

# Budgeting and Farm Income in 2020 and 2021

**I**  
**ILLINOIS**  
Agricultural &  
Consumer Economics  
COLLEGE OF AGRICULTURAL, CONSUMER  
& ENVIRONMENTAL SCIENCES



**Dale Lattz**



**farmdocDAILY**



**Gary Schnitkey**



# Was it a good move to cancel Big Ten football this year?

- Yes, it was a prudent move
- No, should have played as scheduled without fans
- No, should have played as scheduled with fans
- No, should have tried more to play later in the fall

# Topics

## 1. Revenue

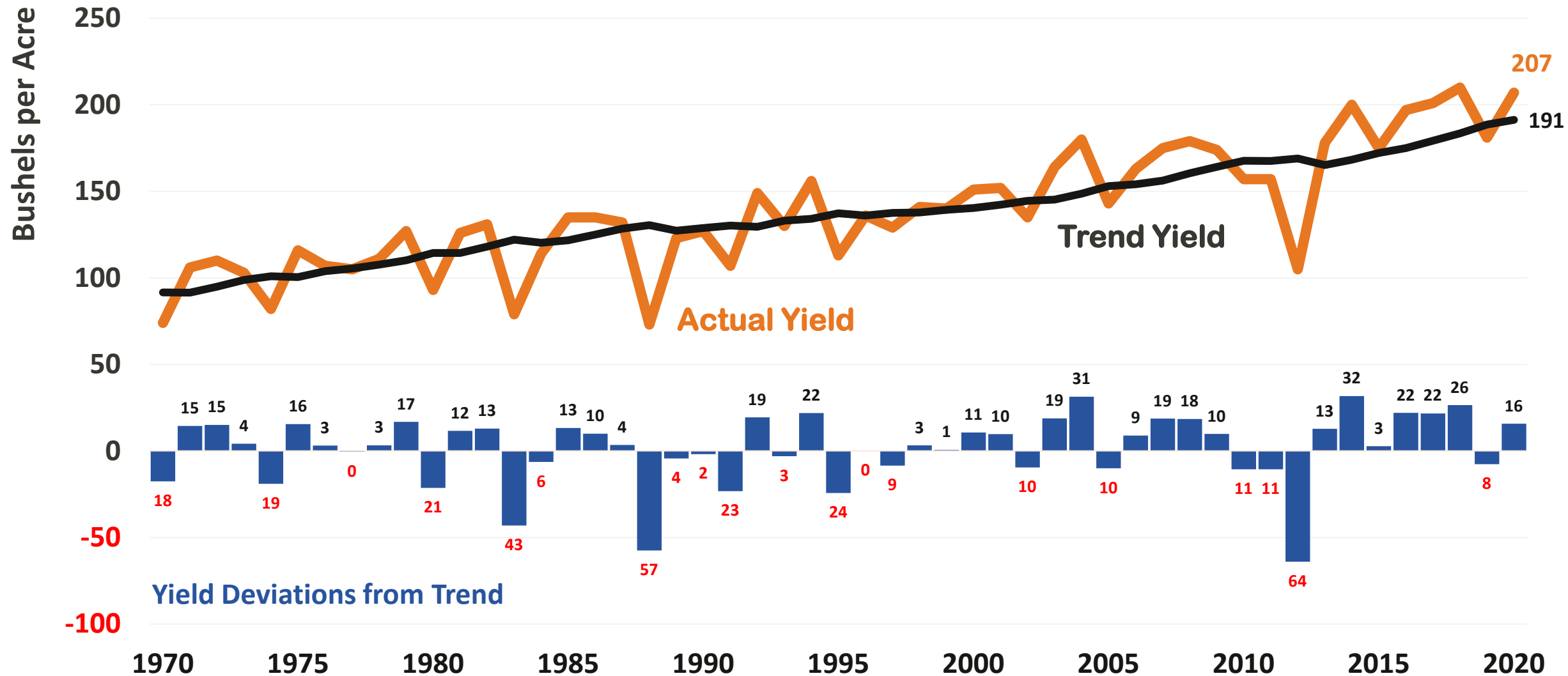
- Yields
- Prices
- ARC/PLC and Crop insurance
- CFAP
- WHIP+/PPP/EDIL
- CFAP-2

## 2. Crop budgets

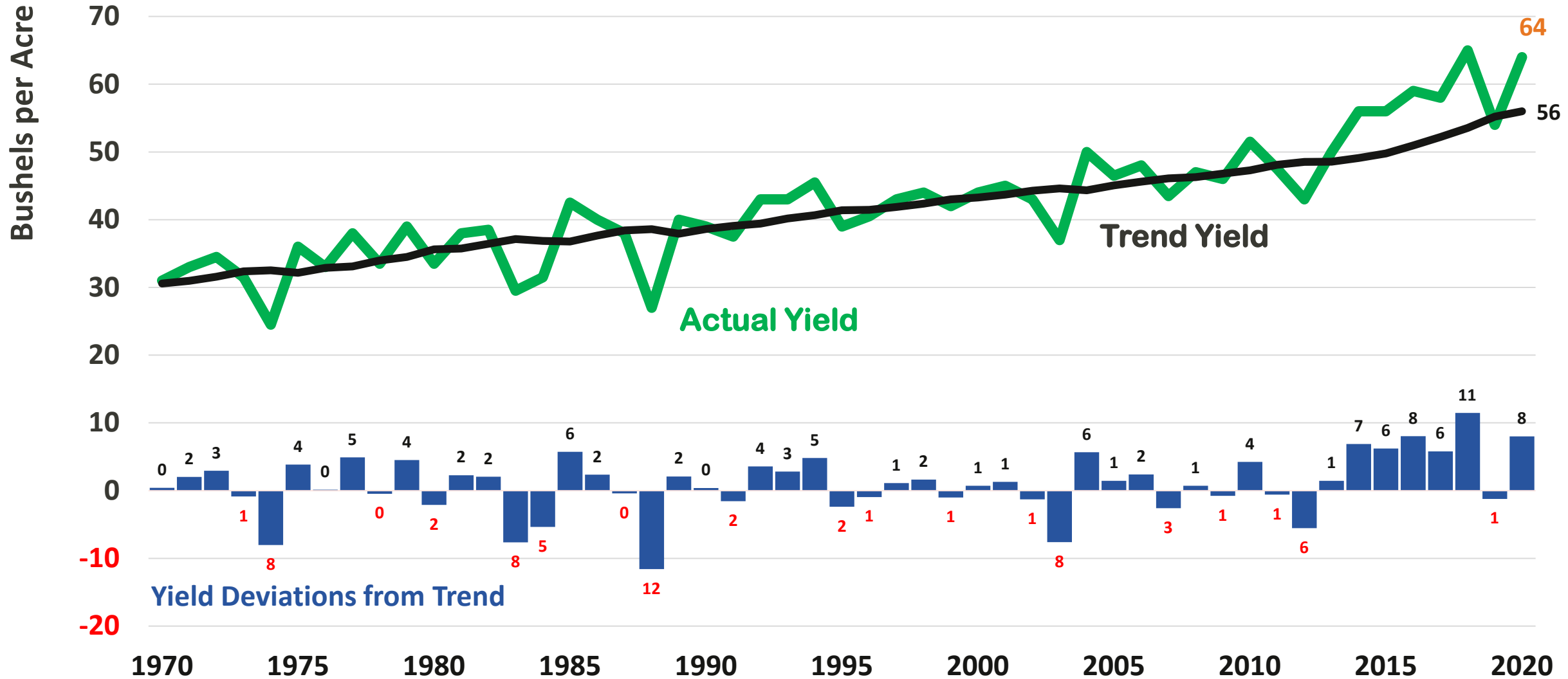
## 3. Cutting costs

- Fertilizer
- Tillage
- Cash rent

# Illinois Corn Yields, 1970 to 2020P



# Illinois Soybean Yields, 1970 to 2020P



# WASDE Release (August 12, 2020)

## Corn (181.8 bushels per acre national yield)

- 2020 market year prices: \$3.60
- 2021 market year price \$3.10

## Soybeans (53.3 bushels per acre national yield)

- 2020 Market year prices: \$8.55
- 2021 market year price \$8.35



Table 1. Market Year Price Estimates, Pre and Post Introduction of COVID-19<sup>1</sup>

Marketing Year	Corn			Soybeans		
	Pre-COVID	Post-COVID	Change	Pre-COVID	Post-COVID	Change
2019	3.85	3.50	-9.1%	8.75	8.50	-2.9%
2020	3.70	3.20	-13.5%	8.80	8.20	-6.8%
2021	3.60	3.40	-5.6%	8.70	8.30	-4.6%

Our projections on  
April 29, 2020  
farmdoc daily

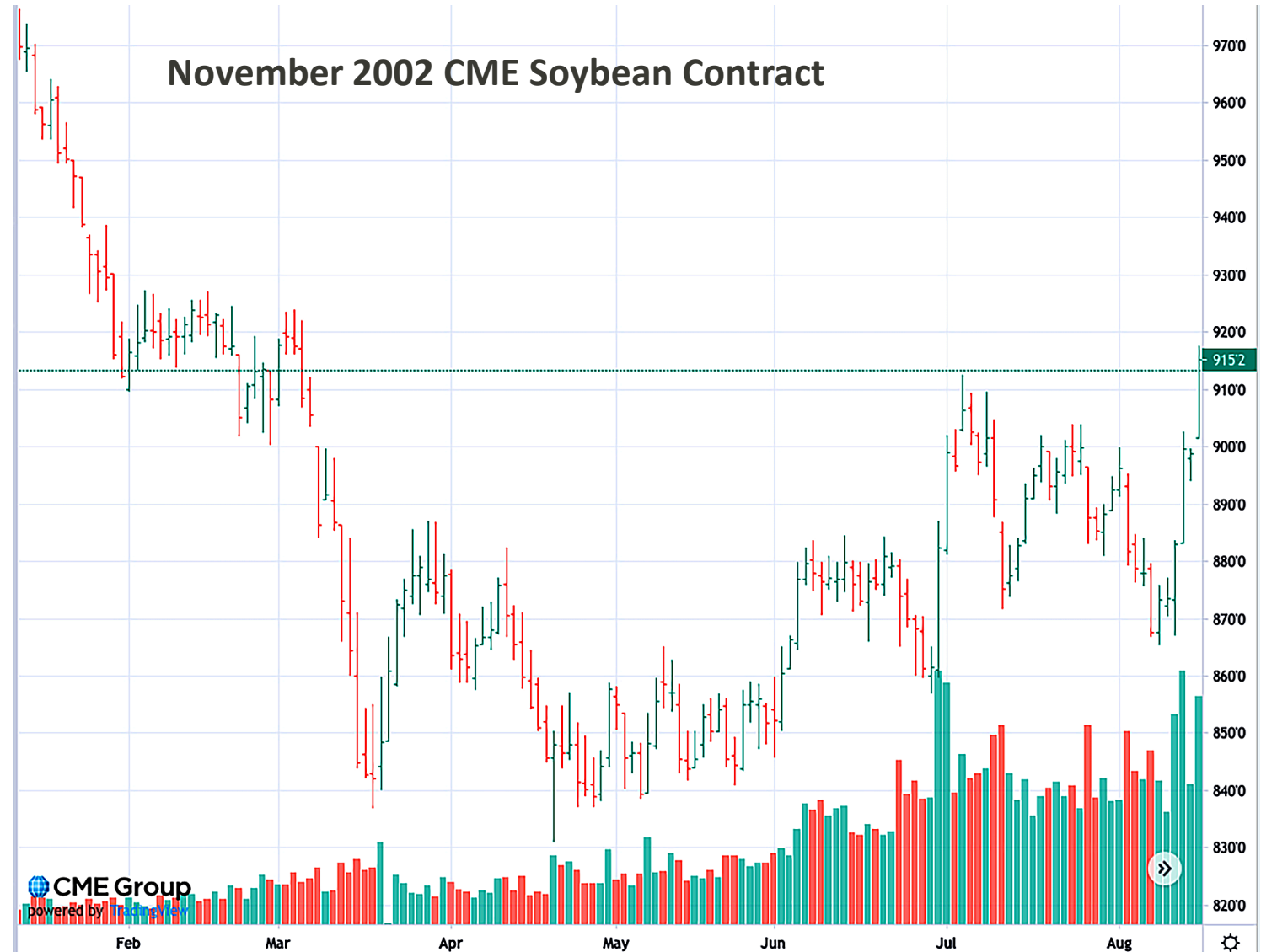
<sup>1</sup> Estimates of Post-COVID scenario made on April 24, 2020.

# Current Disparity on Soybean Prices

Current fall bids in  
Central Illinois

\$3.15 per bushel  
for corn

\$8.90 per bushel  
for soybeans



Maybe a pricing opportunity for 2020 (and 2021) soybean crop

# ARC/PLC: What most of you did by March 15

## Corn

Took PLC, likely the best choice still

## Soybeans

Took ARC-CO (or maybe PLC), still a good choice

## Wheat

Took PLC, best choice

## ARC-IC

Still a good choice, 2019 payments are going up



# 2019 ARC/PLC payments (Receive in Oct 2020)

## PLC Corn

\$3.70 effective reference price

\$3.60 MYA price

Payment rate of \$.10

Payment on farm's PLC yield: 180 bushels per acre

PLC payment = \$14 per base acre

(175 PLC yield x .10 rate x .85 factor x .932 for sequester)

# 2019 ARC/PLC payments (Receive in Oct 2020)

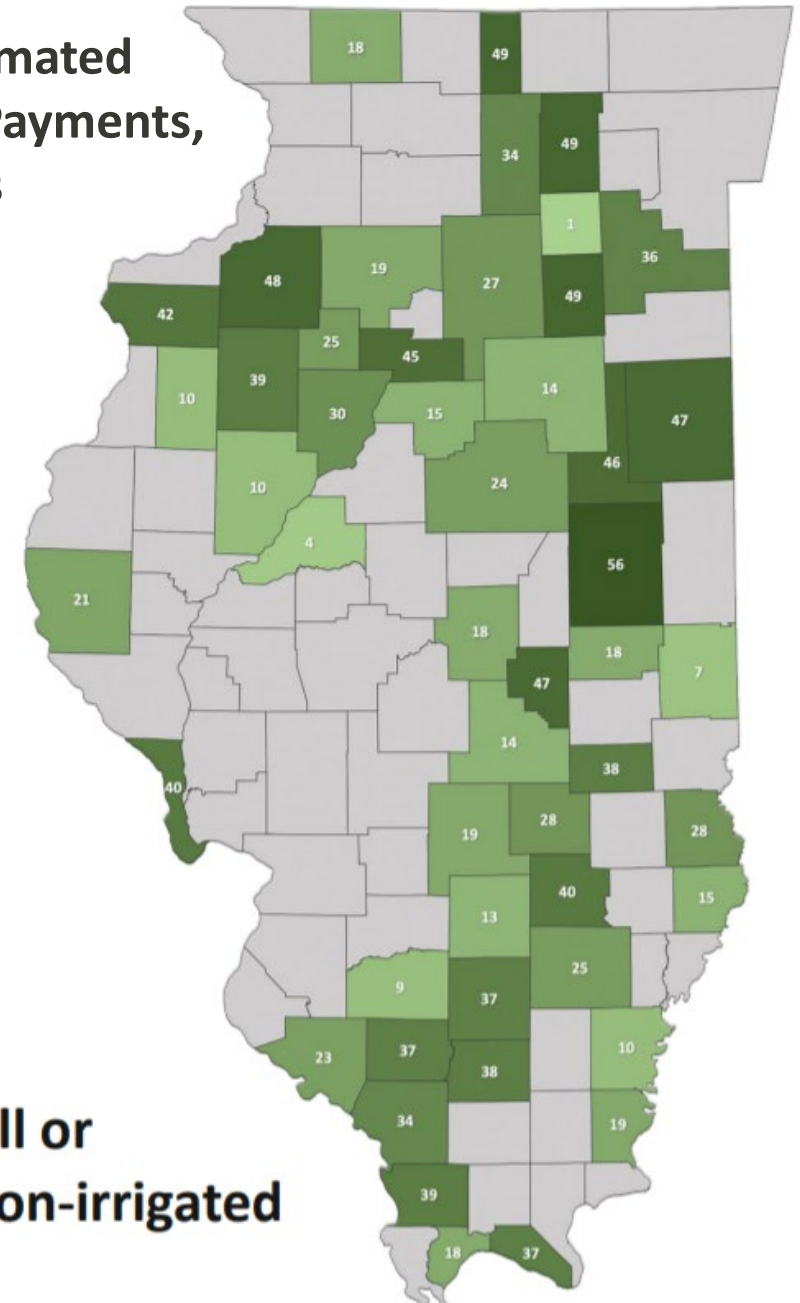
## PLC Soybeans

**\$8.40** effective reference price

**\$8.55** MYA price

Payment rate of \$0 per bushel

2019 Estimated  
ARC-CO Payments,  
Soybeans



# 2020 ARC/PLC payments (Receive in Oct 2021)

	PLC Corn	PLC Soybeans
Effective reference price	\$3.70	\$8.40
MYA price	\$3.10	\$8.35
Payment rate of	\$0.60	\$0.05
Payment on farm's PLC yield bushels per acre	175	50
PLC payment per base acre	\$83	\$2
	175 PLC yield x \$0.60 rate x .85 factor x .932 for sequester	50 PLC yield x \$0.05 rate x .85 factor x .932 for sequester

# 2020 ARC/PLC Payments

Calculated on base acres. We will use the following base as a percent of planted acres

- 53% corn base per planted acre
- 46% soybean base per planted acre
- Note some slippage between planted and base (ARC-IC, some acres in ARC-CO, etc.)

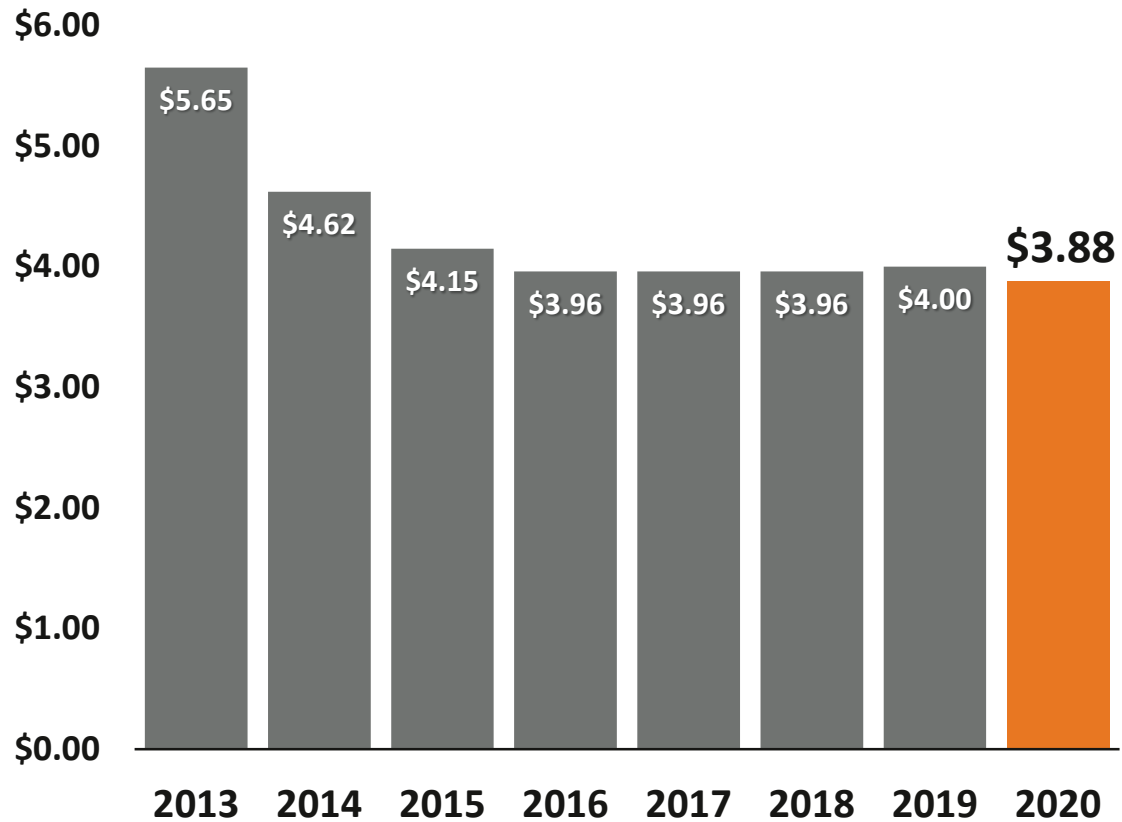
**\$45 per planted acre ( $\$83 \times .53 + \$2 \times .45$ )**



# Crop Insurance, 2020

## Projected Prices, Midwest States

### Corn



### Soybeans



# Crop Insurance Breakeven Given Actual Yield Equals TA-APH Yield

<b>Projected Price \$3.88</b>	
<b>Coverage Level</b>	<b>Break-even Price</b>
<b>85%</b>	<b>\$3.30</b>
<b>80%</b>	<b>\$3.10</b>
<b>75%</b>	<b>\$2.91</b>
<b>70%</b>	<b>\$2.72</b>
<b>65%</b>	<b>\$2.52</b>
<b>60%</b>	<b>\$2.33</b>
<b>55%</b>	<b>\$2.13</b>

<b>Projected Price \$9.17</b>	
<b>Coverage Level</b>	<b>Break-even Price</b>
<b>85%</b>	<b>\$7.88</b>
<b>80%</b>	<b>\$7.42</b>
<b>75%</b>	<b>\$6.95</b>
<b>70%</b>	<b>\$6.49</b>
<b>65%</b>	<b>\$6.03</b>
<b>60%</b>	<b>\$5.56</b>
<b>55%</b>	<b>\$5.10</b>

**No payments because most farms have above average yields**

# Coronavirus Food Assistance Program

## September 11 is deadline

Paid on livestock and many grain farms

**For grain**, paid on lower of

- 1) 50% of 2019 production
- 2) Unpriced grain in inventory on January 15, 2020

Rates are

\$.335 per bushel for corn

\$.475 per bushel for soybeans

Payments were broken into two payments

1. 80% of total
2. 20% of total. Second payment now being made

# Central Illinois Example

## CORN

$$\text{\$31} = 208 \text{ yield in 2019} \times 45\% \text{ in inventory on Jan 15} \times \text{\$.335 per bushel}$$

## SOYBEANS

$$\text{\$14} = 64 \text{ yield in 2019} \times 45\% \text{ in inventory on Jan 15} \times \text{\$.475 per bushel}$$



# Poll: Do you expect more Federal aid on 2020 crop?

- No
- Between \$0 and \$25 per acre
- Between \$25 and \$50 per acre
- Between \$50 and \$75 per acre
- Over \$75 per acre

# Other Federal Aid

- WHIP+
- Paycheck Protection Program – PPP
- Economic Injury Disaster Loans – EIDL
- Additional CFAP/MFP on 2020 crop

# Corn and Soybeans, Central Illinois, High-Productivity

	Corn			Soybeans		
	2018	2019	2020P	2018	2019	2020P
Yield per acre	237	208	233	75	64	73
Price per bu	\$3.60	\$3.65	\$3.20	\$9.36	\$8.60	\$8.45
Crop revenue	853	759	746	702	550	617
ARC/PLC	0	15	45	0	15	45
MFP	1	82	0	122	82	0
CFAP		31	50	0	14	50
Crop insurance	2	14	2	2	10	2
<b>Gross revenue</b>	<b>856</b>	<b>901</b>	<b>843</b>	<b>826</b>	<b>671</b>	<b>714</b>
Total non-land costs	574	606	571	353	372	359
<b>Operator and land return</b>	<b>282</b>	<b>295</b>	<b>272</b>	<b>473</b>	<b>299</b>	<b>355</b>
Cash rent	274	275	275	274	275	275
<b>Farmer return</b>	<b>8</b>	<b>20</b>	<b>-3</b>	<b>199</b>	<b>24</b>	<b>80</b>
<b>50% Corn and 50% Soybean Rotation</b>						
<b>Farmer return</b>	<b>104</b>	<b>22</b>	<b>39</b>	<i>(with ad hoc Federal payments)</i>		
	<b>42</b>	<b>-83</b>	<b>-12</b>	<i>(without ad hoc Federal payments)</i>		

- 2020 yields are near 2018 record yields
- Built into budgets is \$50 for CFAP in 2020. Those are in addition to those whose sign up is going on now. **Those are not for certain.**
- **Yellowed items are ad hoc disaster assistance payments**

**For central Illinois, high-productivity farmland, the 2021 trend yield for corn is 217, the 2020 actual yield likely near 233 bpa. What should be the yield used in budgeting for 2021?**

- Less than 217 bpa
- 217 bpa
- Something between 217 and 233 bpa
- 233 bpa
- Over 233 bpa



# What level of ad hoc Federal aid (CFAP and MFP) should be used in 2021 budgeting

- \$0 per acre
- \$0 and \$25 per acre
- \$25 to \$50 per acre
- \$50 to \$75 per acre
- Over \$75 per acre

# Two 2021 Budgets

## Baseline

- Trend yields (217 bpa corn, 68 bpa soybeans)
- No ad hoc disaster assistance

## Optimistic

- Above trend yields (and no lowering of price)
- \$50 ad hoc Federal disaster assistance

# Corn and Soybeans

## Central Illinois, High-Productivity

### Baseline

	Corn				Soybeans			
	2018	2019	2020P	2021P	2018	2019	2020P	2021P
Yield per acre	237	208	233	217	75	64	73	68
Price per bu	\$3.60	\$3.65	\$3.20	\$3.40	\$9.36	\$8.60	\$8.45	\$8.60
Crop revenue	853	759	746	738	702	550	617	585
ARC/PLC	0	15	45	32	0	15	45	32
MFP	1	82	0	0	122	82	0	0
CFAP		31	50	0	0	14	50	0
Crop insurance	2	14	2	0	2	10	2	0
<b>Gross revenue</b>	<b>856</b>	<b>901</b>	<b>843</b>	<b>770</b>	<b>826</b>	<b>671</b>	<b>714</b>	<b>617</b>
<b>Total non-land costs</b>	<b>574</b>	<b>606</b>	<b>571</b>	<b>568</b>	<b>353</b>	<b>372</b>	<b>359</b>	<b>360</b>
<b>Operator and land return</b>	<b>282</b>	<b>295</b>	<b>272</b>	<b>202</b>	<b>473</b>	<b>299</b>	<b>355</b>	<b>257</b>
Cash rent	274	275	275	275	274	275	275	275
<b>Farmer return</b>	<b>8</b>	<b>20</b>	<b>-3</b>	<b>-73</b>	<b>199</b>	<b>24</b>	<b>80</b>	<b>-18</b>
<b>50% Corn and 50% Soybean Rotation</b>								
<b>Farmer return</b>	<b>104</b>	<b>22</b>	<b>39</b>	<b>-46</b>	<b>(with <i>ad hoc</i> Federal payments)</b>			
	<b>42</b>	<b>-83</b>	<b>-12</b>	<b>-46</b>	<b>(without <i>ad hoc</i> Federal payments)</b>			

# Corn and Soybeans

## Central Illinois, High-Productivity

### Optimistic

	Corn				Soybeans			
	2018	2019	2020P	2021P	2018	2019	2020P	2021P
Yield per acre	237	208	233	233	75	64	73	73
Price per bu	\$3.60	\$3.65	\$3.20	\$3.40	\$9.36	\$8.60	\$8.45	\$8.60
Crop revenue	853	759	746	792	702	550	617	628
ARC/PLC	0	15	45	32	0	15	45	32
MFP	1	82	0	0	122	82	0	0
CFAP		31	50	50	0	14	50	50
Crop insurance	2	14	2	0	2	10	2	0
<b>Gross revenue</b>	<b>856</b>	<b>901</b>	<b>843</b>	<b>874</b>	<b>826</b>	<b>671</b>	<b>714</b>	<b>710</b>
<b>Total non-land costs</b>	<b>574</b>	<b>606</b>	<b>571</b>	<b>568</b>	<b>353</b>	<b>372</b>	<b>359</b>	<b>360</b>
<b>Operator and land return</b>	<b>282</b>	<b>295</b>	<b>272</b>	<b>306</b>	<b>473</b>	<b>299</b>	<b>355</b>	<b>350</b>
Cash rent	274	275	275	275	274	275	275	275
<b>Farmer return</b>	<b>8</b>	<b>20</b>	<b>-3</b>	<b>31</b>	<b>199</b>	<b>24</b>	<b>80</b>	<b>75</b>
<b>50% Corn and 50% Soybean Rotation</b>								
<b>Farmer return</b>	<b>104</b>	<b>22</b>	<b>39</b>	<b>53</b>	<b>(with <i>ad hoc</i> Federal payments)</b>			
	<b>42</b>	<b>-83</b>	<b>-12</b>	<b>3</b>	<b>(without <i>ad hoc</i> Federal payments)</b>			



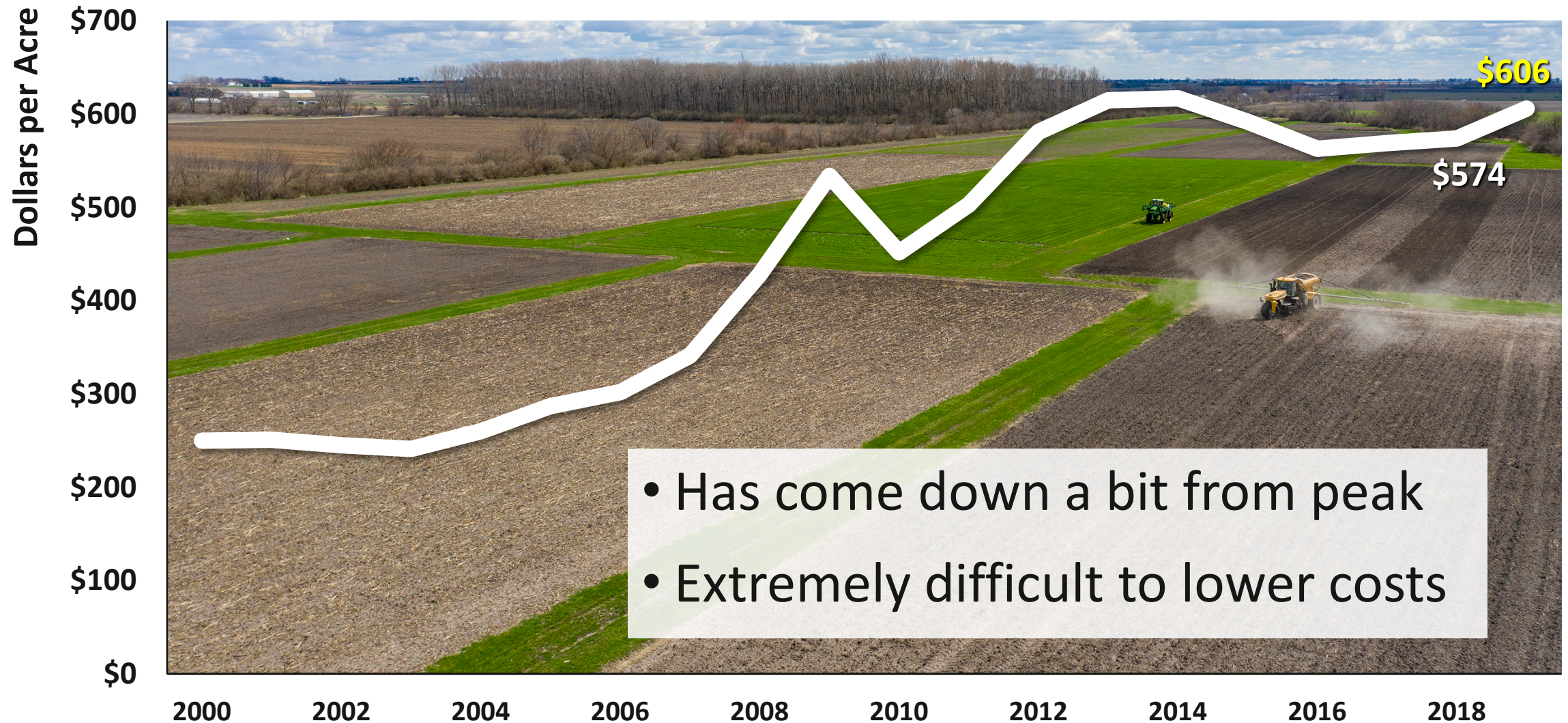
# Cost Cutting

- Non-land costs
  - Fertilizers
- Cash rents



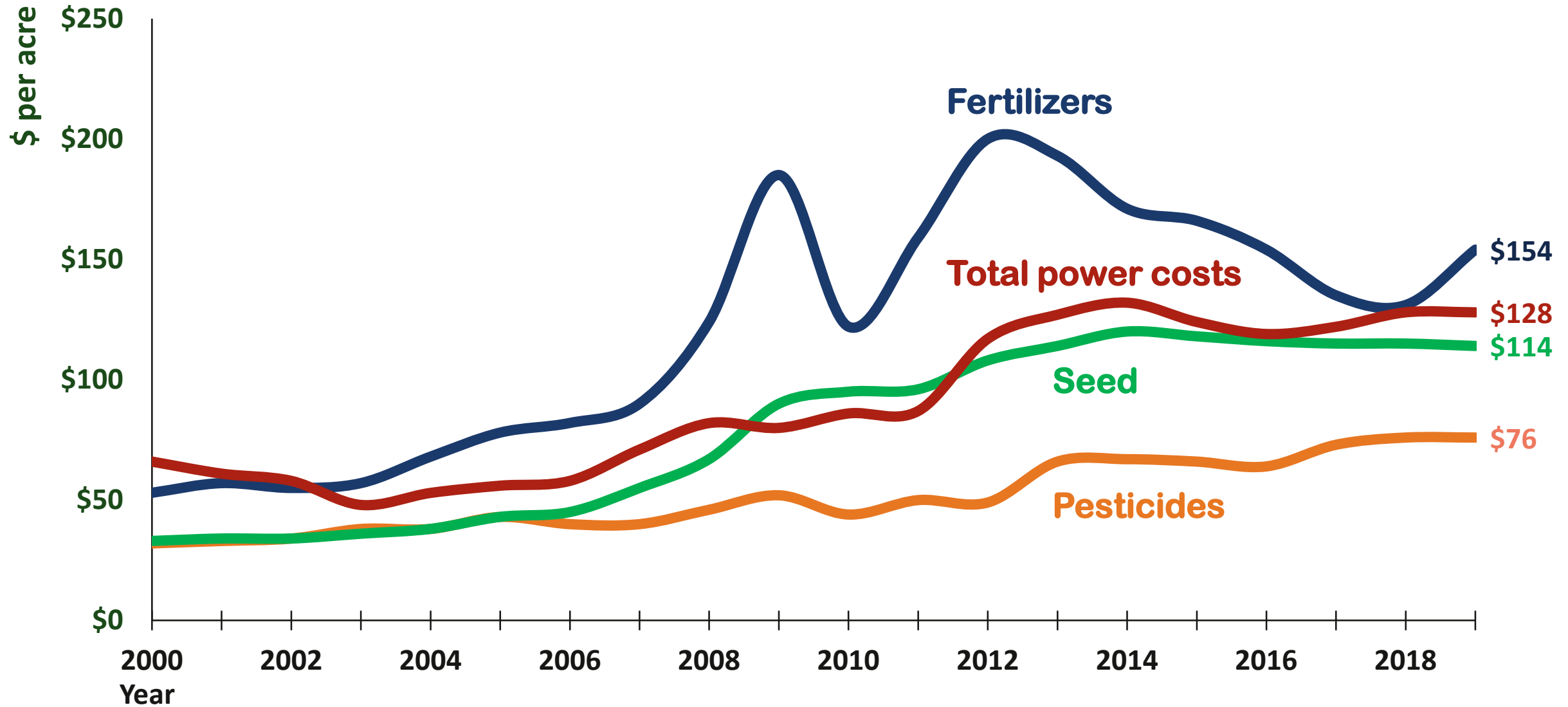


# Non-land Costs, High-Productivity Farmland



- Has come down a bit from peak
- Extremely difficult to lower costs

# Components of Cost





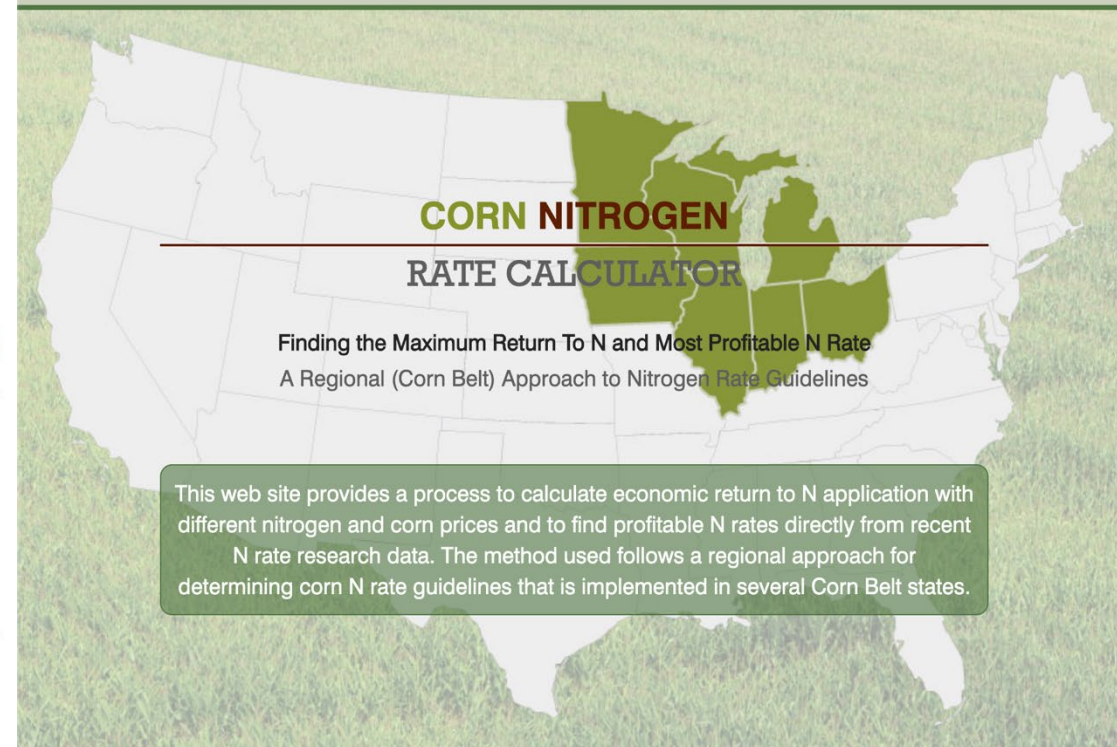
# Nitrogen Recommendations

**Table 1. Maximum Return to Nitrogen (MRTN) Rates in Pounds of N Applied, 2019<sup>1,2</sup>**

Region of Illinois	Corn-following-soybeans		Corn-following-corn	
	Anhydrous Ammonia	Nitrogen Solution	Anhydrous Ammonia	Nitrogen Solution
	28%	28%		
	lbs./acre	lbs/acre	lbs/acre	lbs/acre
North	157	144	200	186
Central	174	163	200	188
South	180	166	193	180

<sup>1</sup> Taken from the *Corn Nitrogen Rate Calculator* (<http://cnrc.agron.iastate.edu/>) on March 18, 2019.

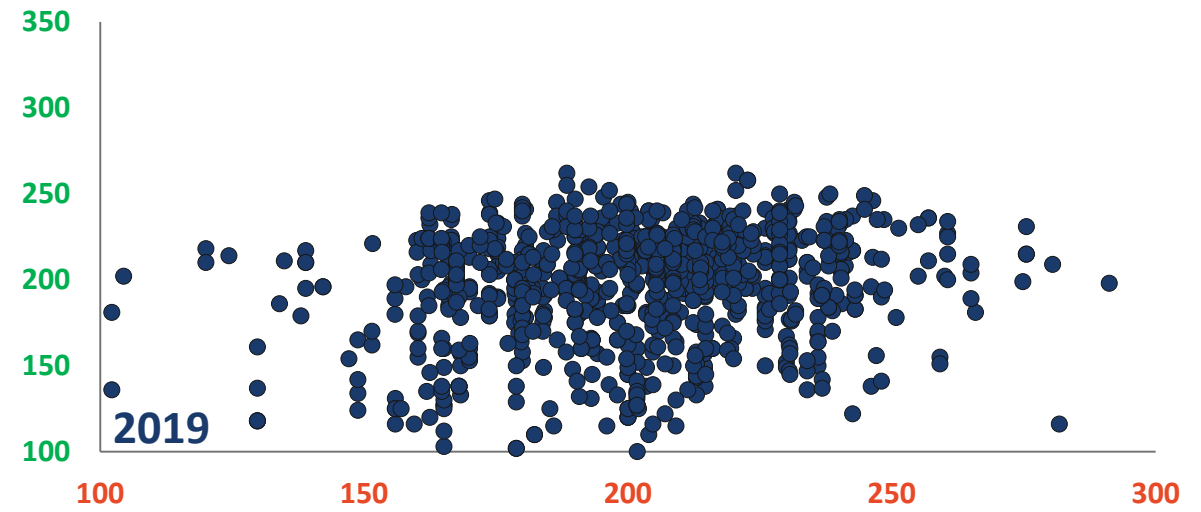
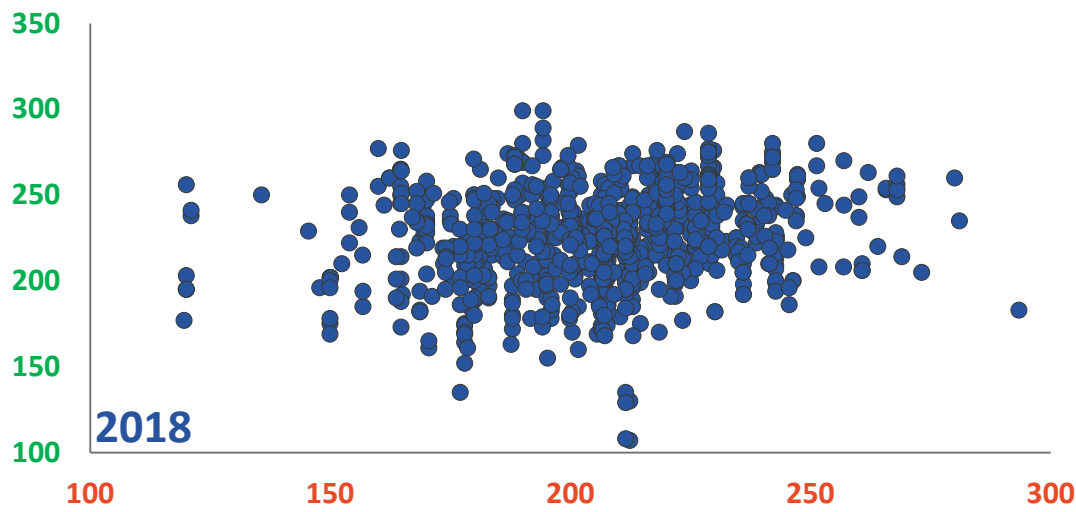
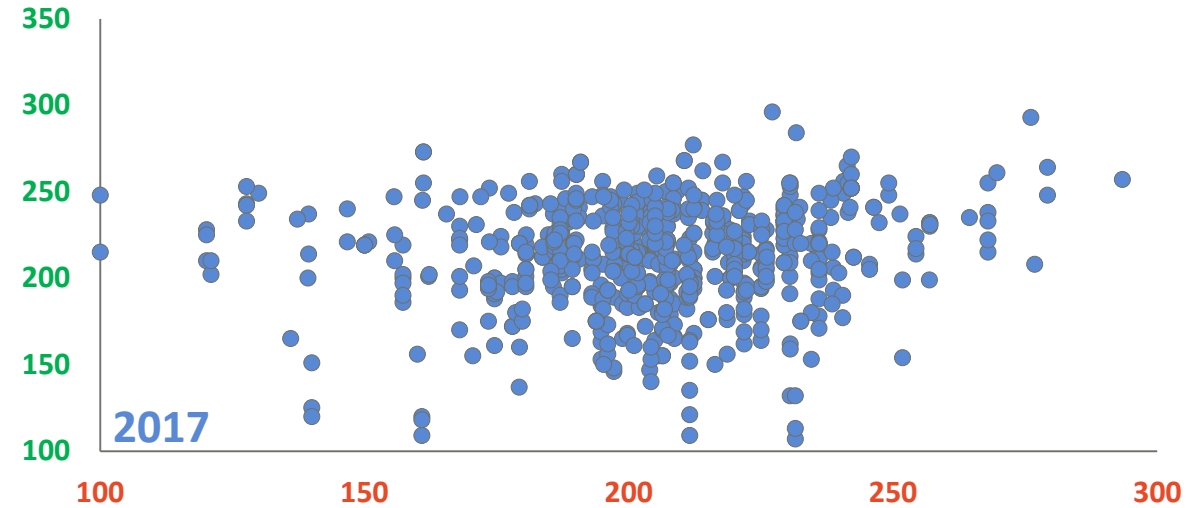
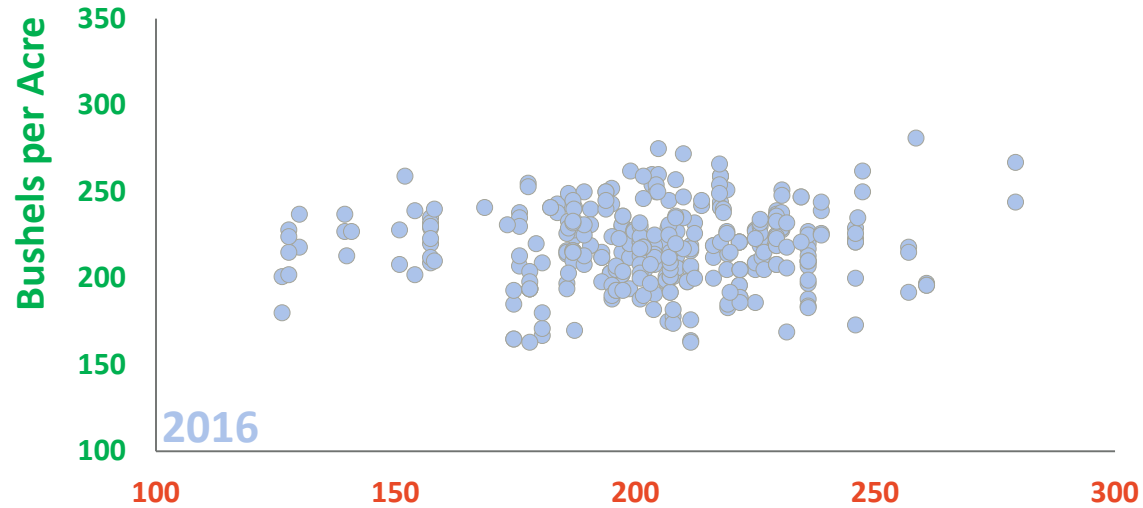
<sup>2</sup> MRTNs determined with a \$3.70 corn price, \$615 anhydrous ammonia price, and a \$280 nitrogen solution price.



In association with these Universities



# Nitrogen Applications and Yields, PCM, By Year



Nitrogen Application (Actual Pounds of N)

# Phosphorus and Potassium Replacement Rates were lowered?

	Corn	Soybeans
$P_2O_5$	0.37 lb/bu	0.75 lb/bu
$K_2O$	0.24 lb/bu	1.17 lb/bu
Percentage Lower*	15	10 – 12%

\*than what has been the standard in the Agronomy Handbook

**\$4 to \$10 per acre savings**



# How will cash rents change from 2020 to 2021?

- Down over \$20 per acre
- Down between \$10 and \$20 per acre
- Down between \$0 and \$10 per acre
- Stay the same
- Increase

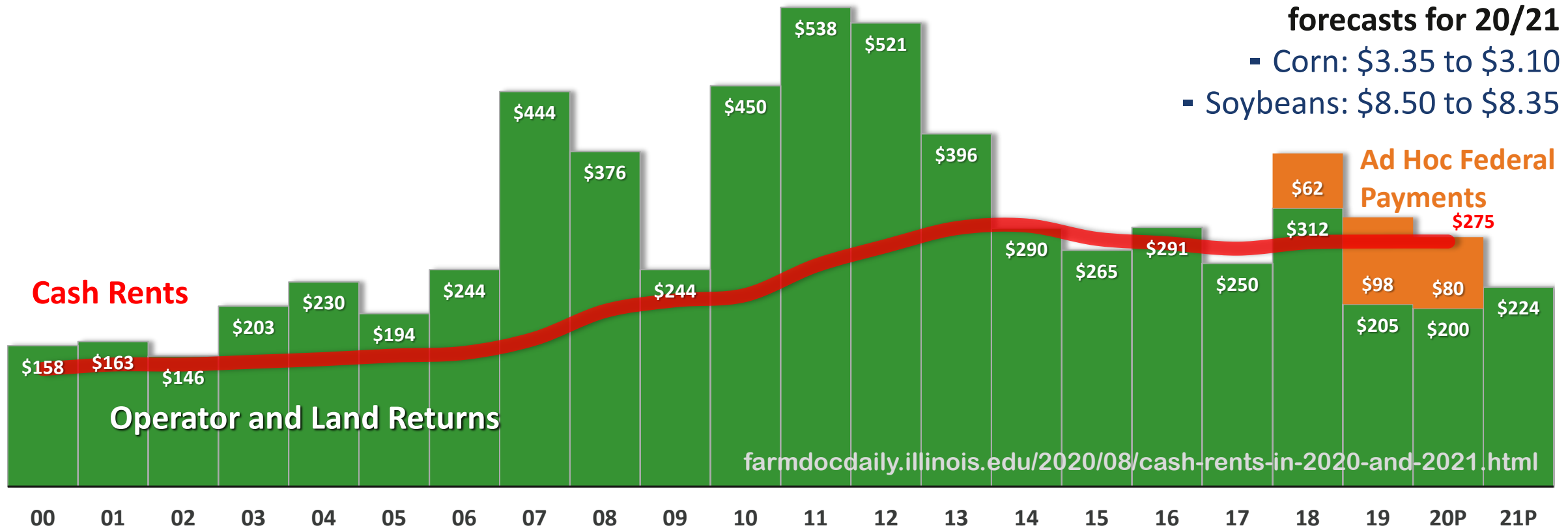
# Operator and Land Returns and Cash Rents, High-Productivity Farmland in Central Illinois, 2000 to 2021P.

Ad hoc payments helped to achieve break-even returns in 2019 and 2020\*\*\*

Flat rents and other costs

July vs. August USDA MYA price forecasts for 20/21

- Corn: \$3.35 to \$3.10
- Soybeans: \$8.50 to \$8.35



[farmdocdaily.illinois.edu/2020/08/cash-rents-in-2020-and-2021.html](http://farmdocdaily.illinois.edu/2020/08/cash-rents-in-2020-and-2021.html)

# Summary

- MFPs and CFAPs have **greatly aided** farm income since 2018
- Positive 2021 income likely requires:
  - Above trend yields
  - Federal payments from *ad hoc* programs (MFP and CFAP)
- Evaluate nitrogen, phosphorus and, potassium applications
- Be careful with cash rents

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# Questions?

Please continue to submit questions during this part of the webinar



Dale Lattz

Gary Schnitkey

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