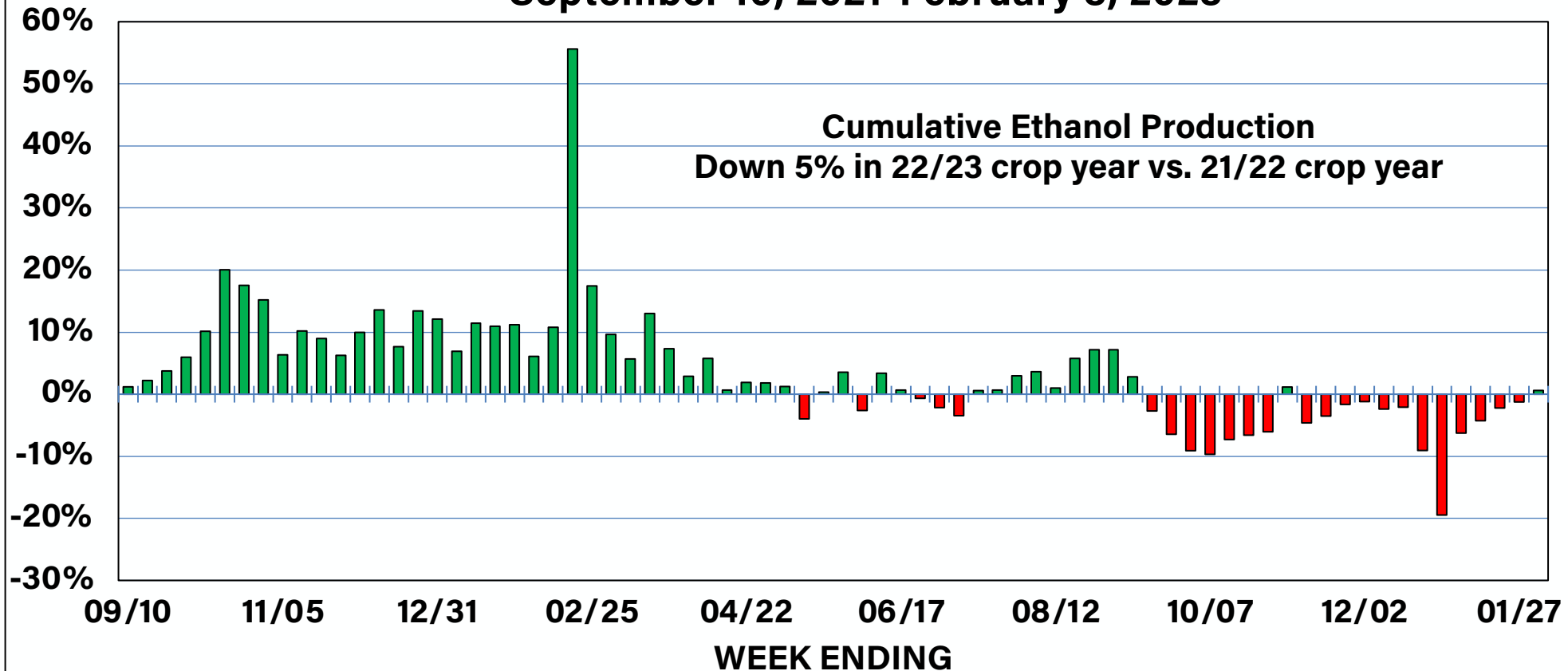
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# Weekly Ethanol Production Below Year Ago Levels Since Last Fall

**% Change in U.S. Weekly Ethanol Production from Prior Year  
September 10, 2021-February 3, 2023**



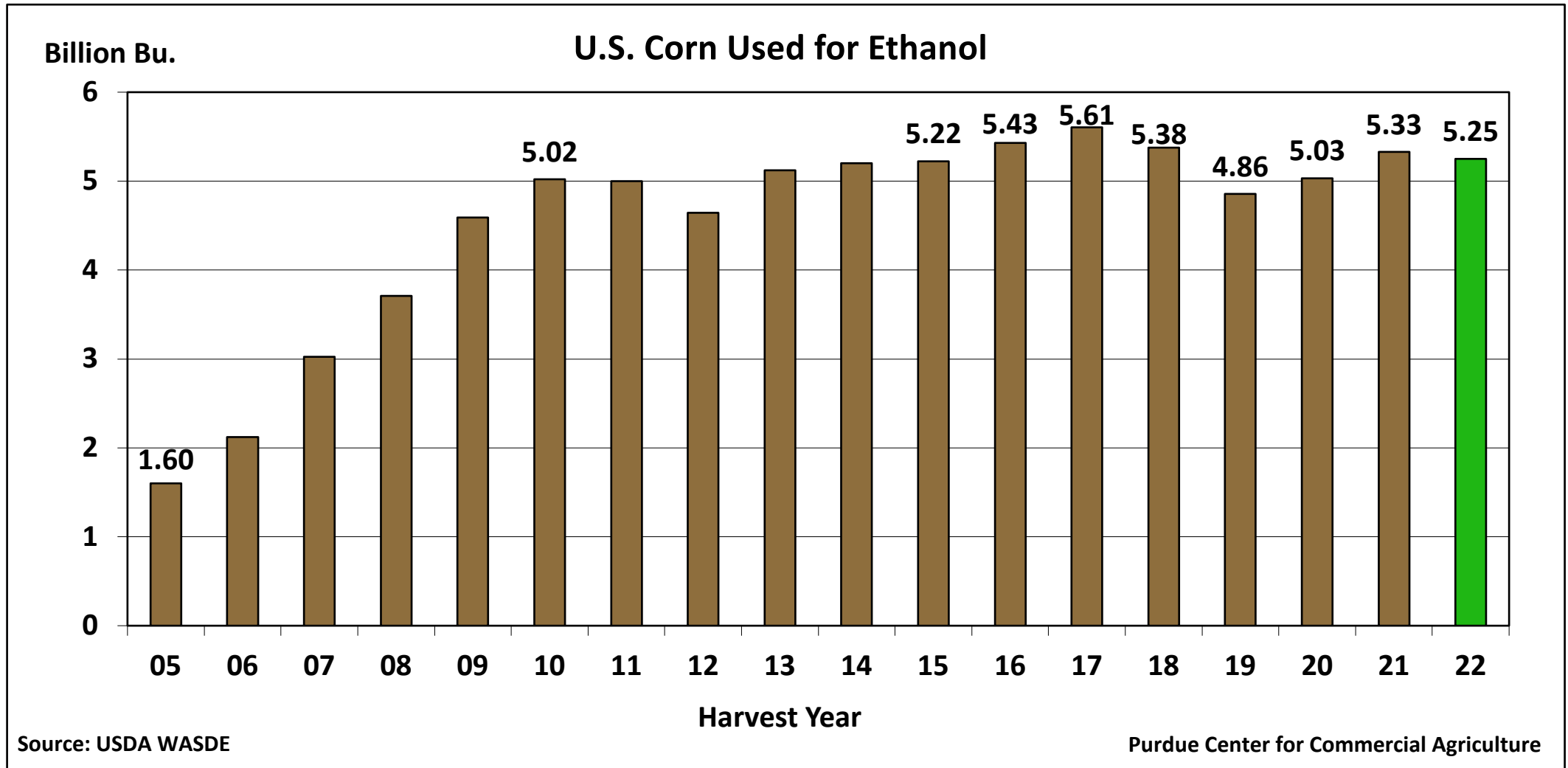
Source: U.S. Energy Information Agency

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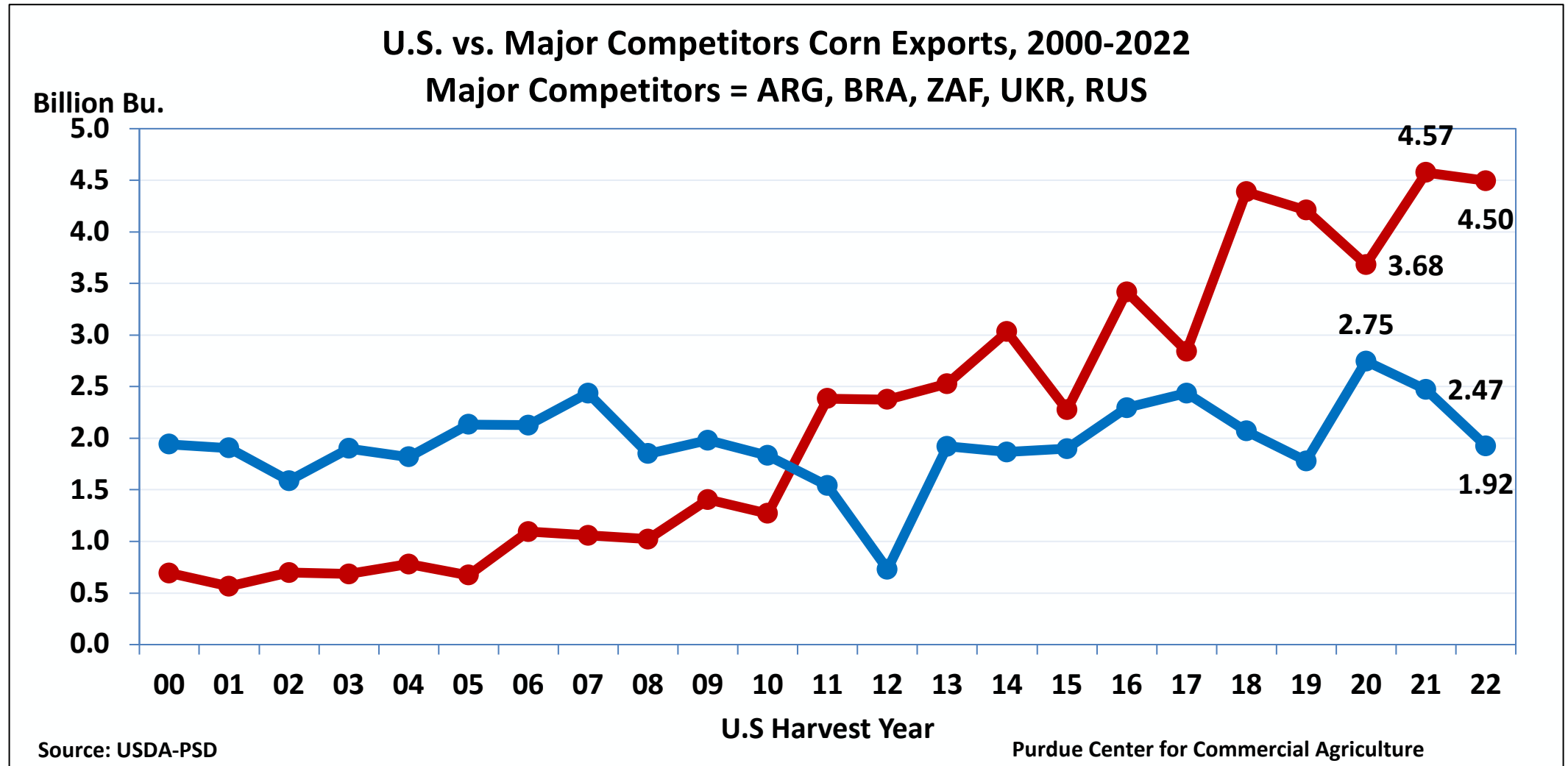


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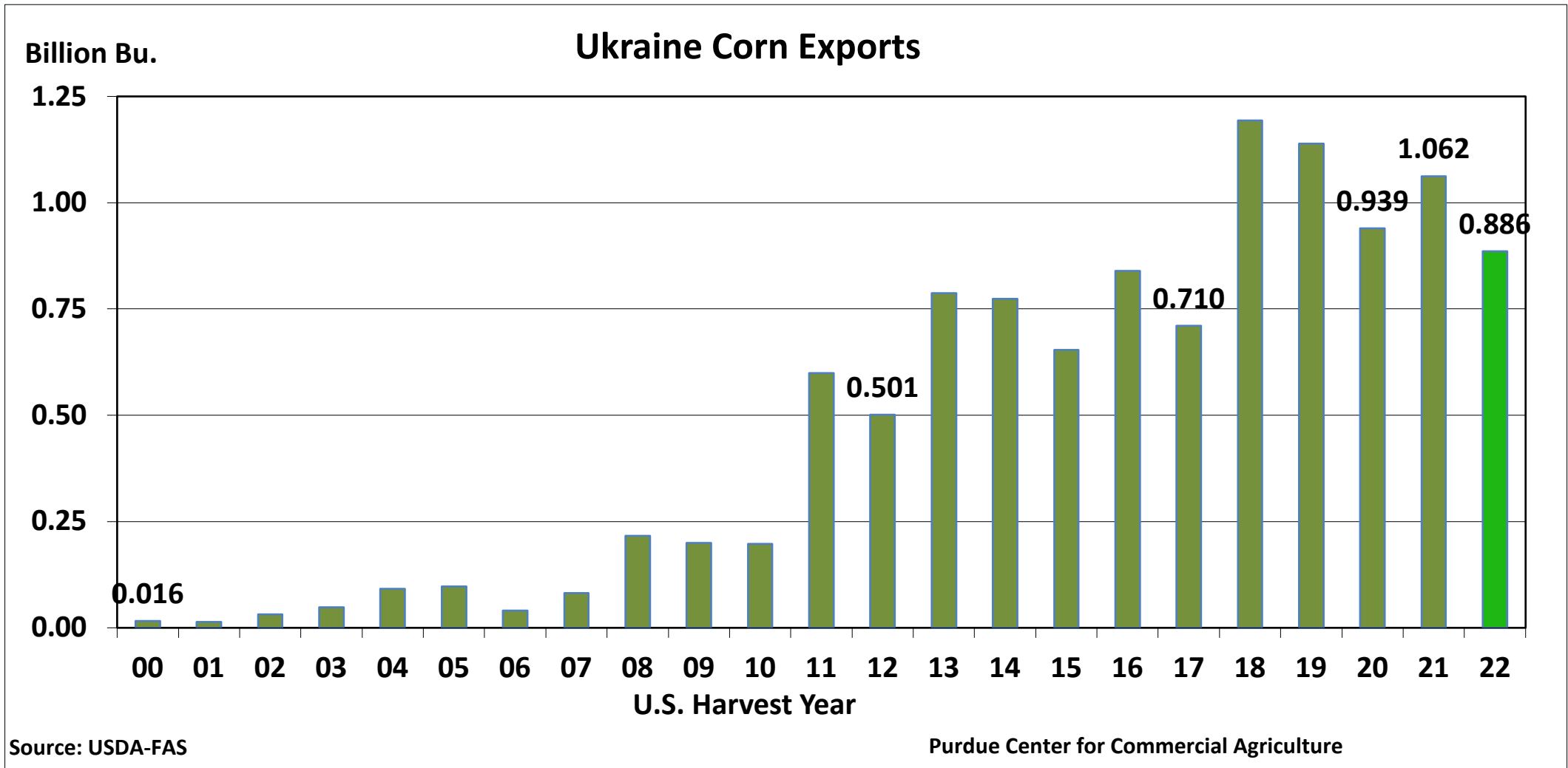
# *Weak Margins & Gasoline Usage Led USDA to Reduce Corn Used for Ethanol Estimate*



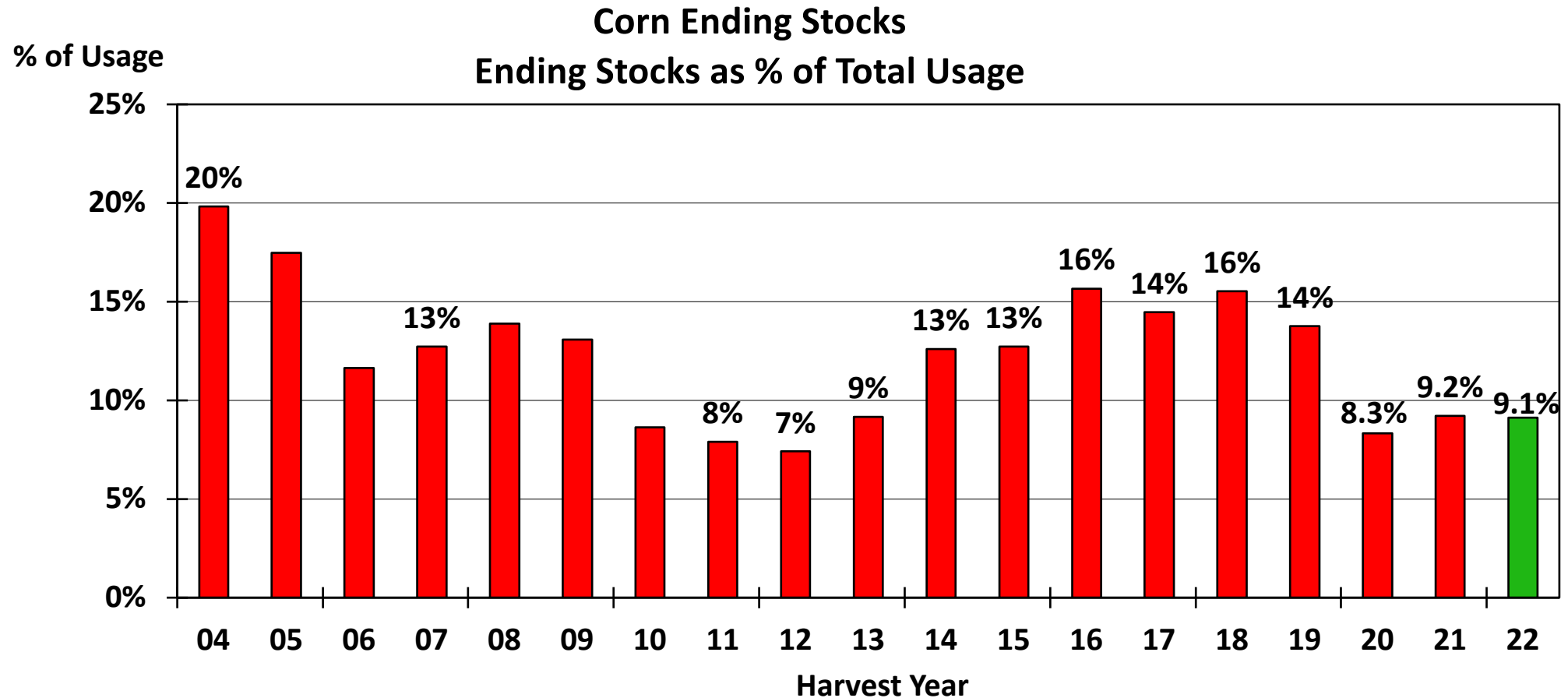
# Weak U.S. Corn Exports While S. American Exports Projected to Increase Substantially



# Corn Exports from Ukraine Remain a Wild Card in the Corn Outlook



# Ending Stocks Projection Up Slightly This Month, But Still Tight By Historical Standards



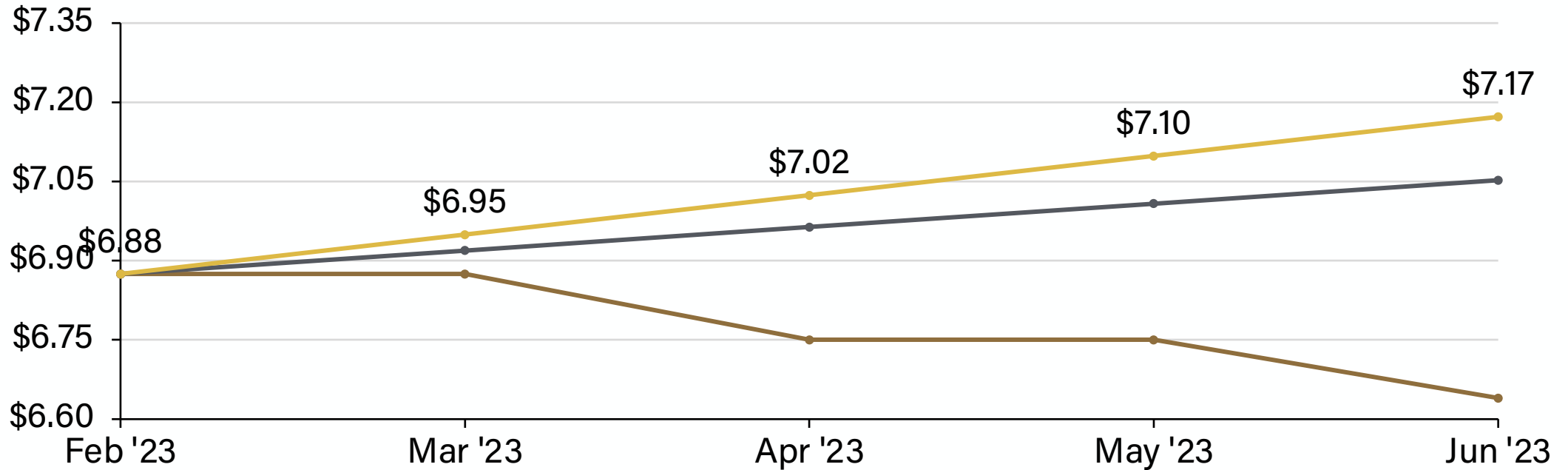
Source: USDA WASDE

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# Storage opportunities for corn?

## Cash Forward Contract Corn Bids East Central Indiana



— Cash Bid

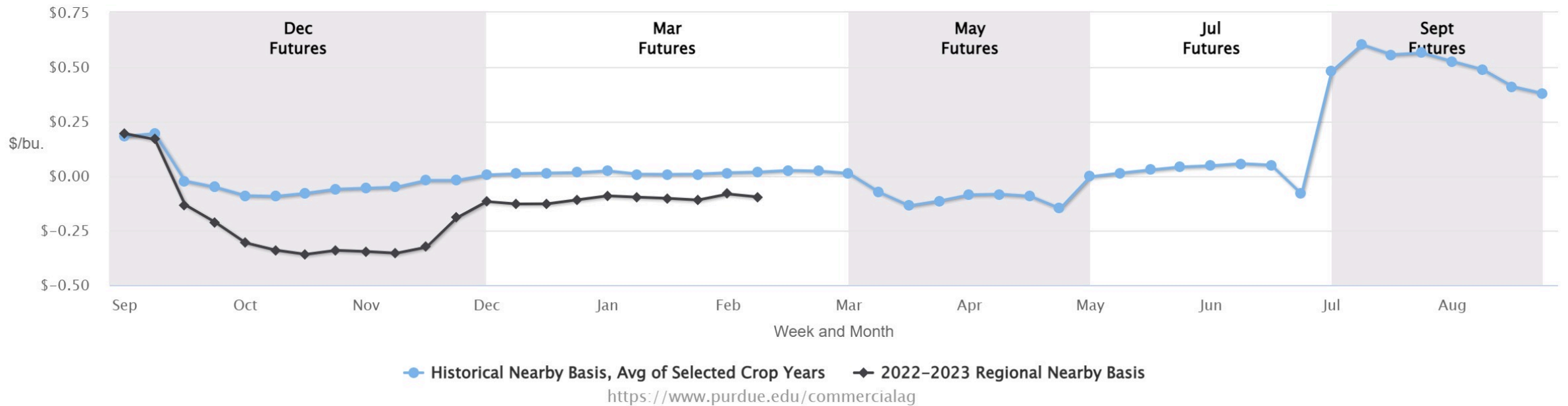
— Current Bid + On-Farm Storage Cost (\$0.01/bu/mo) + Opportunity Cost (6% APR)

— Current Bid + Commercial Storage Cost (\$0.04/bu/mo) + Opportunity Cost (6% APR)

# Corn basis - Central Indiana - 3 year average

## Purdue Center for Commercial Agriculture Crop Basis Tool

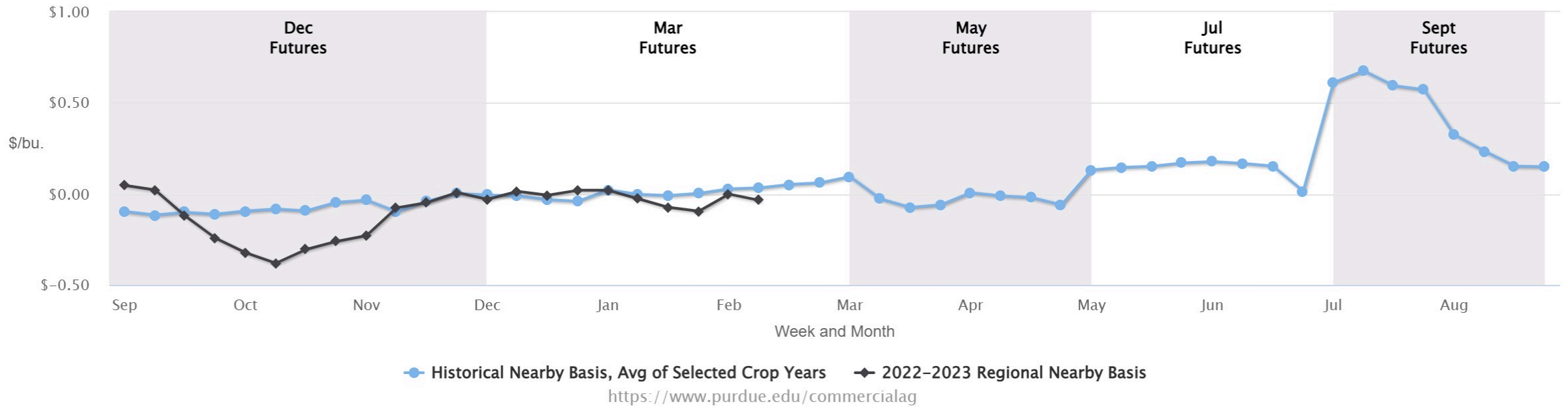
Corn: IN CENTRAL Region, Nearby Basis, Weekly  
Avg. of Selected Historical Crop Years [2019-2020, 2020-2021, 2021-2022]  
vs. Current Crop Year



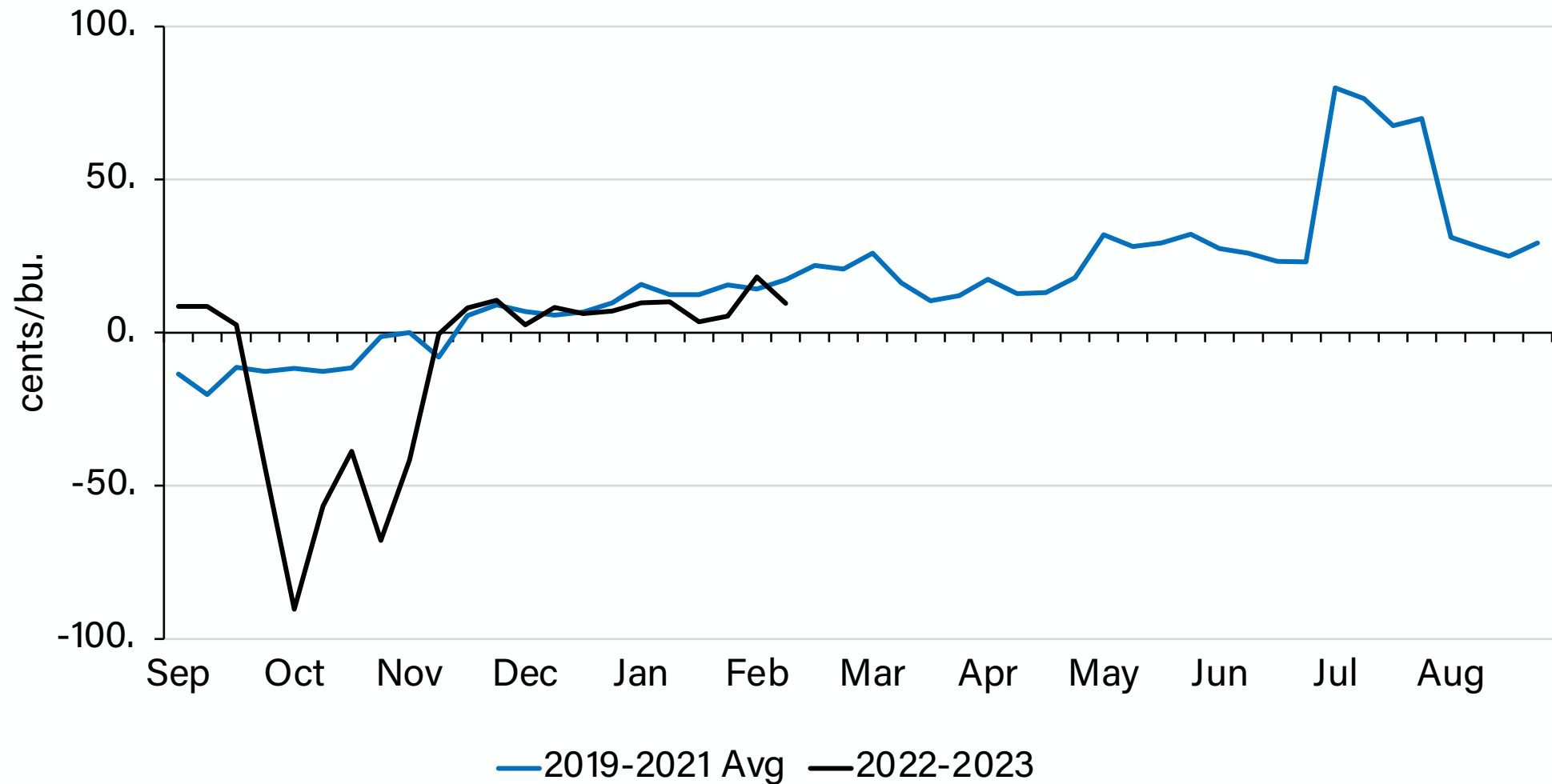
# Corn basis - Southwest Indiana - 3 year average

## Purdue Center for Commercial Agriculture Crop Basis Tool

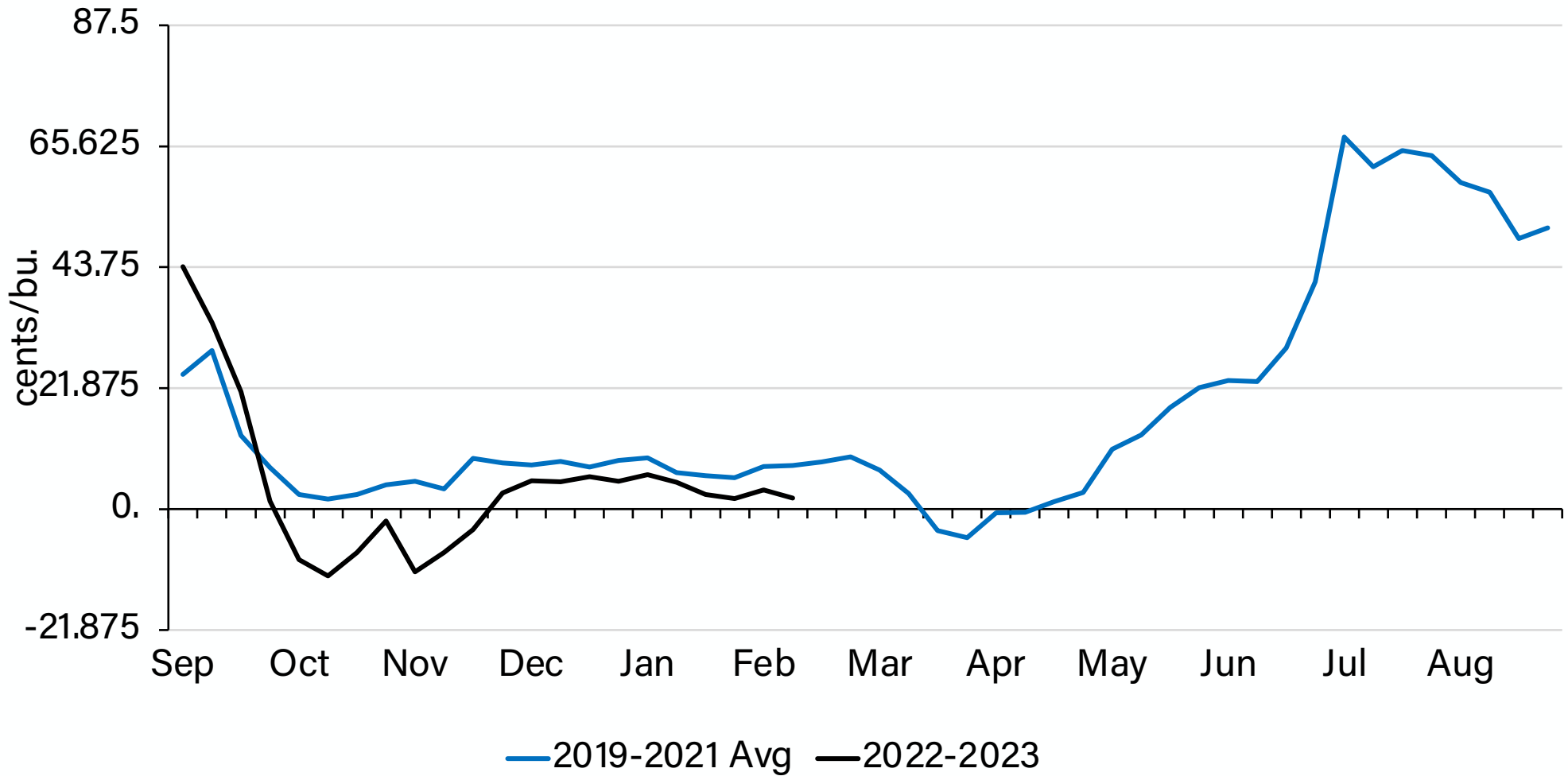
Corn: IN SW Region, Nearby Basis, Weekly  
Avg. of Selected Historical Crop Years [2019-2020, 2020-2021, 2021-2022]  
vs. Current Crop Year



# Nearby Corn River Basis-Southern Indiana and Southern Illinois River Terminal



# Nearby Indiana ethanol plant basis



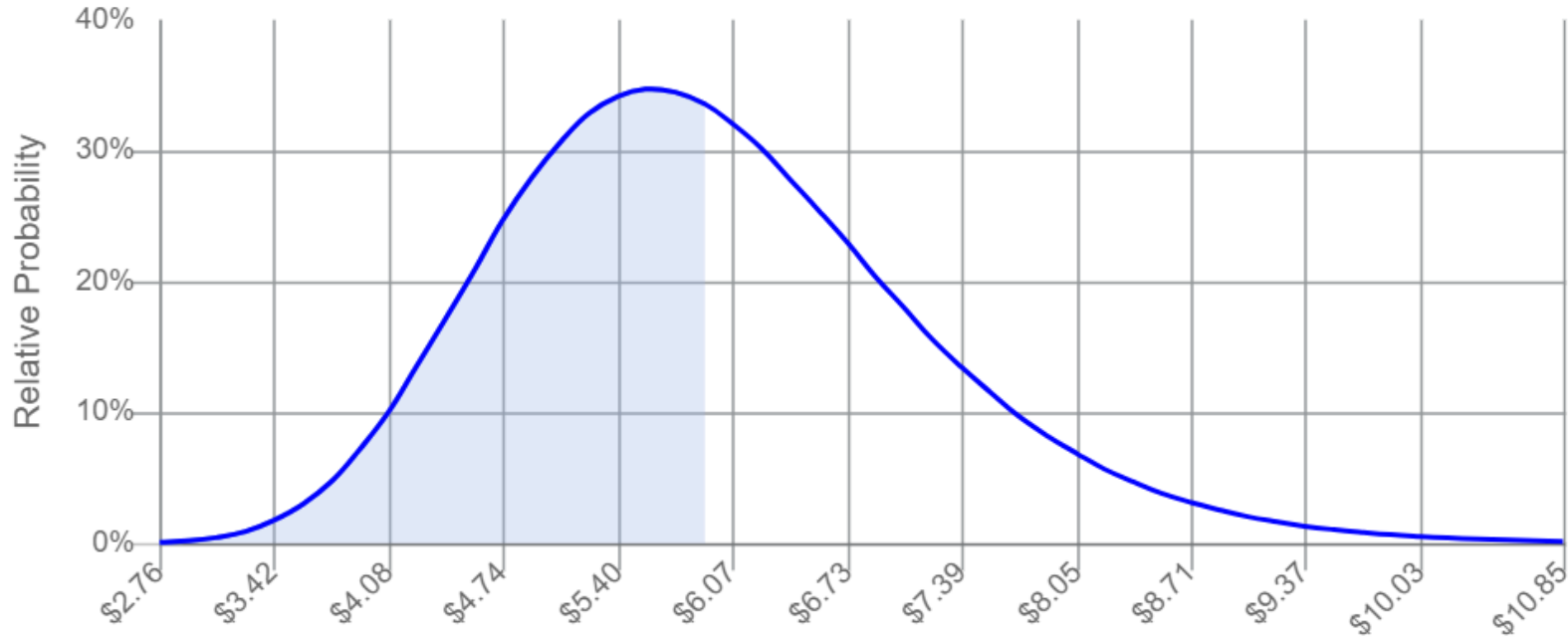
## *New crop corn opportunities?*

CBOT Dec. '23 Corn futures	\$5.95
<u>Expected corn basis Oct. '23 in Central IN</u>	<u>-\$0.25</u>
Expected Oct. cash price	\$5.70/bu.

Think in terms of risk management

How can you protect favorable price opportunities while leaving open upside potential?

### Probability of Prices at Expiration







Enter Price to Evaluate: \$ 5.95

The implied distribution indicates that there is a 53.94% probability that the price will be below \$5.95 at expiration.

Probability Below ▲	Price at Expiration ▲
5%	\$4.19
15%	\$4.74
25%	\$5.09
35%	\$5.40
45%	\$5.69
<b>50%</b>	<b>\$5.83</b>
55%	\$5.98
65%	\$6.30
75%	\$6.68
85%	\$7.18
95%	\$8.12

# USDA's February 2023 Soybean Balance Sheet

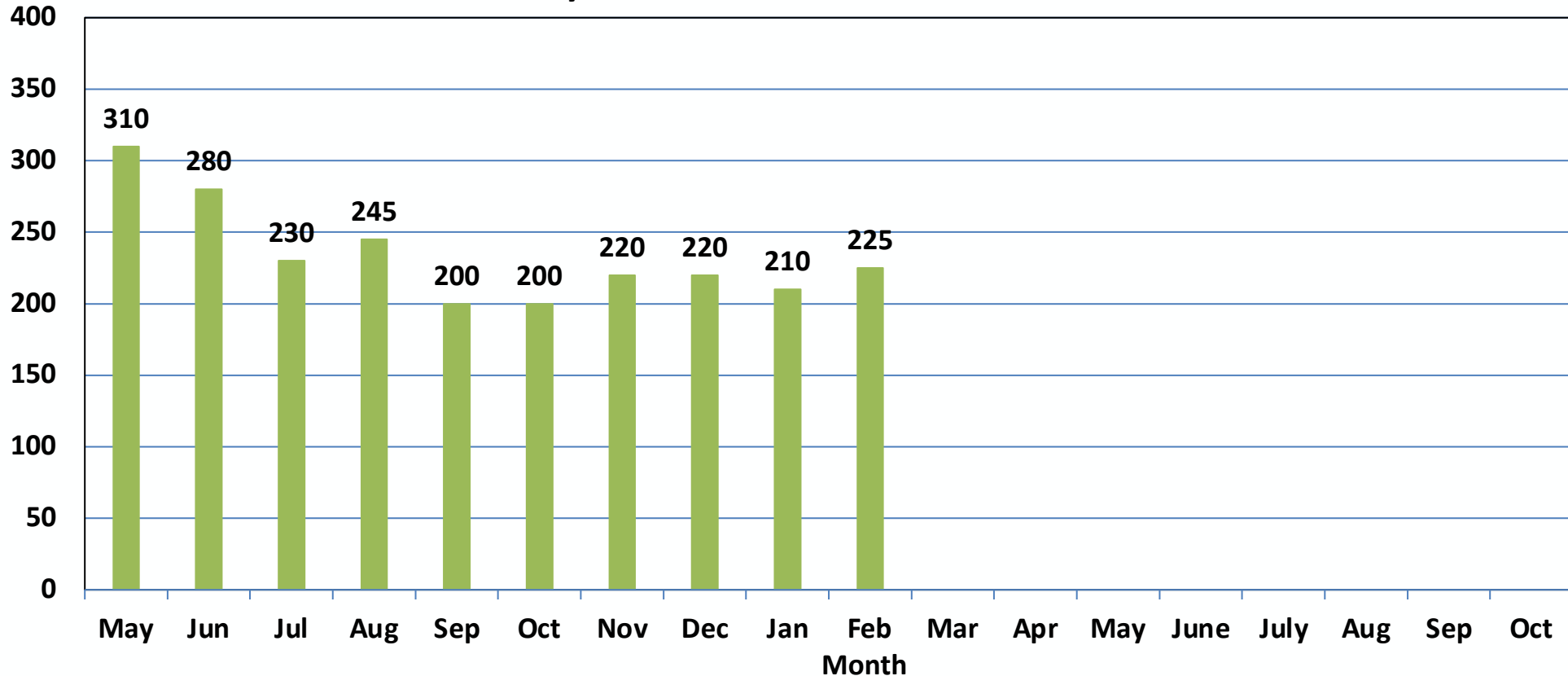
	20/21	21/22	Jan. Proj. 22/23	Feb. Proj. 22/23
		<i>Million Acres</i>		
Area Planted	83.4	87.2	87.5	87.5
Area Harvested	82.6	86.3	86.3	86.3
		<i>Bushels</i>		
Yield per Harvested Acre	51.0	51.7	49.5	49.5
		<i>Million Bushels</i>		
Beginning Stocks	525	257	274	274
Production	4,216	4,465	4,276	4,276
Imports	20	16	15	15
Supply, Total	4,761	4,738	4,566	4,566
Crushings	2,141	2,204	2,245	2,230 
Exports	2,266	2,158	1,990	1,990
Seed	101	102	102	102
Residual	-4	1	18	18
Use, Total	4,504	4,464	4,355	4,340 
Ending Stocks	257	274	210	225 
Avg. Farm Price (\$/bu) 2/	10.80	13.30	14.20	14.30 



# Reduction in Soybean Crush Estimate Pushed Ending Stocks Estimate Up

## USDA's 2022 Crop Year U.S. Soybean Ending Stocks Forecasts By Month When Forecast Was Published

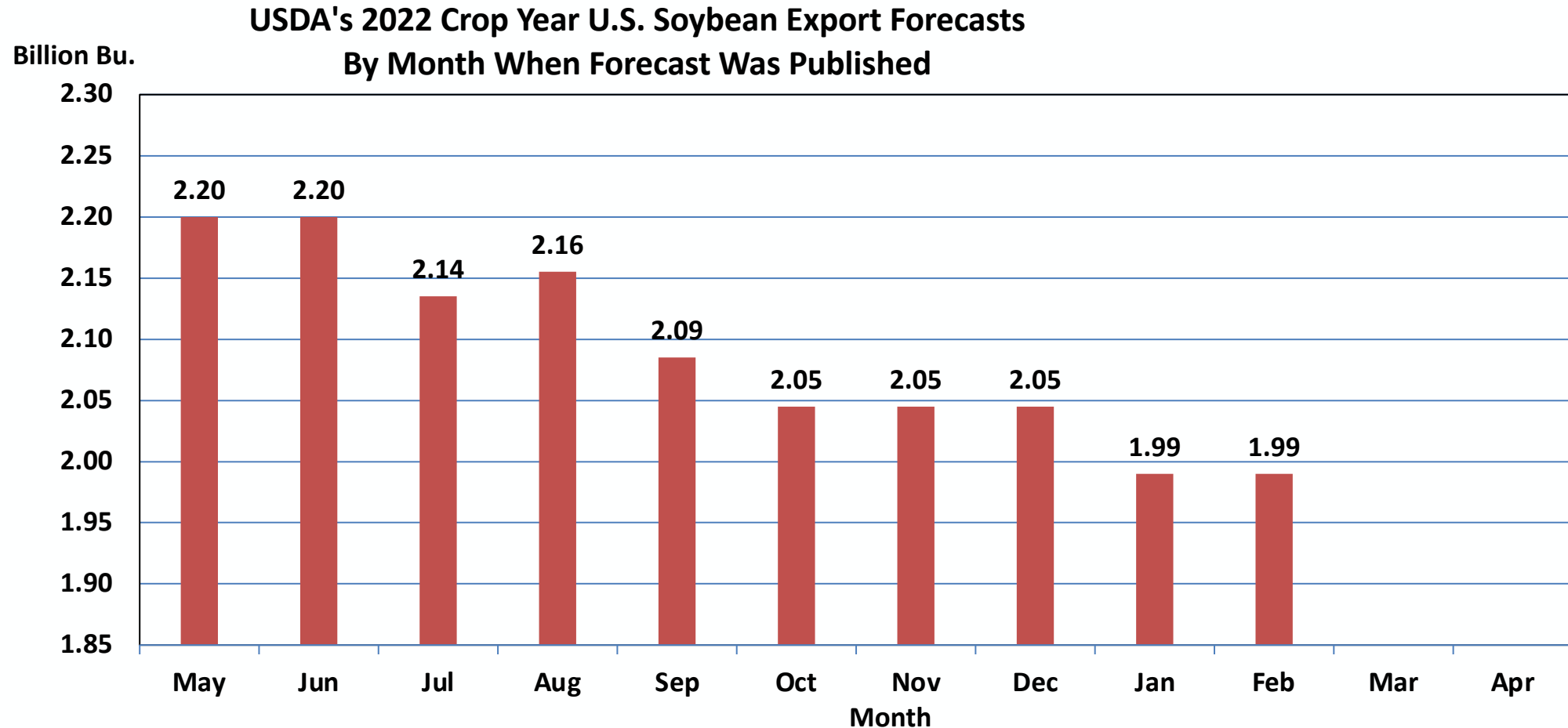
Million Bu.



Source: USDA-WASDE

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# No Change in USDA's Export Forecast...But S. American Competition Looms Large



Source: USDA-WASDE

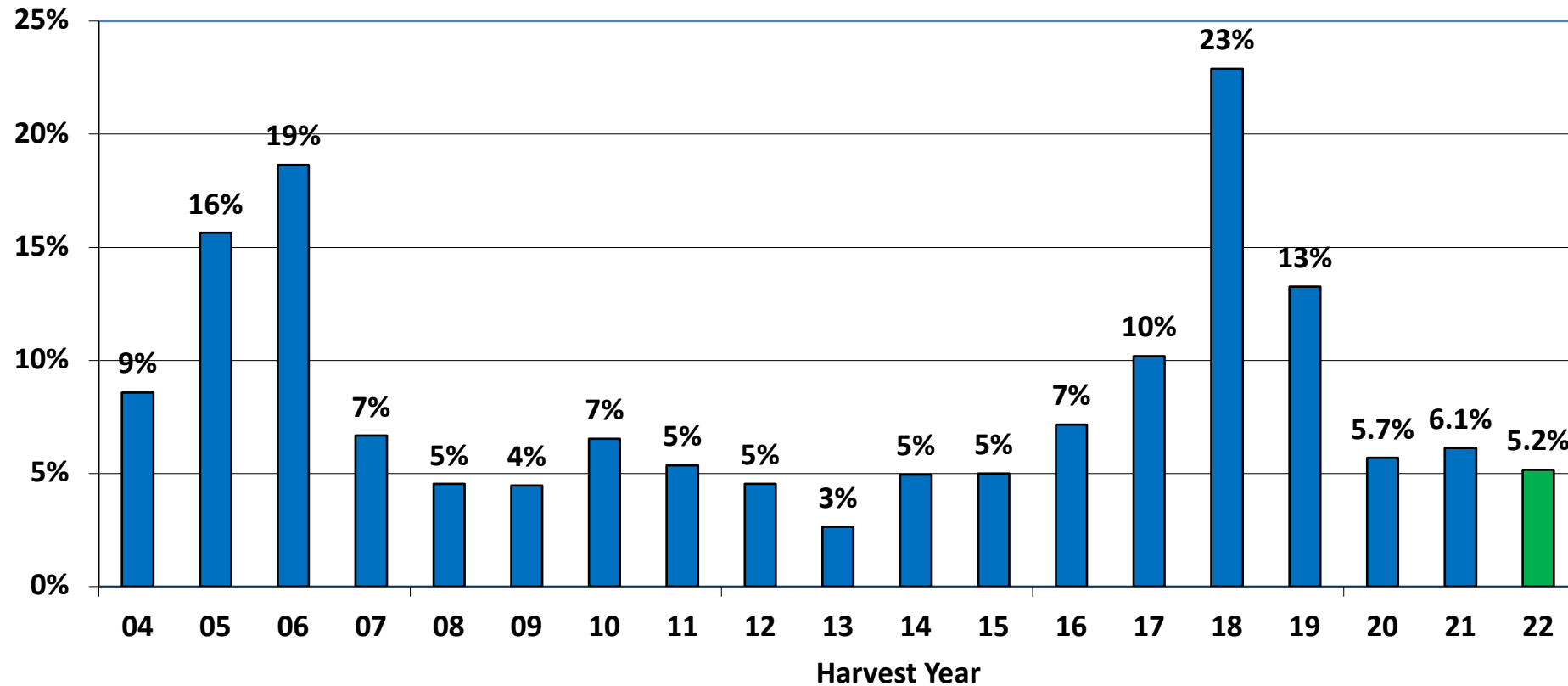
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# Projected Ending Stocks Up Over 5%...But That's Still a Tight Carryover Level

U.S. Soybean Ending Stocks  
Ending Stock as % of Total Usage

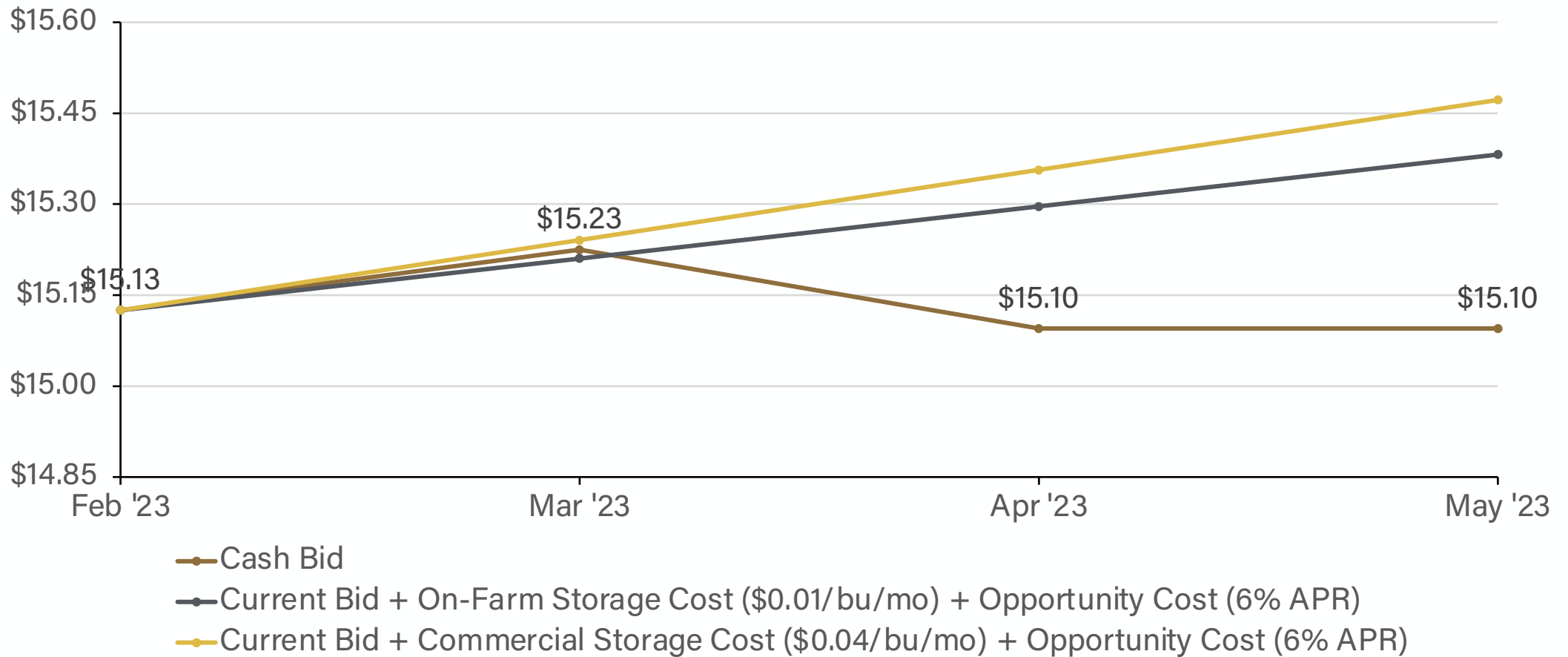


Source: USDA-WASDE

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# Storage Opportunities for Soybeans?

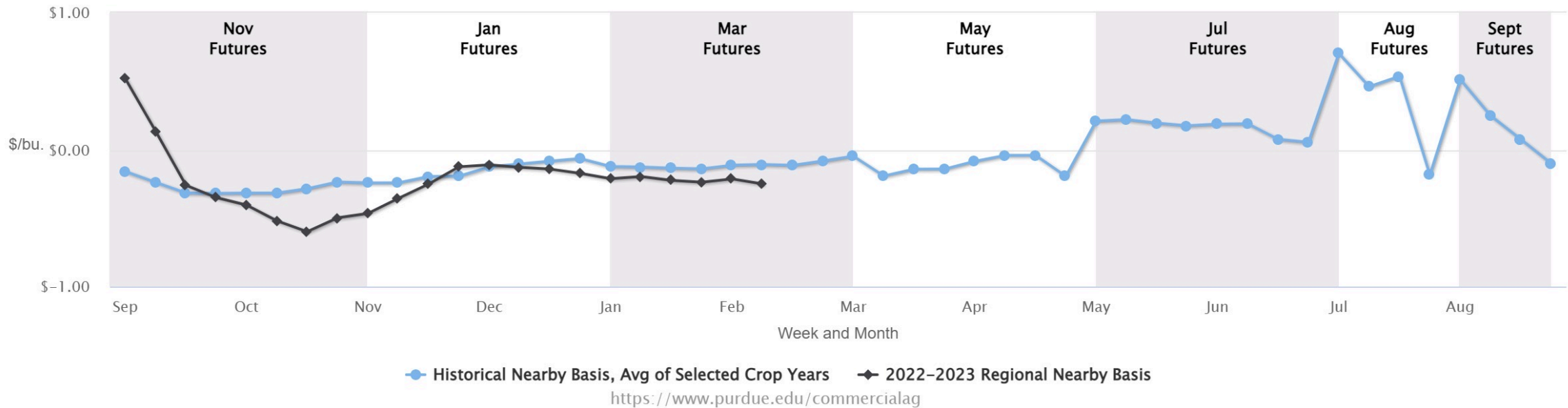
Cash Forward Contract Soybean Bids  
Central Indiana



# Soybean basis - Central Indiana - 2 year average

## Purdue Center for Commercial Agriculture Crop Basis Tool

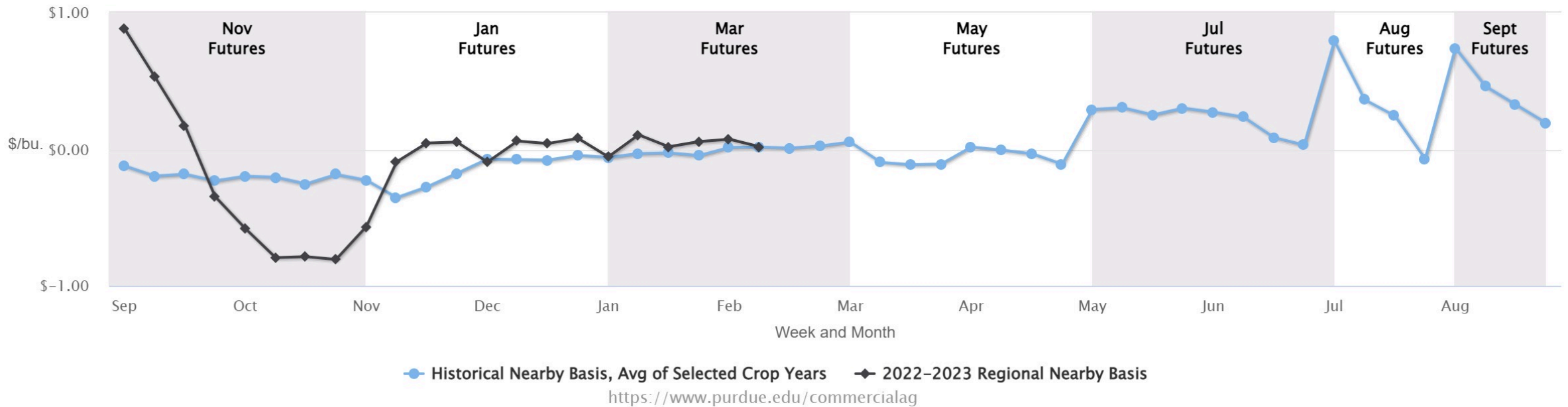
Soybeans: IN CENTRAL Region, Nearby Basis, Weekly  
Avg. of Selected Historical Crop Years [2020-2021, 2021-2022]  
vs. Current Crop Year



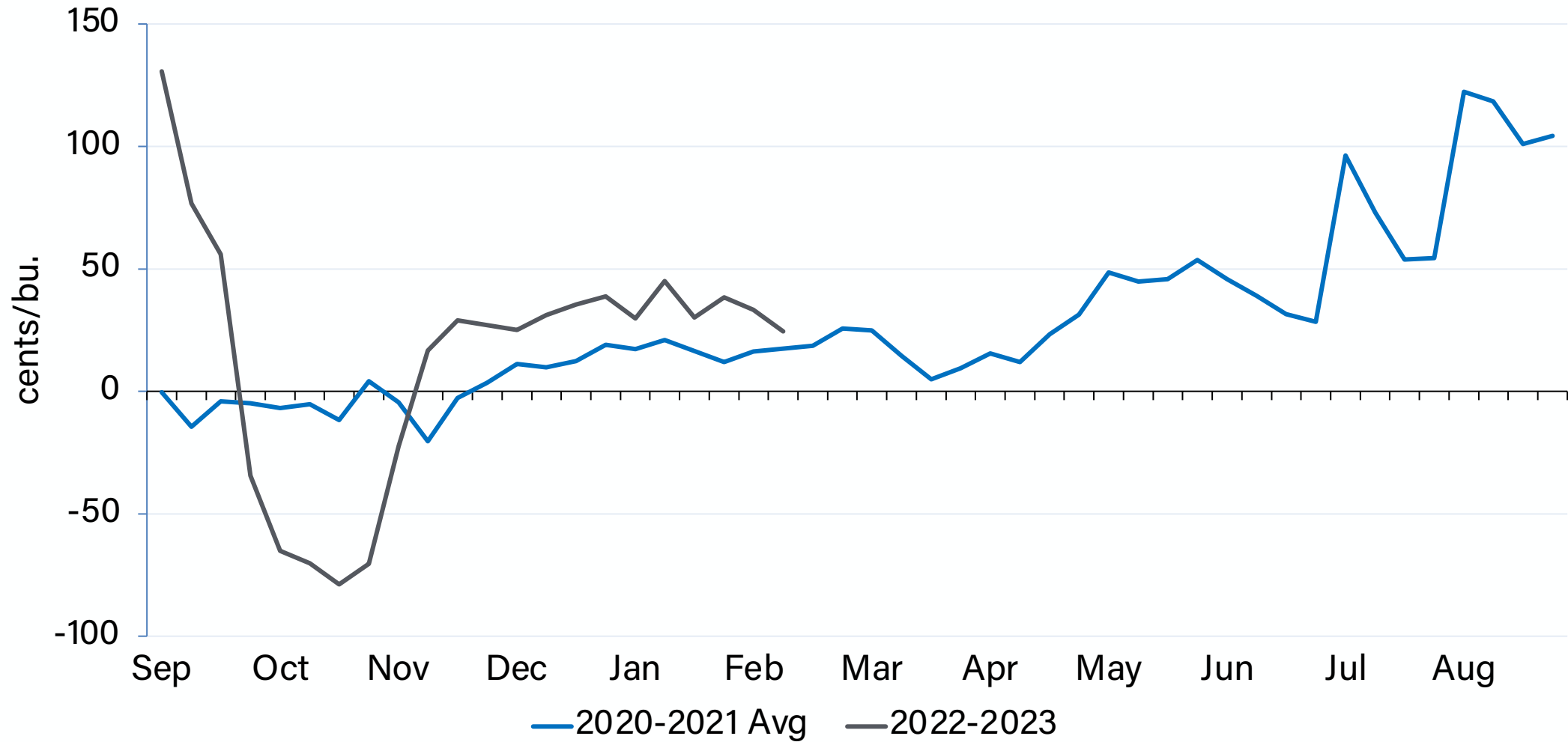
# Soybean basis - Southwest Indiana - 2 year average

## Purdue Center for Commercial Agriculture Crop Basis Tool

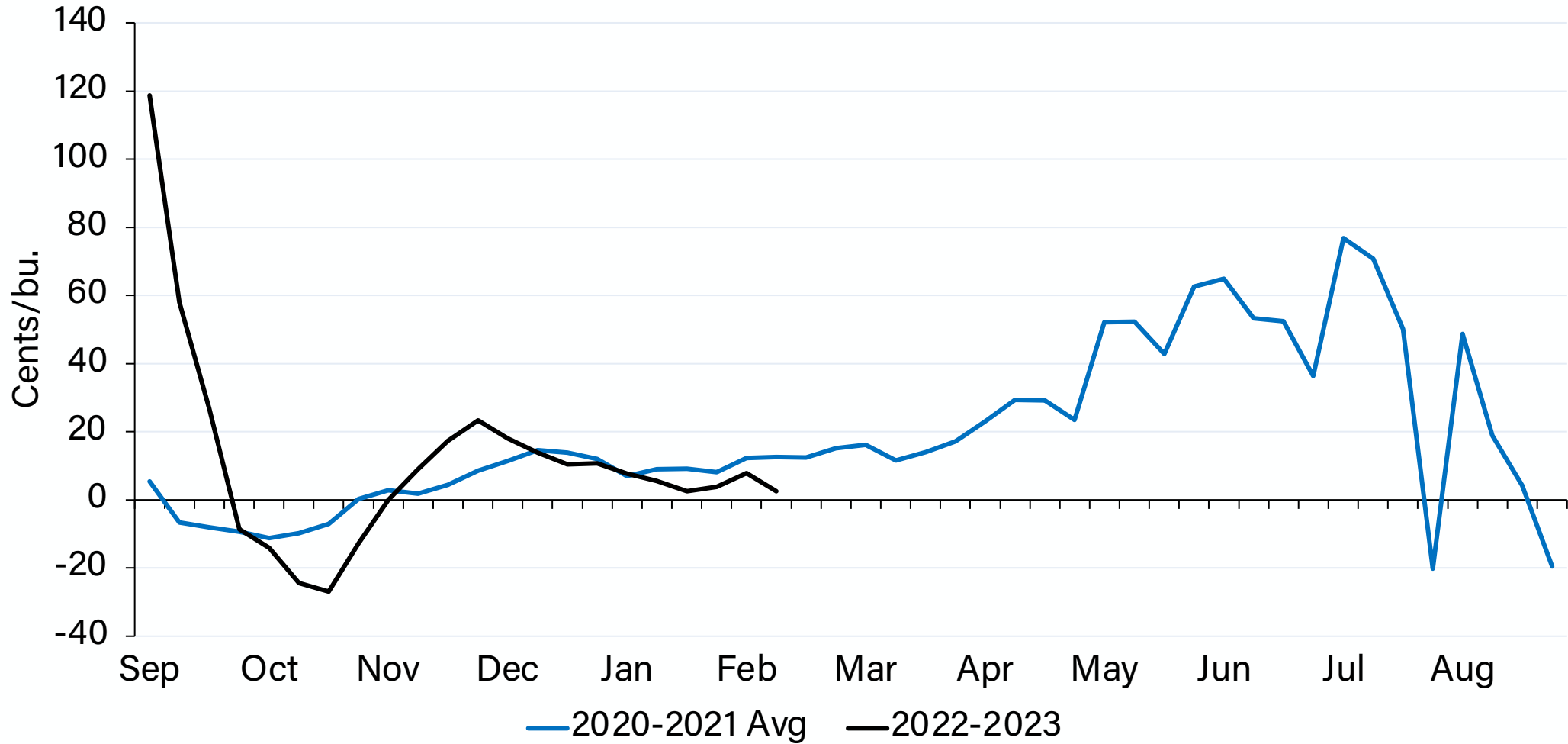
Soybeans: IN SW Region, Nearby Basis, Weekly  
 Avg. of Selected Historical Crop Years [2020-2021, 2021-2022]  
 vs. Current Crop Year



# Nearby Soybean River Basis-Southern Indiana and Southern Illinois River Terminals



# Nearby Indiana soybean processor basis





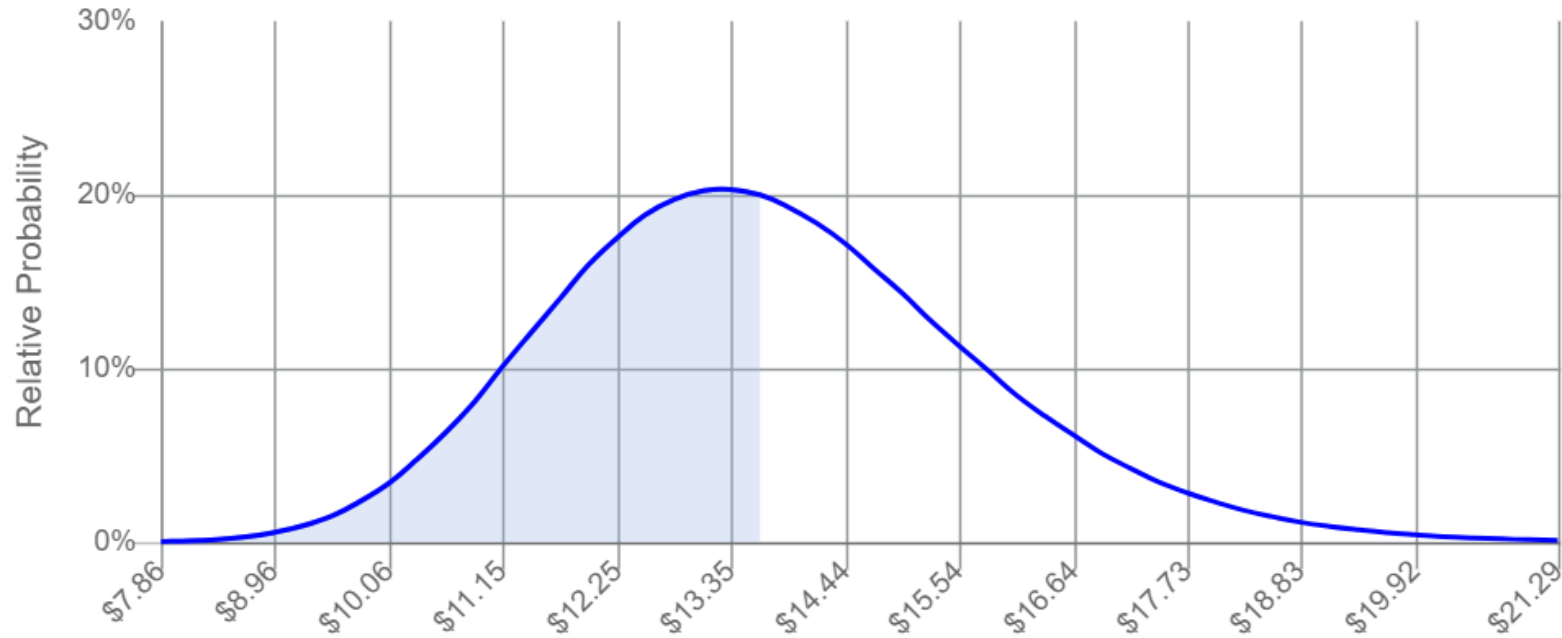
# *New crop soybean opportunities?*

CBOT Nov. '23 Soybean futures	\$13.72
<u>Expected soybean basis Oct. '23 in Central IN</u>	<u>- \$0.40</u>
Expected Oct. cash price	\$13.32/bu.

- Think in terms of risk management
- How can you protect favorable price opportunities while leaving open upside potential?

# farmdoc Price Distribution for Nov. '23 Soybean Futures

Probability of Prices at Expiration



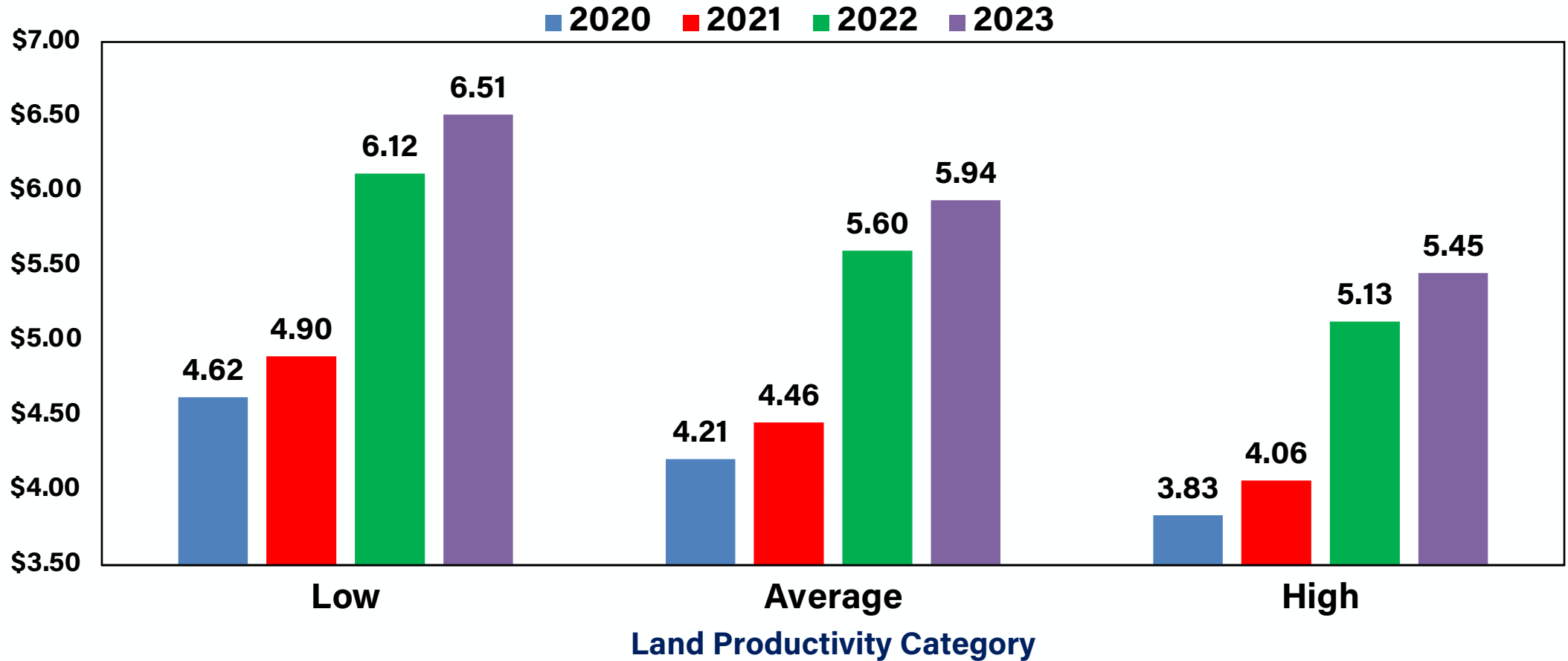
Enter Price to Evaluate: \$ 13.72

The implied distribution indicates that there is a 53.39% probability that the price will be below \$13.72 at expiration.

Probability Below ▲	Price at Expiration ▲
5%	\$10.65
15%	\$11.64
25%	\$12.28
35%	\$12.81
45%	\$13.30
50%	\$13.55
55%	\$13.80
65%	\$14.34
75%	\$14.96
85%	\$15.77
95%	\$17.23

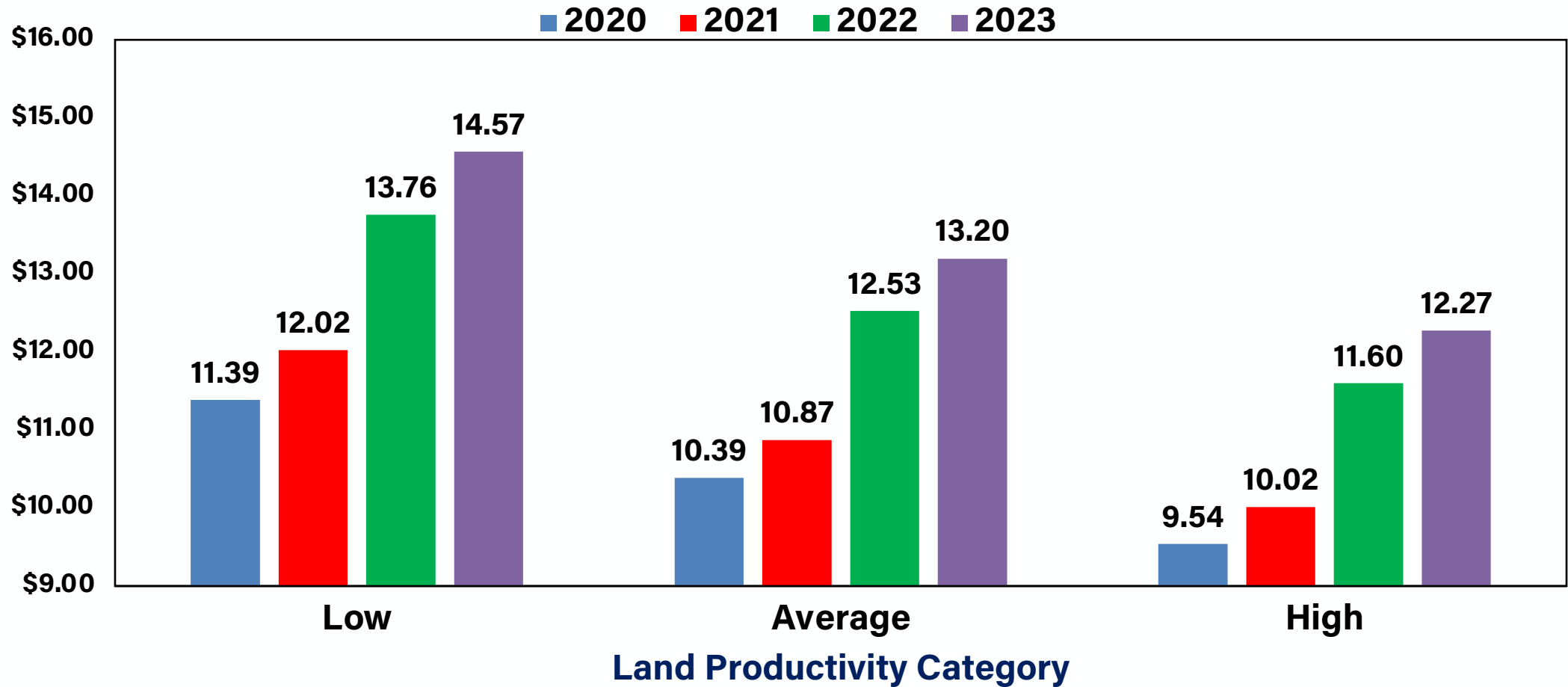
# *Breakeven for Average Productivity Up 33% Since 2021*

## Breakeven Prices for Rotation Corn in Indiana



# *Breakeven for Average Productivity Up 21% Since 2021*

## Breakeven Prices for Rotation Soybeans in Indiana



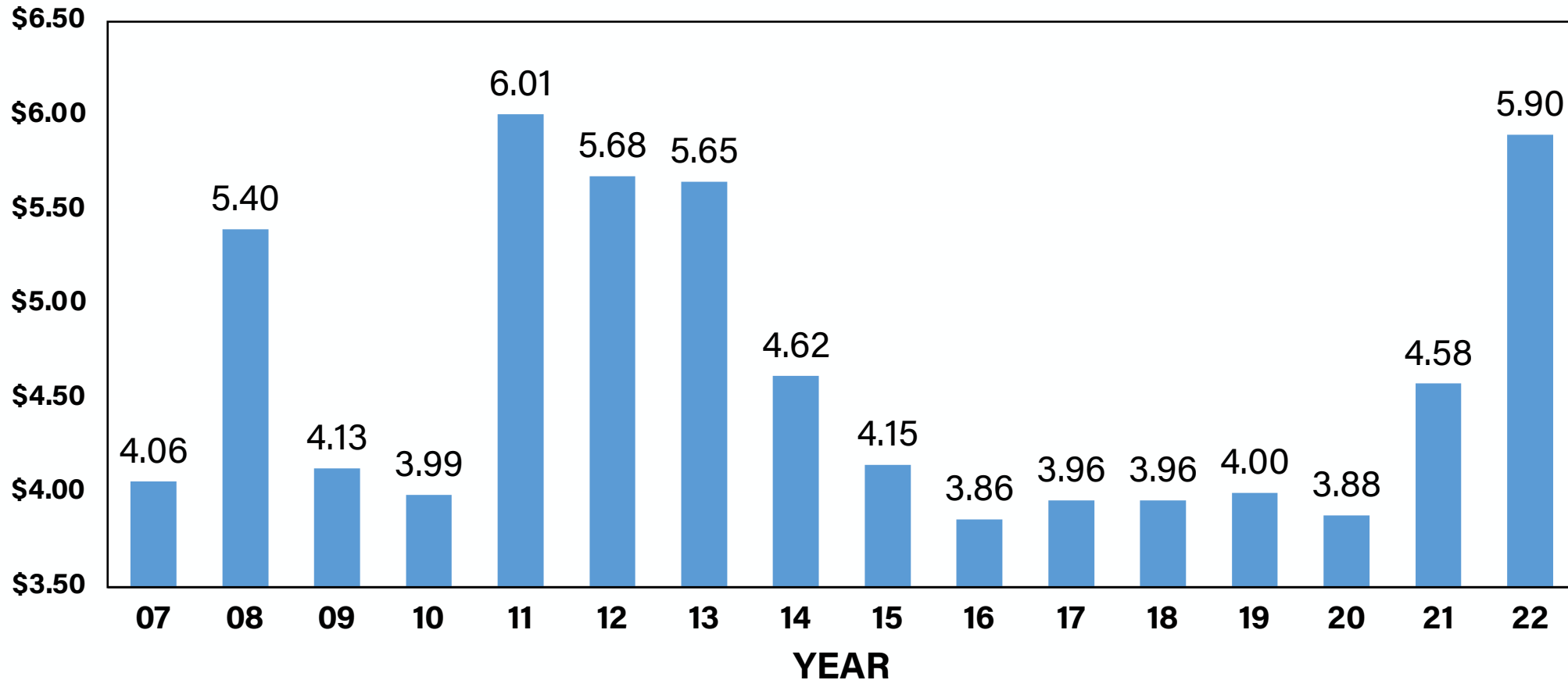
# COMPARING 2<sup>ND</sup> YEAR SOYBEANS TO ROTATION CORN IN THE EASTERN CORN BELT

## Corn Prices Required to Produce Per Acre Returns Equivalent to Soybeans

Soybean Price	Low Productivity (C=152; SB=46)	Avg. Productivity (C=184; SB=56)	High Productivity (C=216; SB=66)
\$12.50	\$5.89	\$5.73	\$5.52
\$13.00	\$6.04	\$5.88	\$5.68
\$13.50	\$6.19	\$6.03	\$5.83
\$14.00	\$6.34	\$6.18	\$5.98
\$14.50	\$6.49	\$6.34	\$6.13
\$15.00	\$6.64	\$6.49	\$6.29

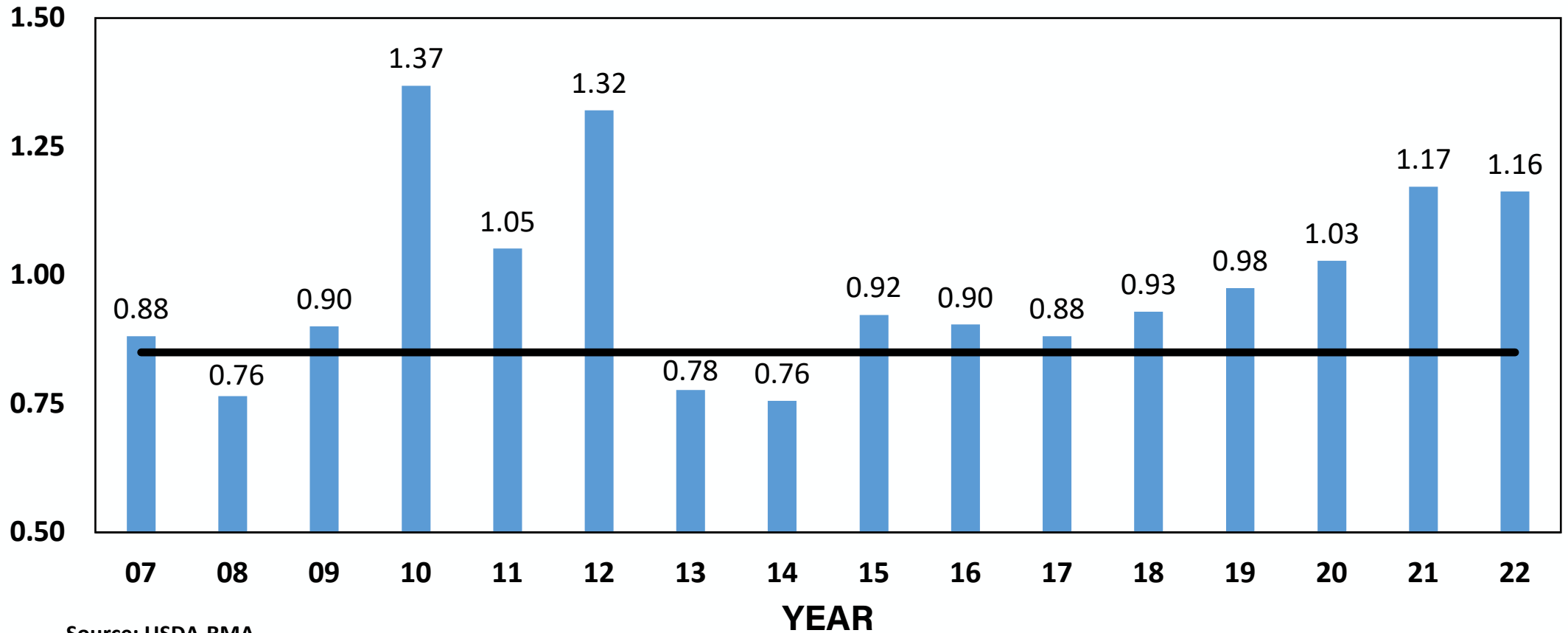
**2023's Price Guarantee Won't Be Available Until March 1<sup>st</sup> ....But Average Up Through 2/10/23 = \$5.95**

**Projected (February) Crop Insurance Prices for Corn (\$ per bushel)**  
**Source: USDA-RMA**



# Ratio of Harvest to February Crop Insurance Price Fell Below 0.85 in Just 3 of Last 16 Years

RATIO OF HARVEST TO FEBRUARY CROP INSURANCE PRICES FOR CORN , 2007-2022



Source: USDA-RMA



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## Comparison of Crop Insurance Bundles for Corn...Should You Increase Your Coverage Level?

Assumptions (Posey County, Indiana): 1) \$5.95 projected price; volatility = 0.23 2) Farm and county trend yield = 183 3) Projected Price > Harvest Price	Estimated Premium Enterprise Units	Farm-Level Revenue Guarantee	Additional County Revenue Guarantee
RP: 75%	\$18.29	\$817	\$0
RP: 80%	\$31.29	\$871	\$0
RP: 85%	\$56.25	\$926	\$0
$\frac{\$24.96}{\$55.00} = 45\%$ + \$24.96 (from RP: 80%) + \$55.00 (from RP: 85%)			
RP: 85%, SCO, and ECO: 90%	\$71.75	\$926	+\$54
RP: 85%, SCO, and ECO: 95%	\$92.80	\$926	+\$108



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