



Illinois Farm Economic Summit 2021

Supply Bottlenecks and Management Decisions



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farmdoc

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Topics

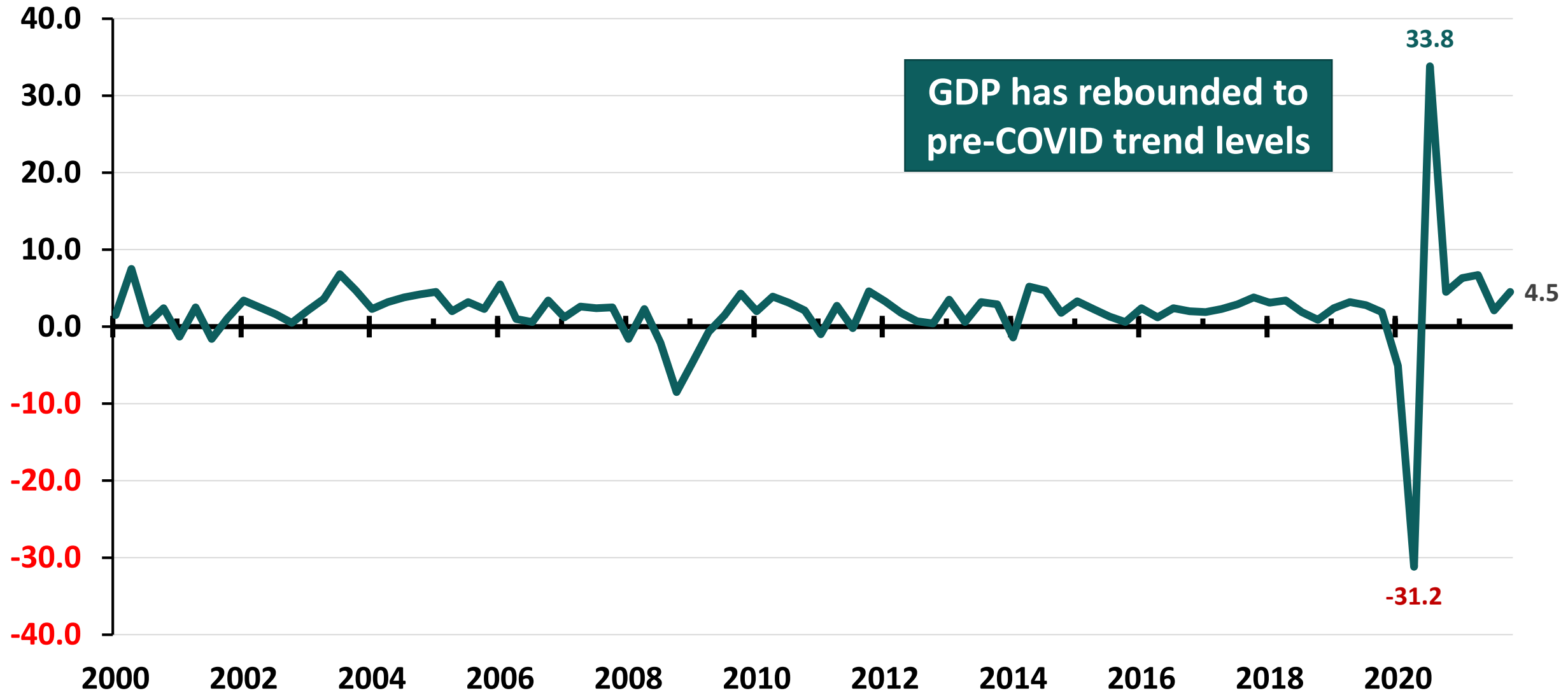
- General economic outlook
- Agricultural background
- Impacts on farm inputs
 - Pesticides
 - Machinery
 - Fertilizer



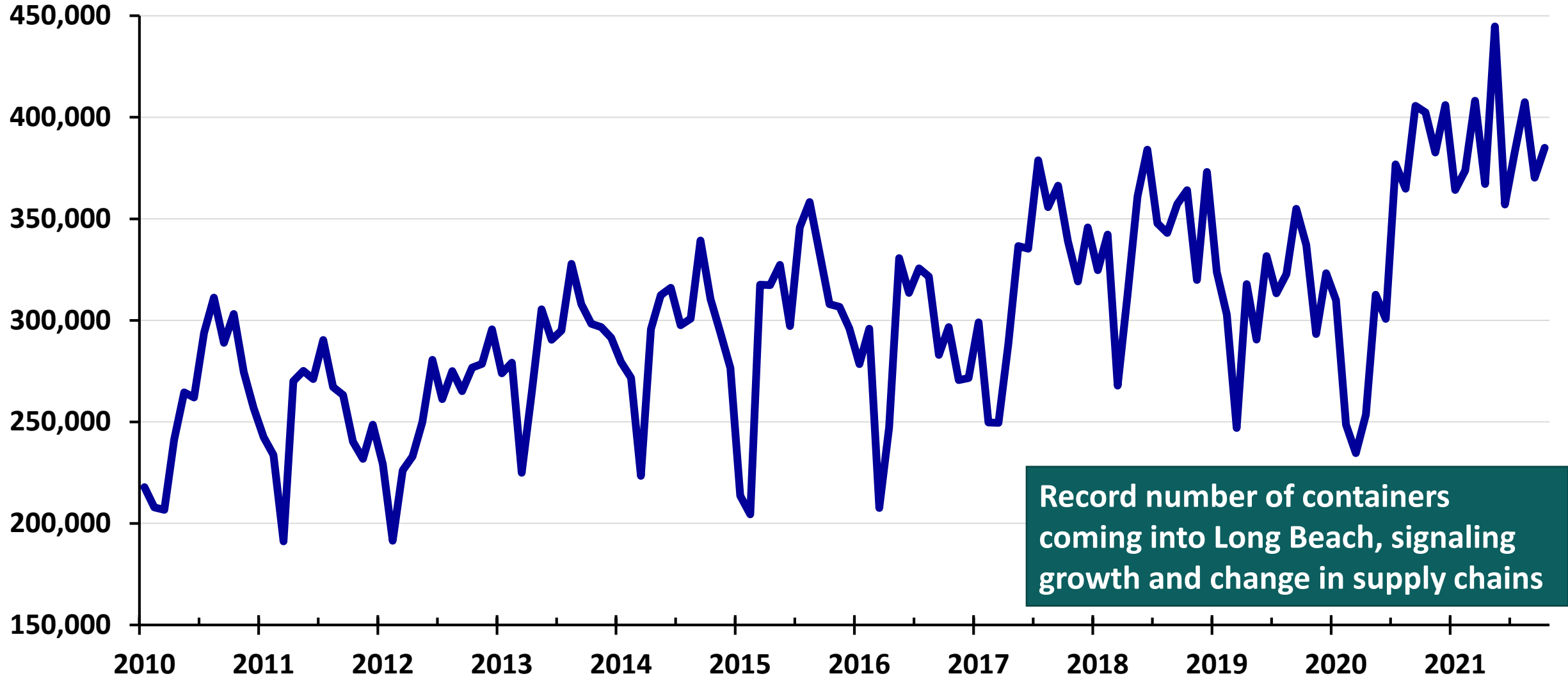
Are you optimistic about growth in the U.S. in 2022?

- There will be a major recession
- Declining growth
- About normal
- Above normal growth
- Picking up of growth

Gross Domestic Product (GDP) Growth Rates

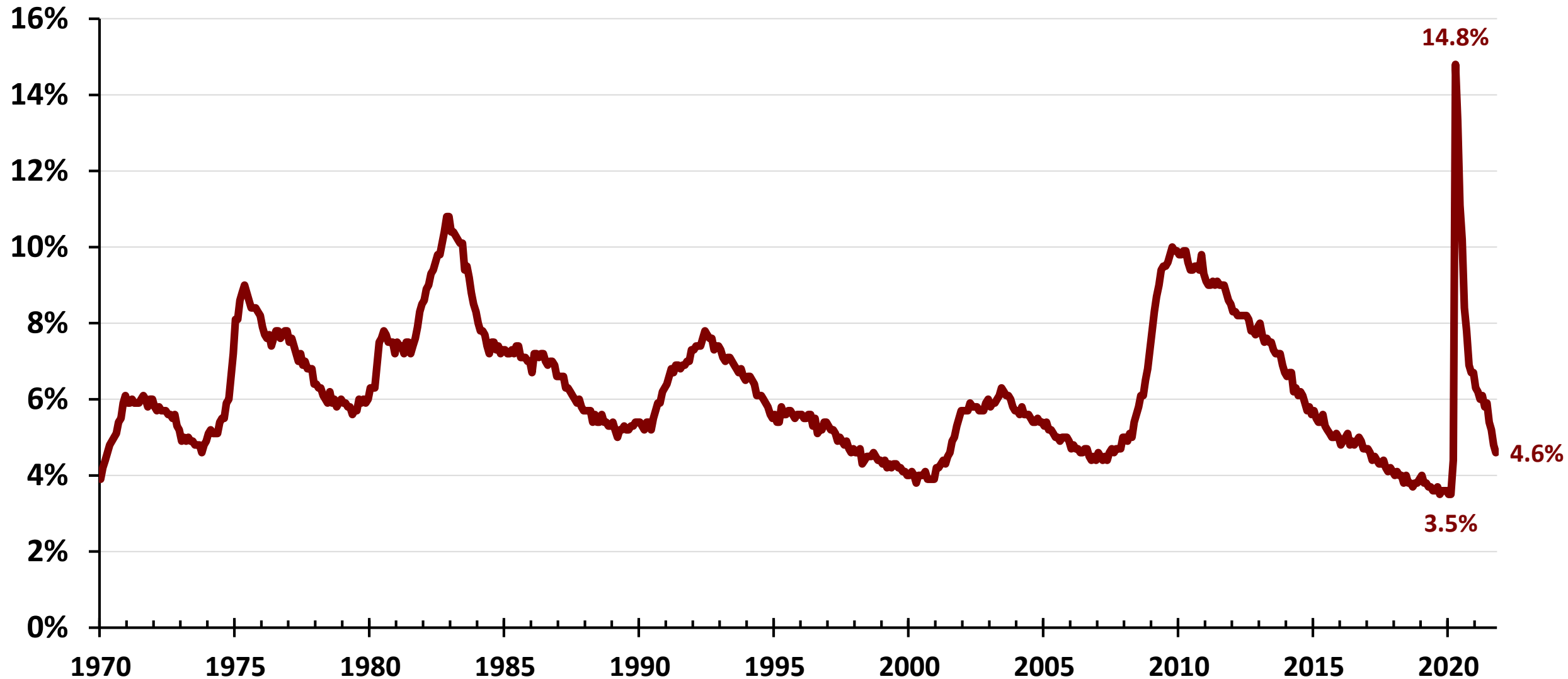


Inboard Containers at Port of Long Beach



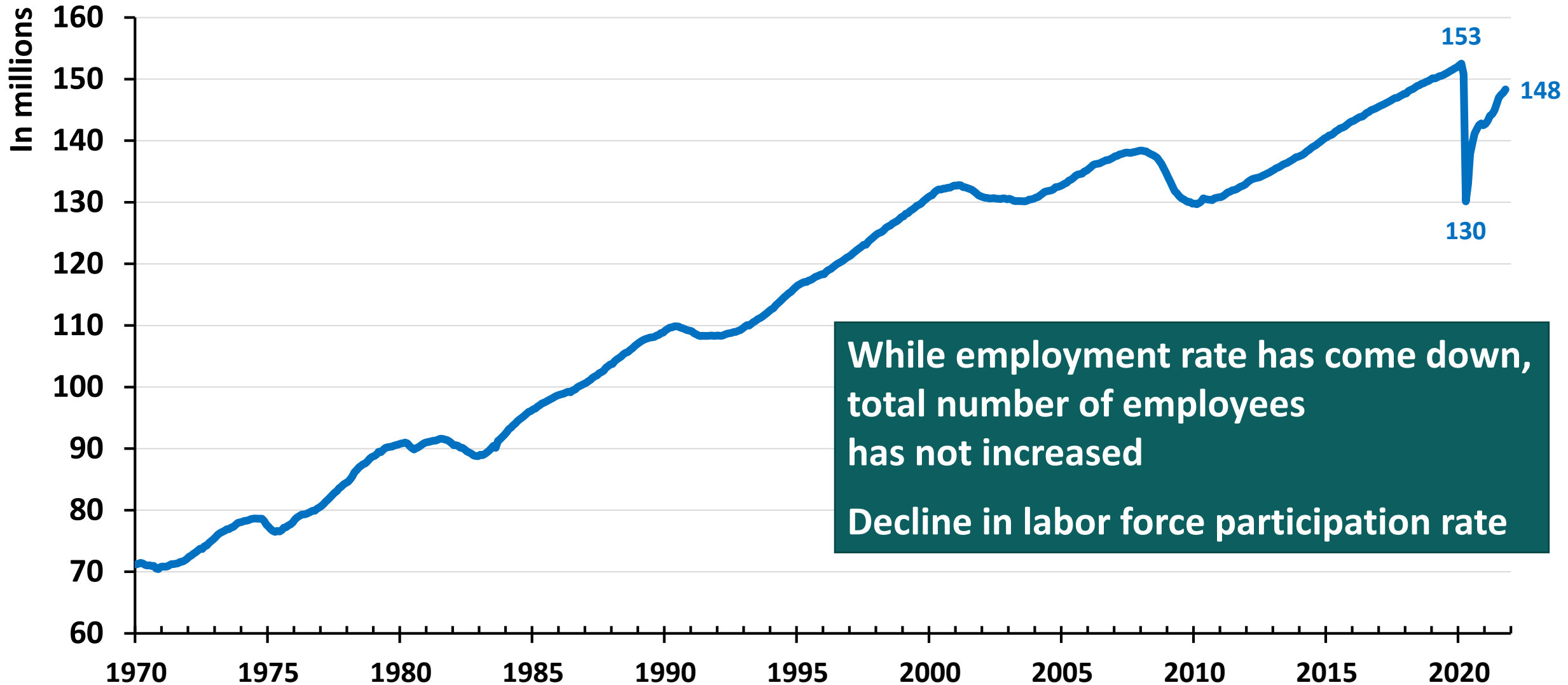
Record number of containers coming into Long Beach, signaling growth and change in supply chains

Unemployment rate, US.



Source: St. Louis Federal Reserve Bank

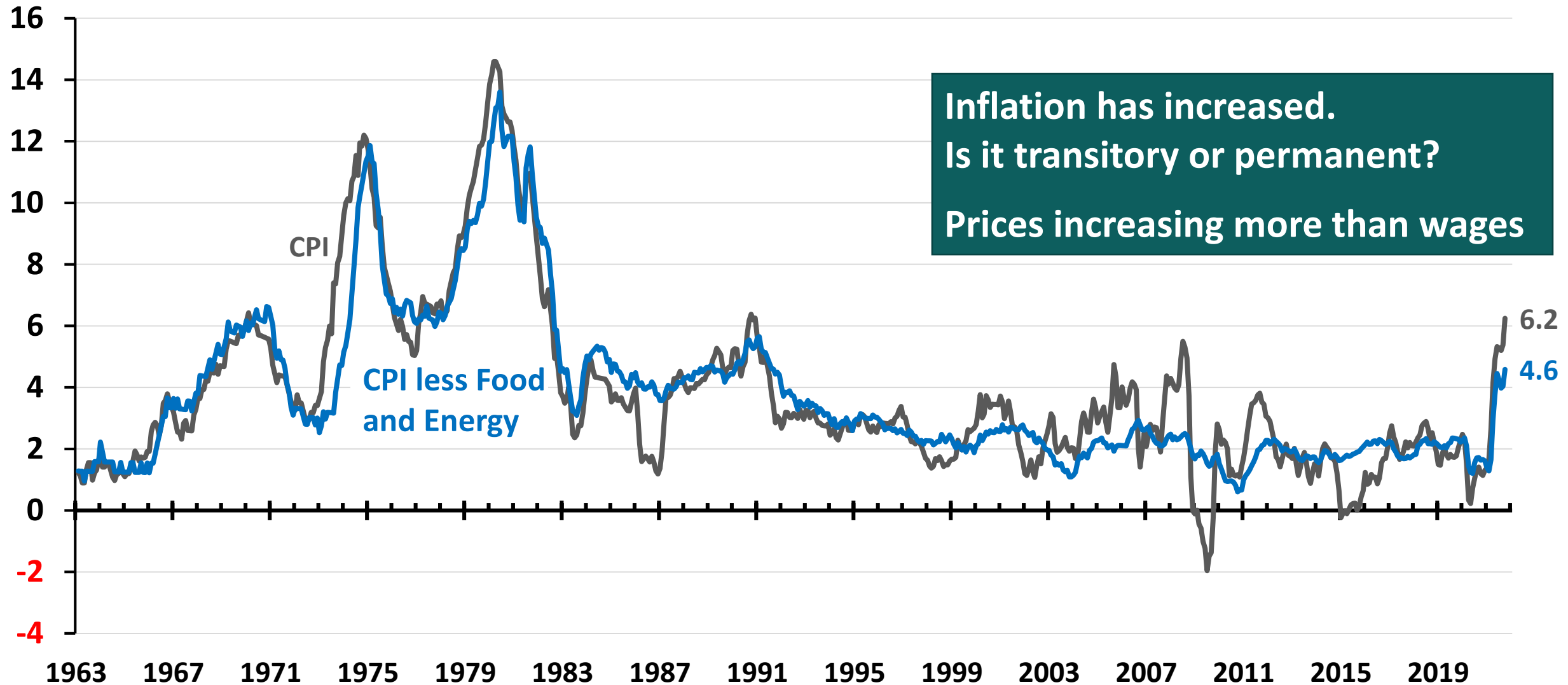
Total Non-farm Employees in the U.S.



**While employment rate has come down,
total number of employees
has not increased**

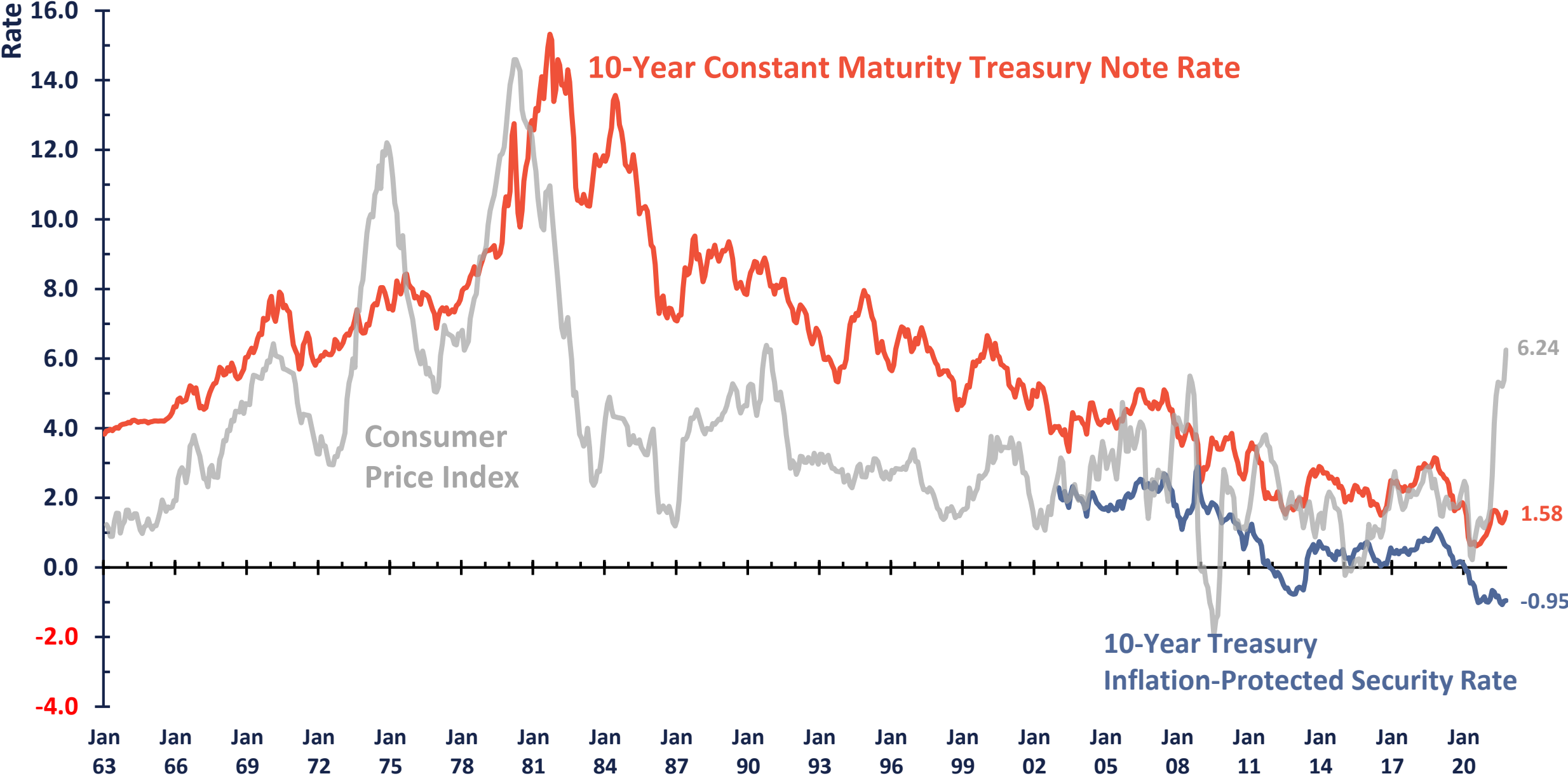
Decline in labor force participation rate

Consumer Price Index (CPI)

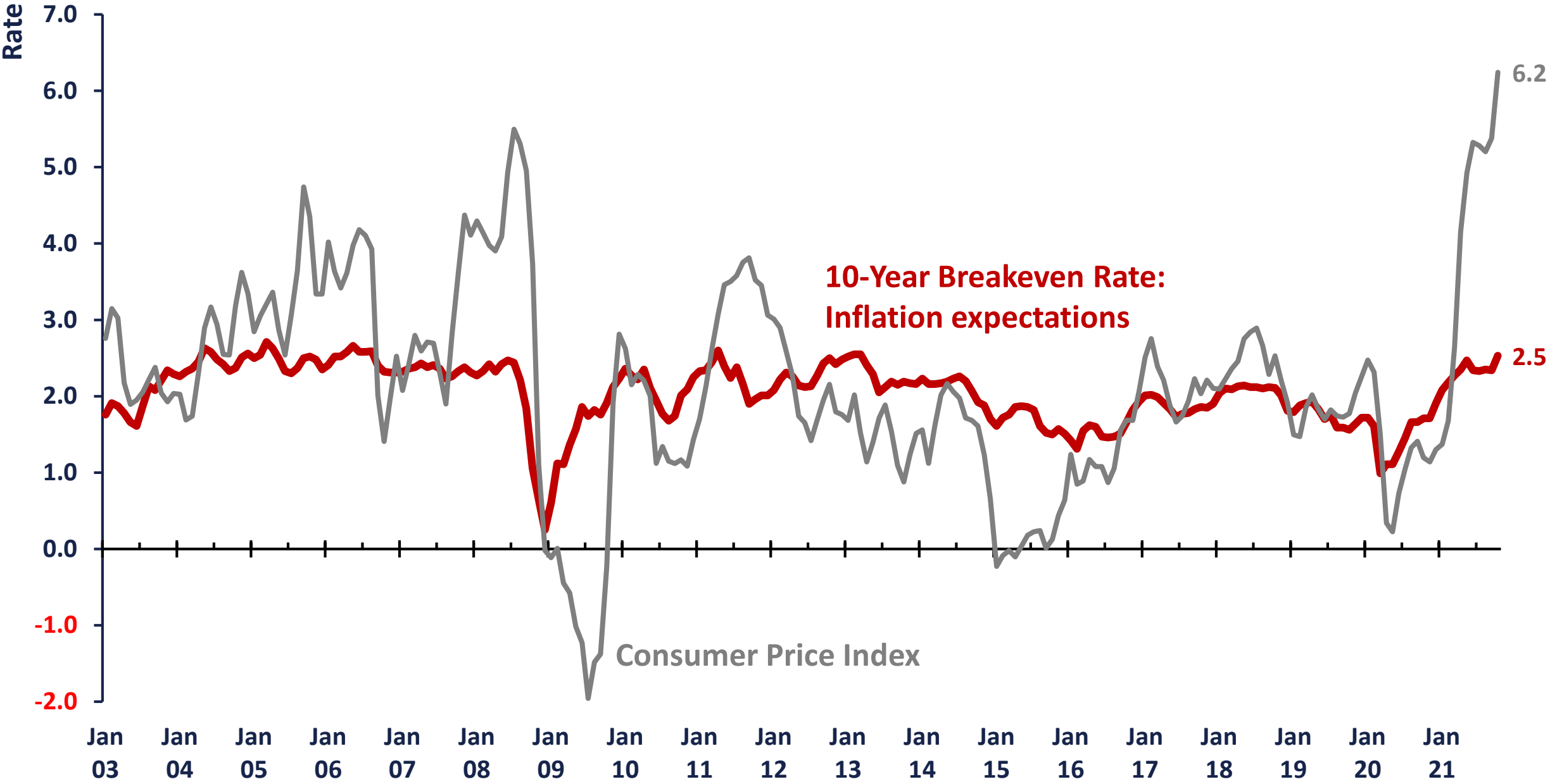


**Inflation has increased.
Is it transitory or permanent?
Prices increasing more than wages**

10-Year Treasury Rates and Consumer Price Index, 1973 to 2021



10-Year Breakeven Inflation Rate and Consumer Price Index



Transitory versus Non-transitory Inflation

Striking Deere workers approve a new contract on the third try.



Members of the United Auto Workers on strike last month outside a John Deere plant in Ankeny, Iowa. Charlie Neibergall/Associated Press

New Deere contract has:

- Increase in wages
- A cost-of-living increase provision was included in the contract

Labor is short. That will not change soon

Economic backdrop

- Economic growth is occurring
- Labor force has not returned to pre-Covid level, likely will not
- Supply chain bottlenecks are occurring
- Inflation has increased, question about whether it is transitory or permanent
- Inflation will have impact on interest rate, likely “real”

Agricultural Background

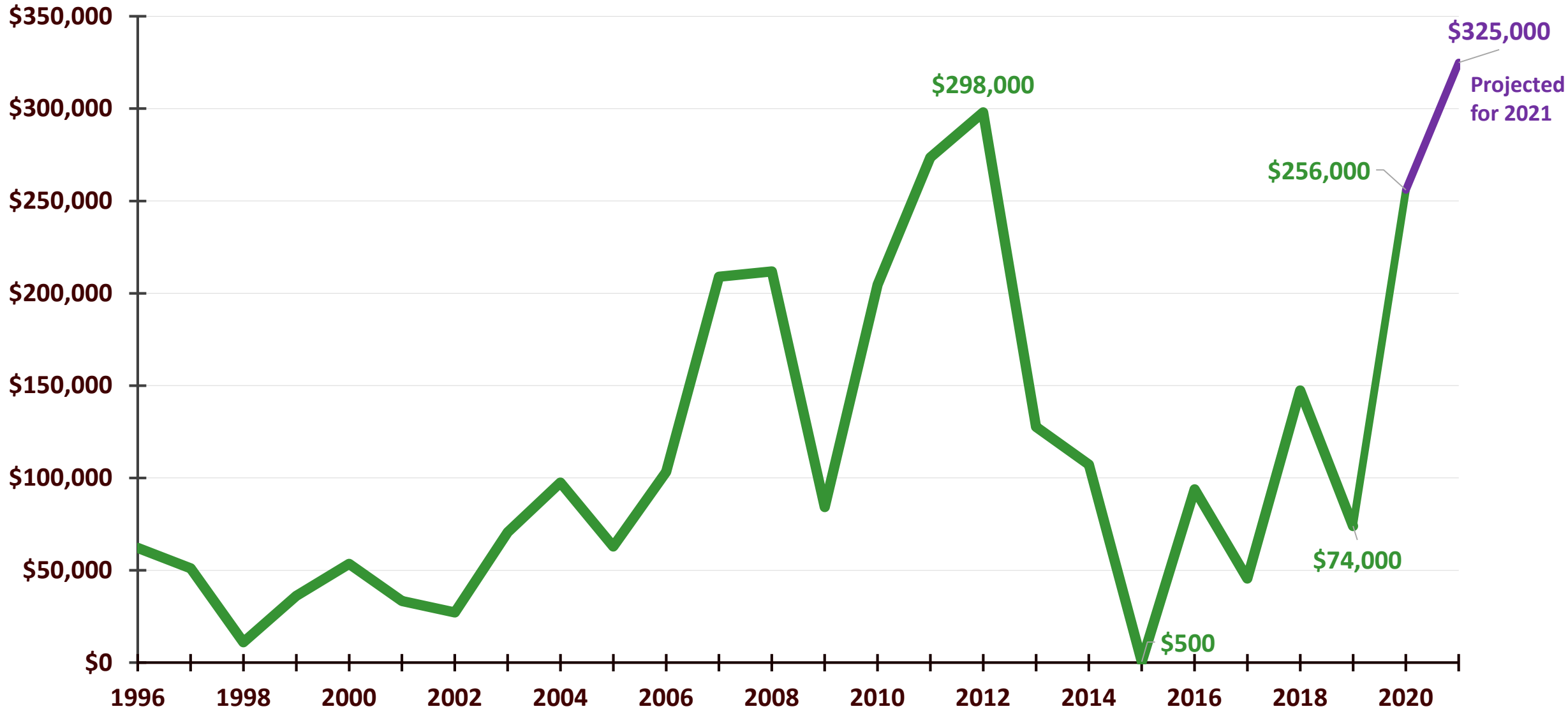


Is your firm looking for employees?

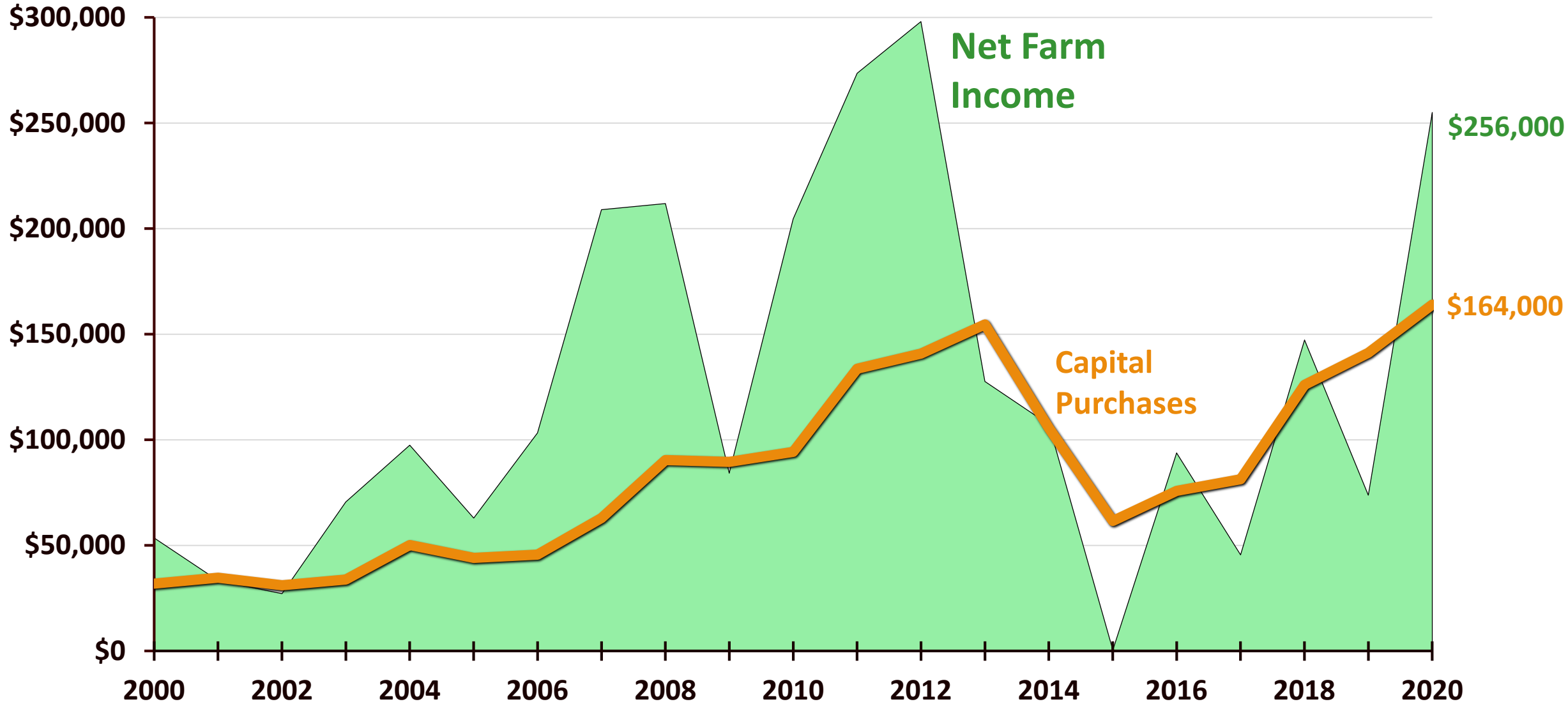
- Yes, desperately understaffed
- Yes, but not desperate
- No, fully staffed
- Self employed and no workers



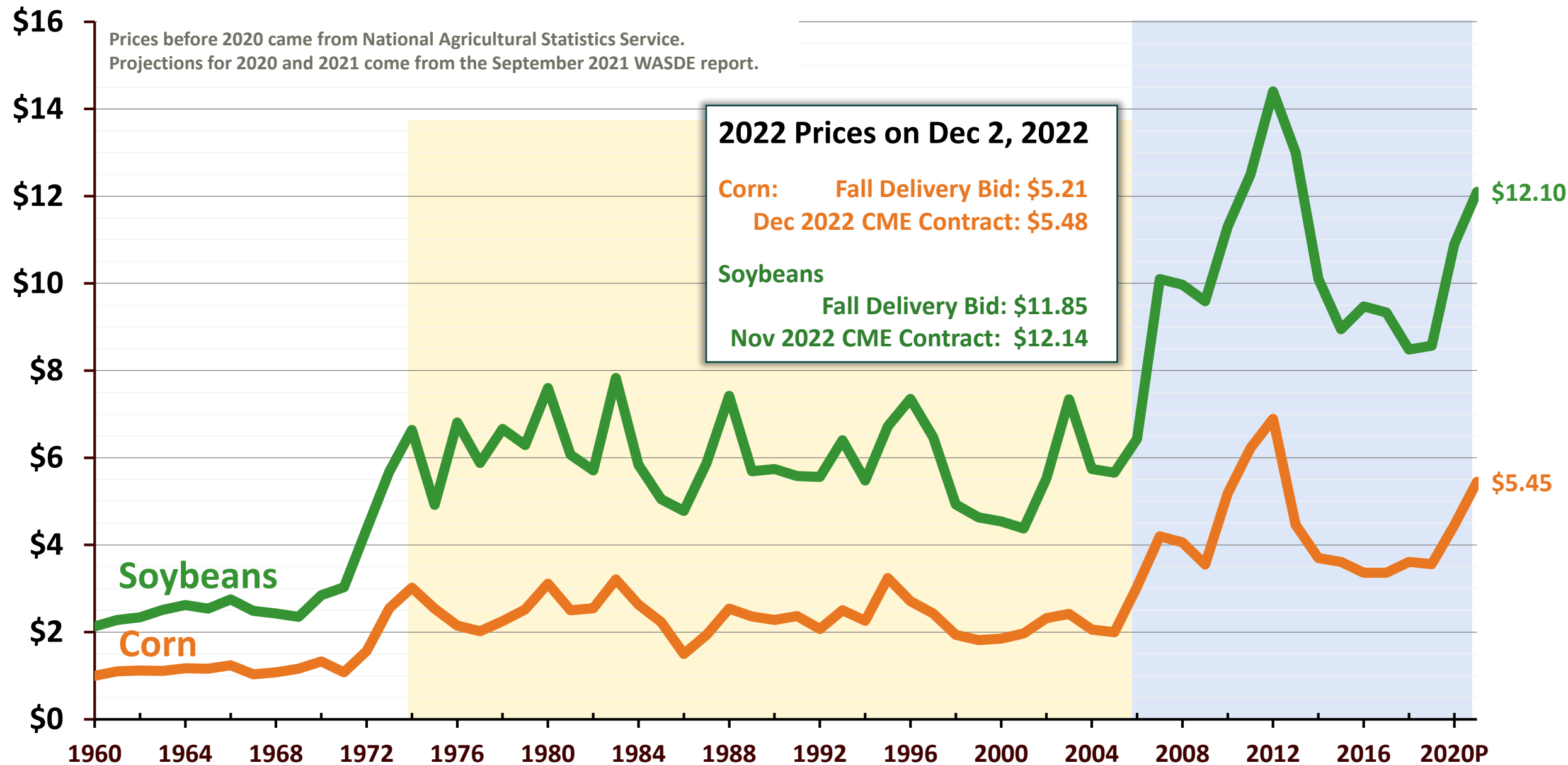
Average Net Incomes of Grain Farms Enrolled in Illinois Farm Business Farm Management (FBFM), 1996 to 2021P



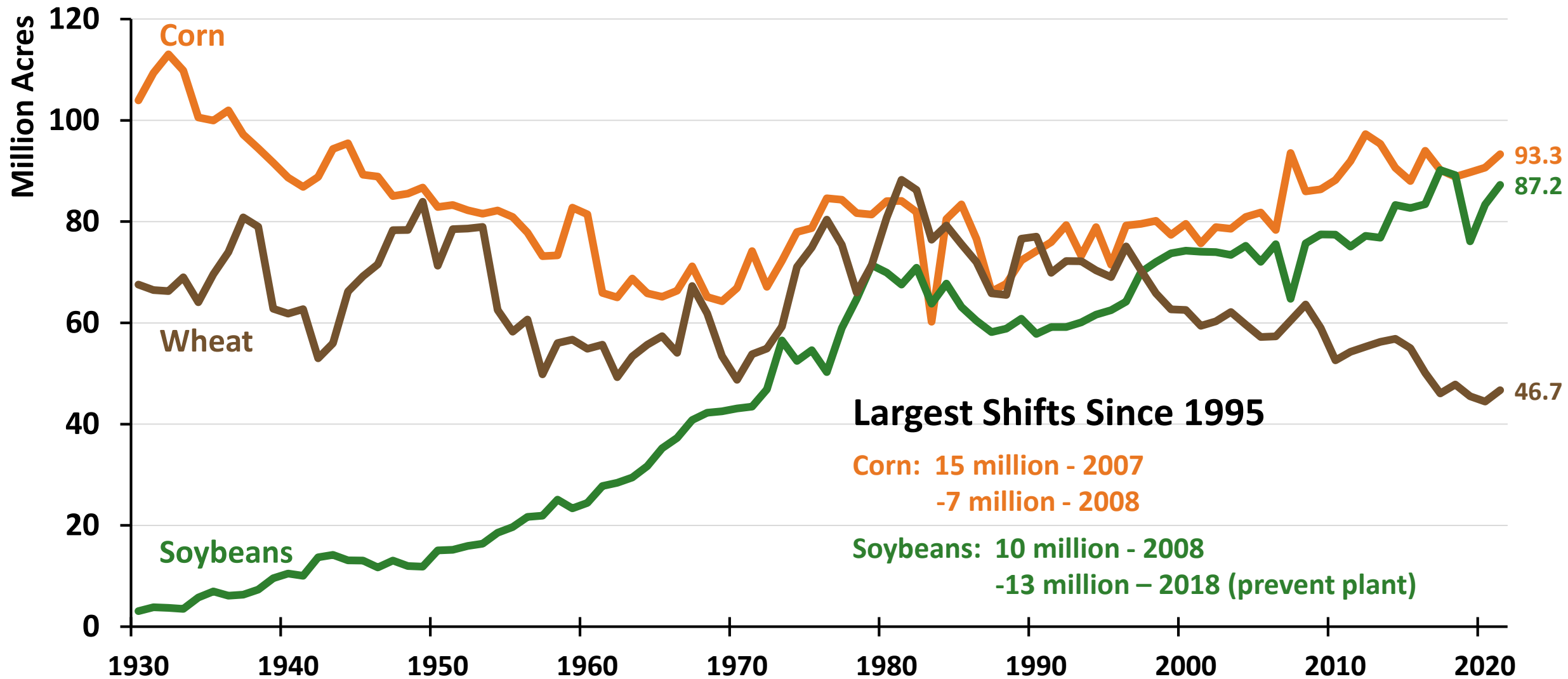
Grain Farms Enrolled in Illinois FBFM



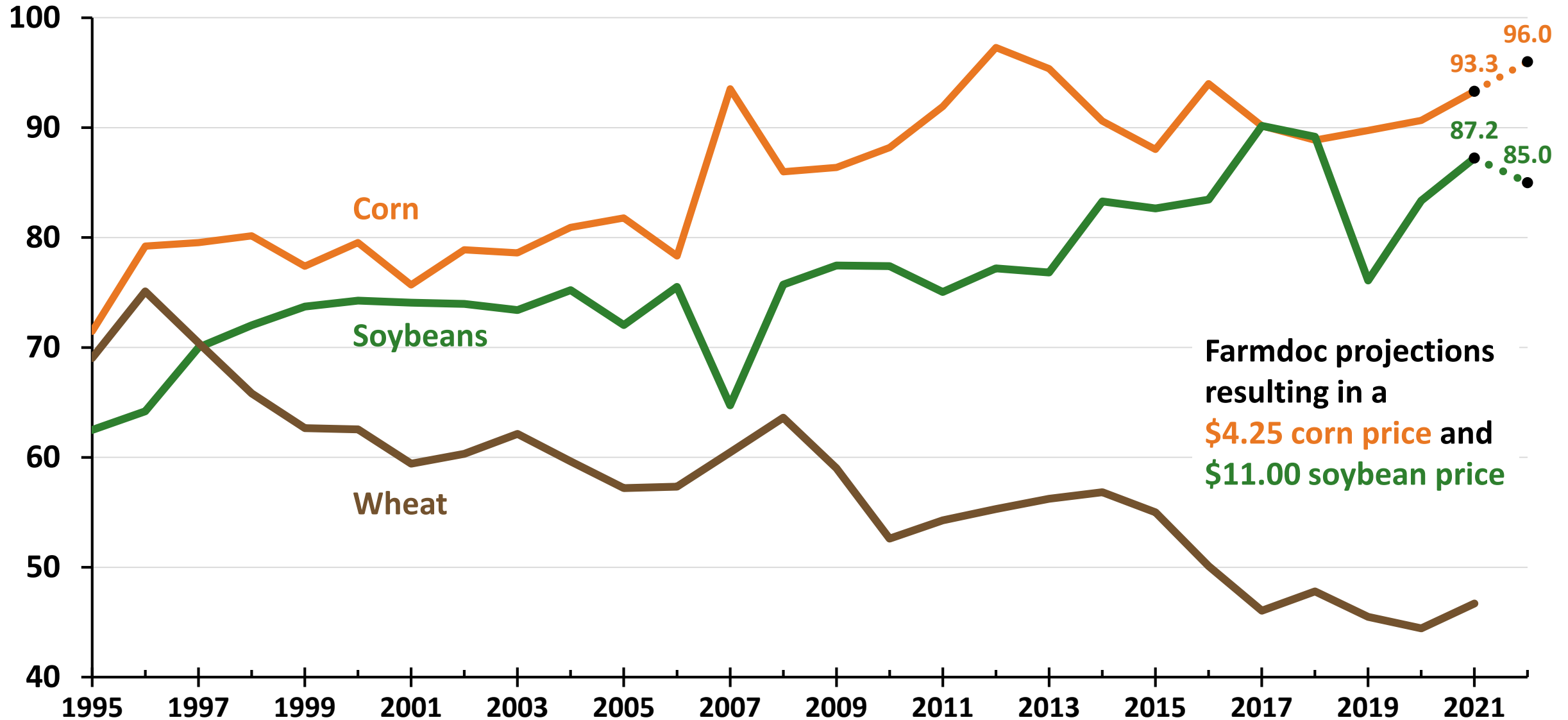
U.S. Market Year Average Prices for Corn and Soybeans 1960 to 2021P



Historical Crops Planted in United States



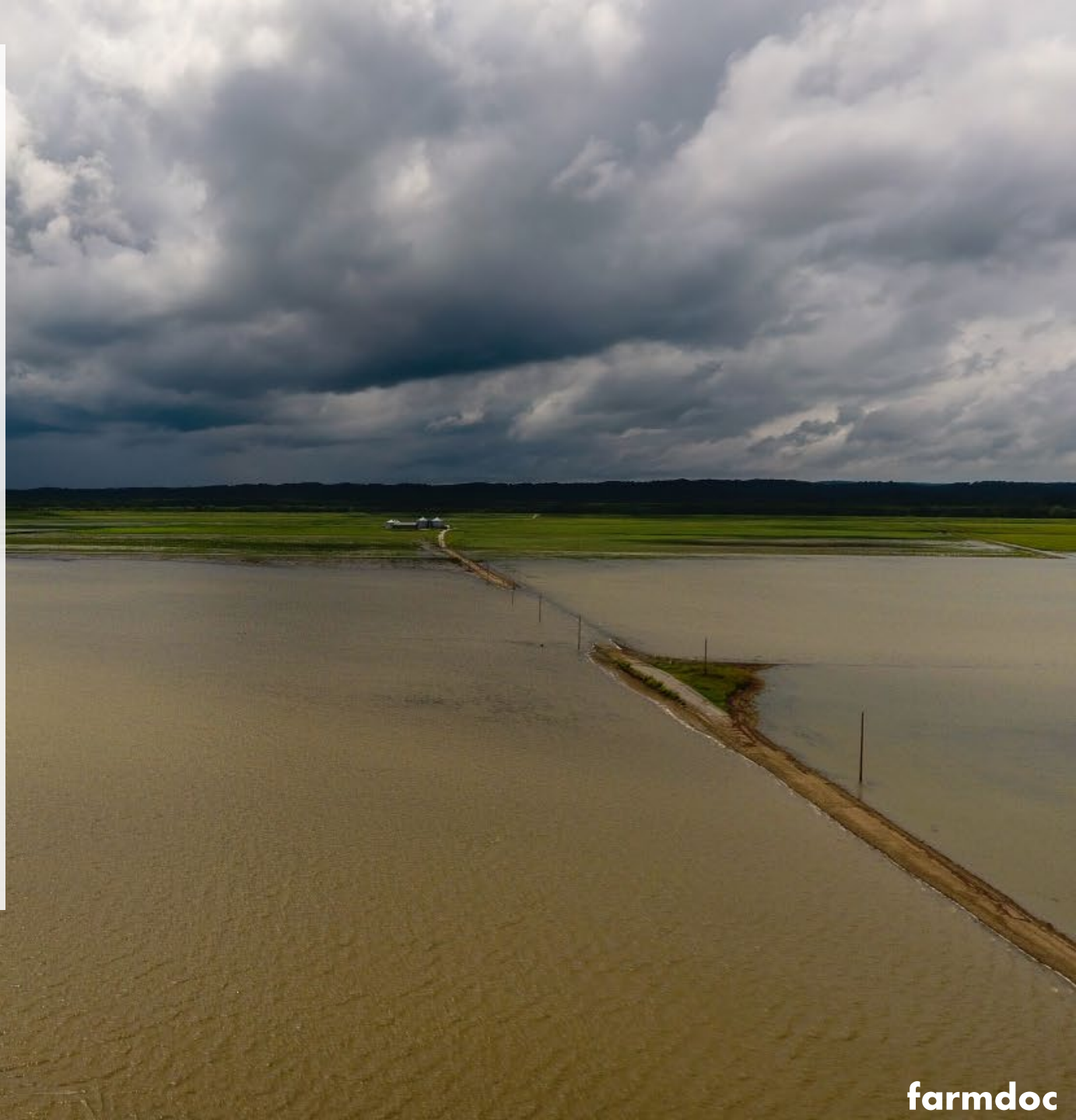
U.S. Plant Acres in Million Acres



Farmdoc projections
resulting in a
\$4.25 corn price and
\$11.00 soybean price

Background Summary

- **Looking at historical high prices, could go higher with change in acres or weather-related issues**
- **Capital purchases and other purchases have been large**



Inputs impacted by current supply issue

- 1. Labor shortages:** everyone is looking for employees, not likely to change any time soon.
- 2. Seed:** 8-10% increase in price
- 3. Pesticides:** large increases
- 4. Equipment:** large increases
- 5. Fertilizer:** very large increase

How concerned are you about glyphosate availability in 2022?

Very concerned

Somewhat concerned

Not concerned



Pesticide

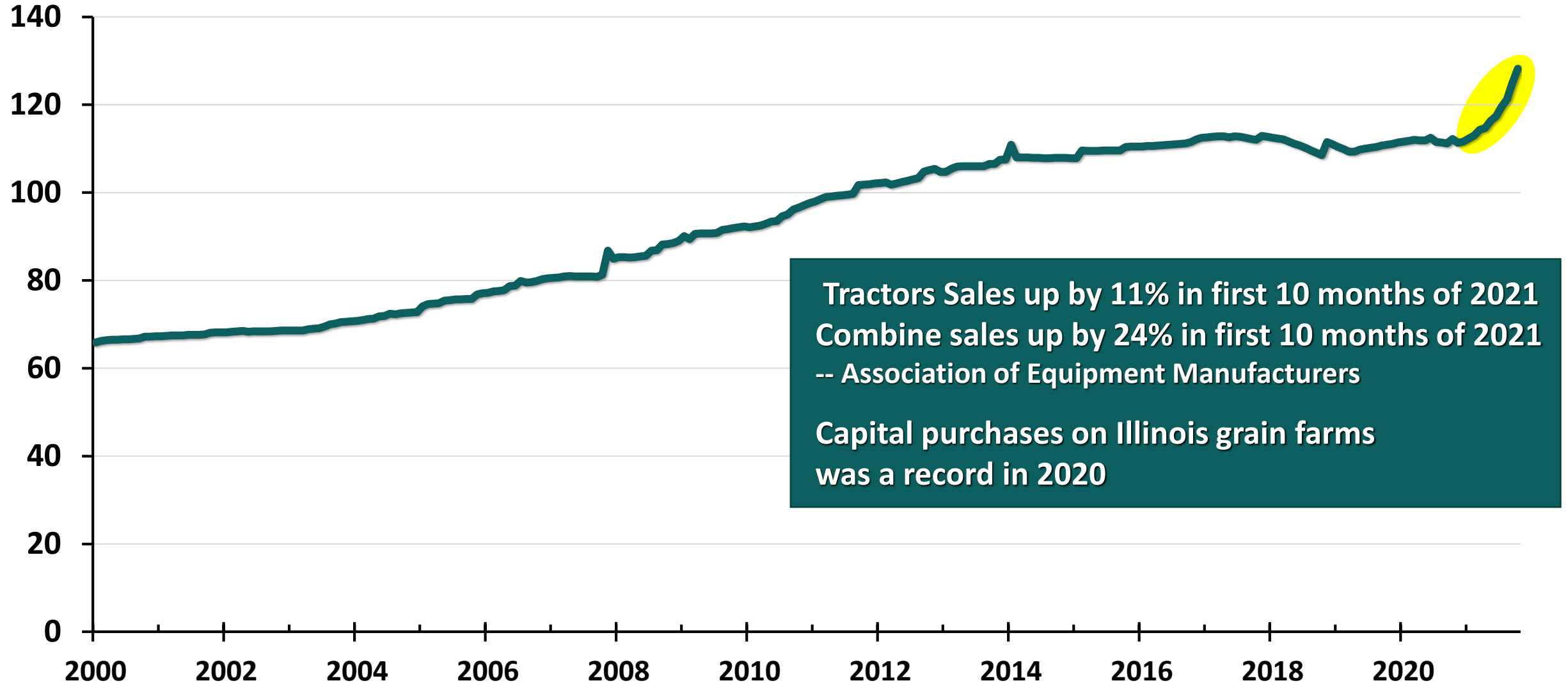
- Supply issues with glyphosate and glufosinate will continue
- Issues leading to pesticide issues: Covid related, China, container issue, Hurricane Ida and closing of Bayer plant
- Expect large increases in price
- Most likely have supply, but need to re-evaluate pesticide program in light of large cost increases



Were 2021 capital purchases:

- Above 2020 levels, no availability problems
- Above 2020 levels, availability problems
- No capital purchases made
- Below 2020 levels, no availability problems
- Below 2020 levels, availability problems

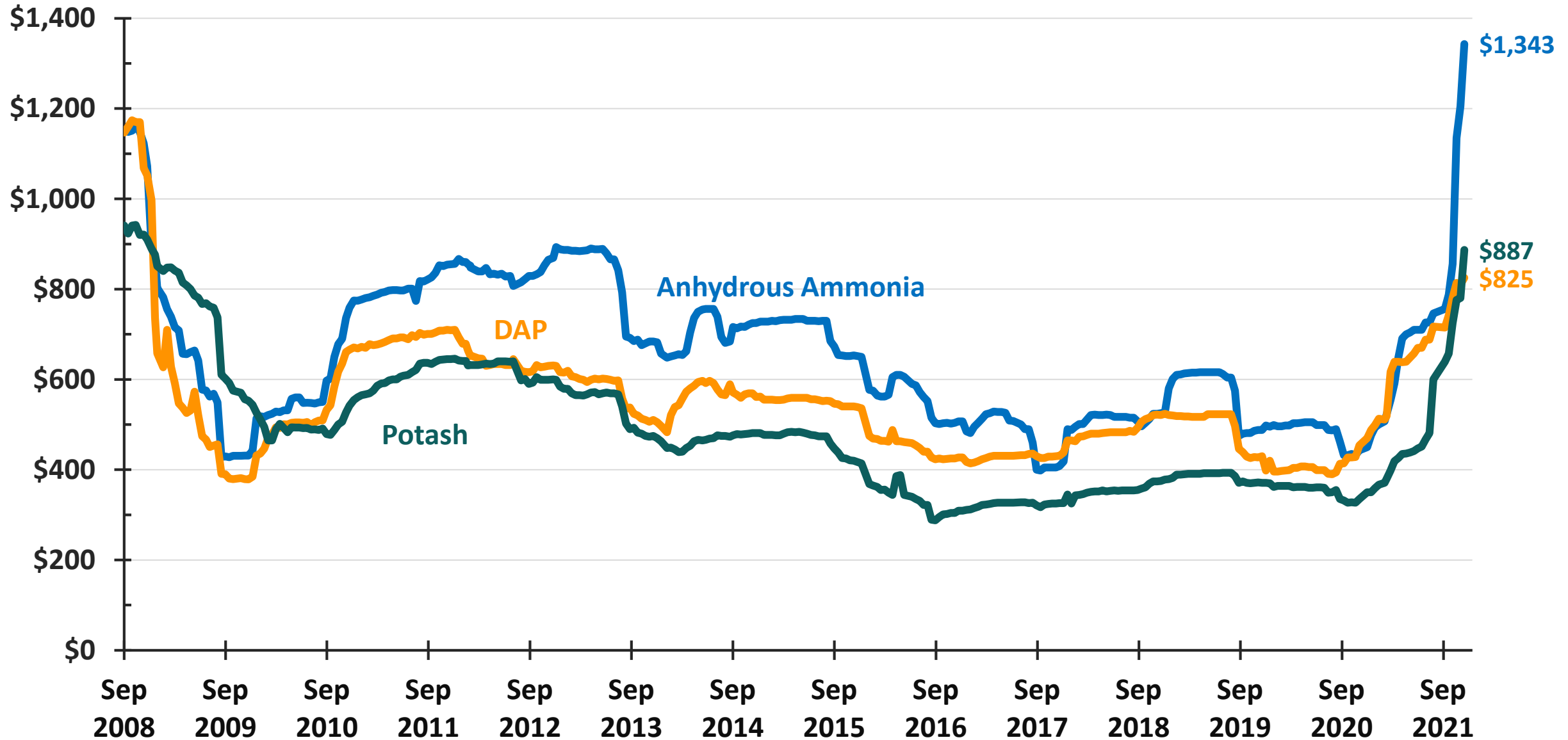
Index of Price Paid for Tractors



Nitrogen Fertilizer



Fertilizer Prices per Ton in Illinois From 2008 to 2021



Source: US Department of Agriculture, Agricultural Marketing Service

What percent of 2022 nitrogen applications need to be applied yet

- 100% (all)
- 50% to 100%
- 10 to 50%
- Less than 10%



Calculation of Fertilizer Costs, 2021 and 2022

	Rqmts lbs/acre	Prices on 10/22/2020		Prices on 10/21/2021		Change \$/acre
		Prices \$/ton	Costs \$/acre	Prices \$/ton	Costs \$/acre	
Corn						
Anhydrous Ammonia	234/207	\$432	42	\$1,400	\$118	\$76
DAP	177	\$428	38	\$850	\$75	\$37
Potash	88	\$327	14	\$887	\$39	\$25
Total Fertilizer Costs			\$94		\$232	\$138
Soybeans						
DAP	111	\$428	24	\$850	\$47	\$23
Potash	133	\$327	22	\$887	\$59	\$37
Total Fertilizer Costs			\$46		\$106	\$60

See: farmdoc Daily, November 2, 2021

2022 Corn and Soybean Budgets for Northern, Central, and Southern Illinois

	Corn	Soybeans
Yield per acre	220	68
Price per bu	\$5.00	\$12.00
Gross revenue	\$1,100	\$816
Fertilizers	\$262	\$111
Pesticides	\$66	\$54
Seed	\$124	\$80
Drying	\$24	\$2
Storage	\$15	\$5
Crop insurance	\$24	\$16
Total direct costs	\$515	\$268
Total power costs	\$151	\$117
Total overhead costs	\$81	\$75
Total non-land costs	\$747	\$460
Operator and land return	\$353	\$356

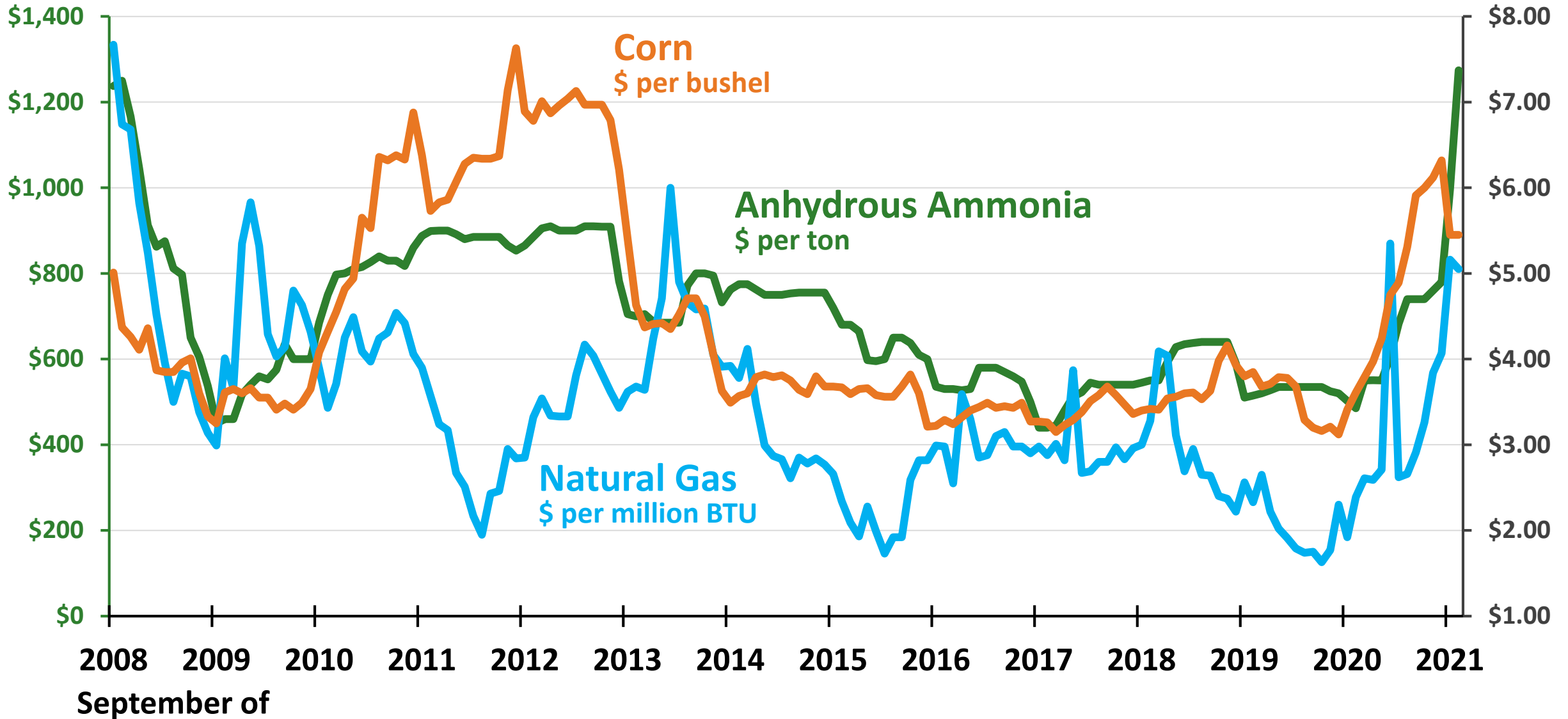
- Above average prices (fall bids)

- Fertilizer prices are at **record levels**

- **Touch and go**

Corn-Minus-Soybean Return -\$3

Anhydrous Ammonia and Henry Hub Natural Gas Price



Develop a Model of Ammonia Price

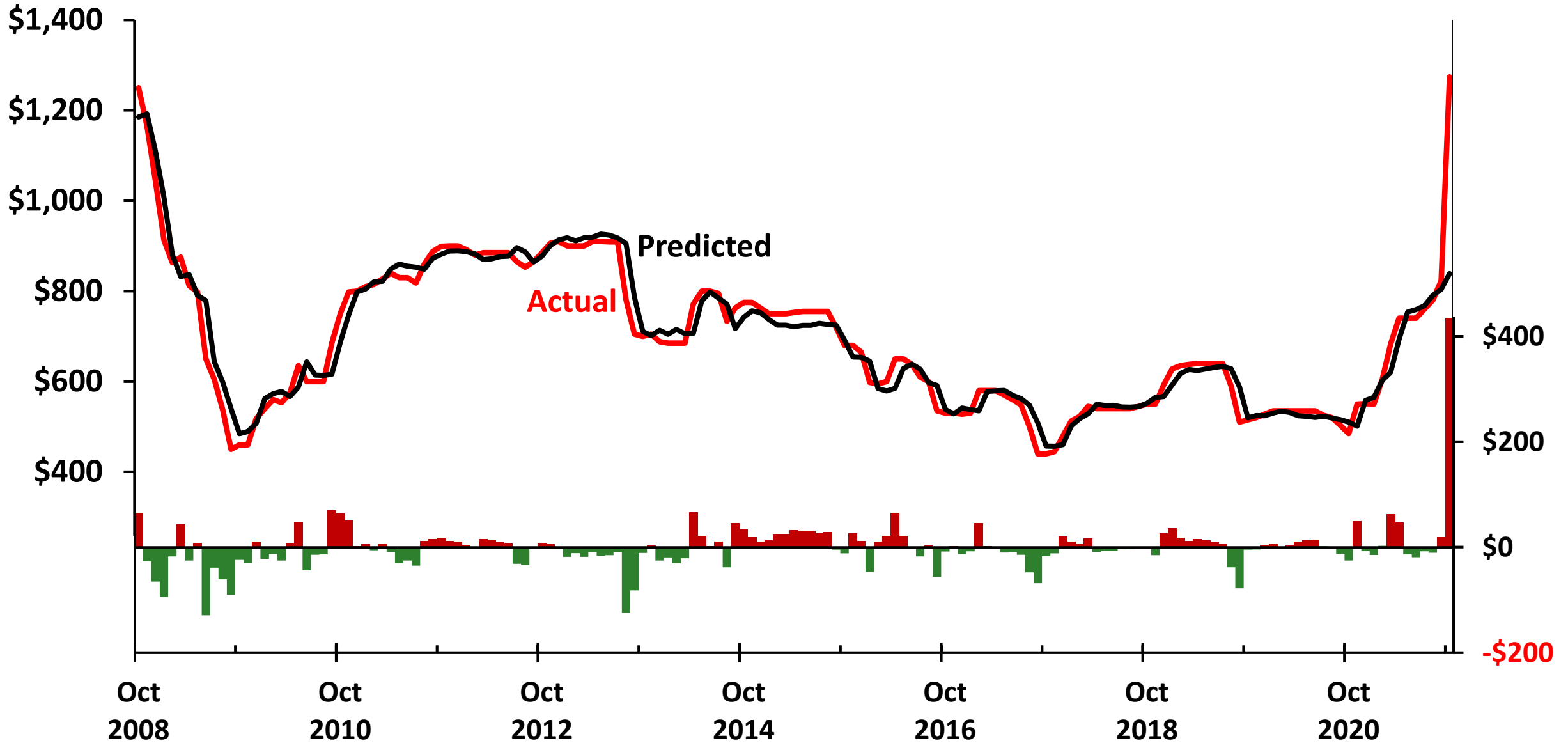
Price of anhydrous ammonia depends on

- Lagged ammonia price (Illinois price)
- Corn price (national corn price)
- Natural gas price (Henry Hub price)

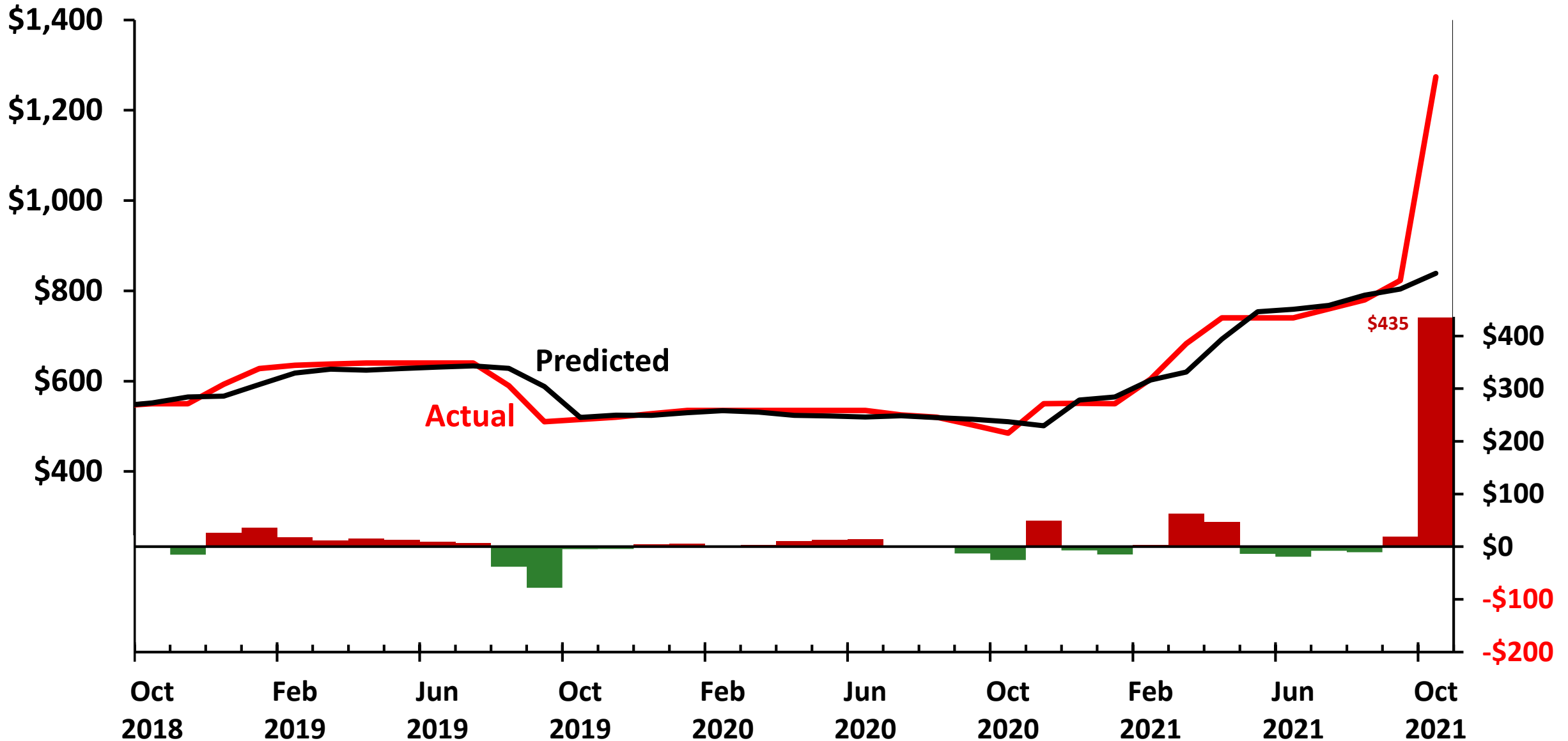
Results:

- Model explains well ammonia prices even up to Nov 2021
- Corn price has a large role in ammonia price,
more important than natural gas
- In Nov 2021, there is over \$400 actual price over predicted

Actual Versus Predicted Anhydrous Ammonia Prices



Actual Versus Predicted Anhydrous Ammonia Prices



Result

- \$400 premium built into market compared to our model results
- What will happen in spring?
 - Will the \$400 premium go away
 - Large incentives for the product to be provided, the premium exists because of short supply relative to demand
- Other considerations (Beghin and Nogueira, “A Perfect Storm in Fertilizer Market, U of Nebraska, November 17, 2021)
 - Very high production costs (natural gas) in other countries
 - Countervailing duties are in place

General suggestions

- At this point, why lock in any or all of 2022 purchases (assumes purchases have not been made)
- At the very least, do not buy all of 2022 purchases at this point
- Lower nitrogen application rates
- Price more of 2022 corn and soybeans, particularly if making decisions

Strategies



Strategy 1

Apply all of booked nitrogen this fall if possible



Strategy 2

If fall ammonia is not booked but can apply, continue to apply but do at a much lower rate



Strategy 3

Split applications

1. Apply 75% of MRTN
2. Apply remaining in spring



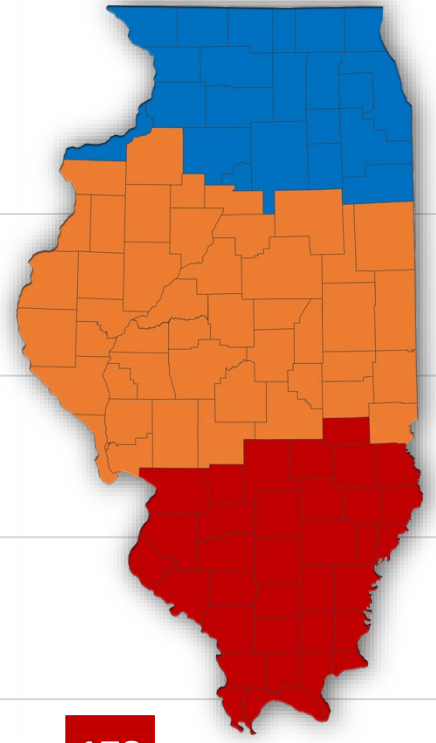
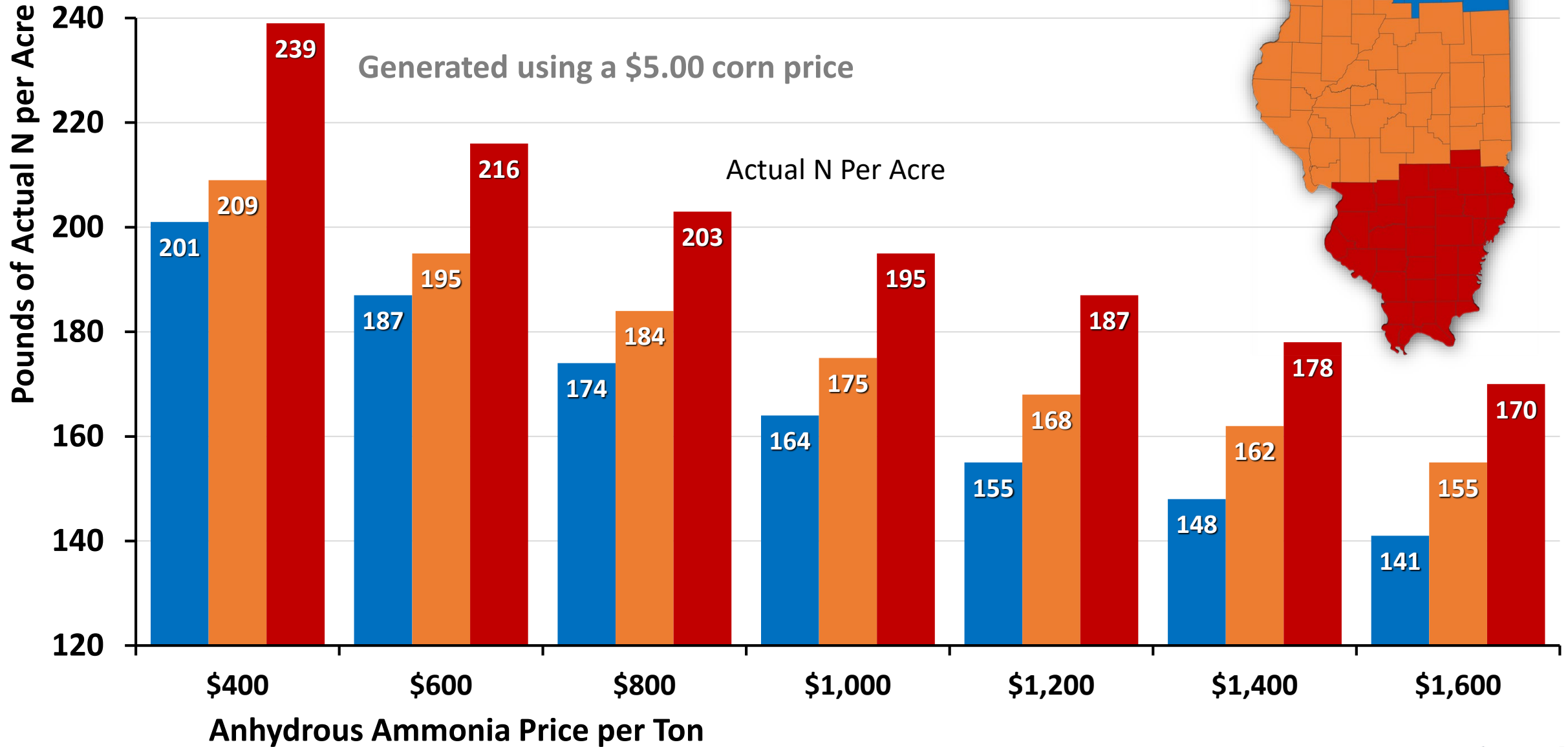
Strategy 4

Apply most nitrogen as anhydrous ammonia

	Anhydrous Ammonia	28% Solution
Price per ton	\$1,344	\$563
\$/lb of actual N	\$0.82	\$1.00

Those prices will vary situation.

Strategy 5: Reduce rate



Summary

Corn and soybean prices are relatively high
could go higher

Plant corn/soybeans
probably in about the same proportion as last year

Nitrogen

- Lower applications
- Split rates
- Take a wait and see attitude

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**Monday, November 29th
Grain Market Outlook for 2022**

Scott Irwin and Joe Janzen

**Wednesday, December
1st
Farm Income Outlook for 2022**

Gary Schnitkey, Dale Lattz, and Krista Swanson

**Friday, December 3rd
Supply Bottlenecks and
Management Decisions**

*Gary Schnitkey and
Nick Paulson*

**Monday, December 6th
Farmland Values and Rental
Rates for 2022**

Bruce Sherrick

**Friday, December 10th
Policy Update for 2022**

*Nick Paulson, Krista Swanson and
Jonathan Coppess*

Thank You for joining us!

Please submit your questions

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Nitrogen Fertilizer Strategies for 2022
November 30, 2021
Gary Schnitkey, Nick Paulson, Krista Swanson, Carl Zulauf, and Jim Baltz
Nitrogen fertilizer prices continue to surge, leading to difficult decisions for farmers. Herein, we discuss some strategies for dealing with higher nitrogen fertilizer prices. All these strategies carry risks. Therefore, a number of these strategies have suggestions for mitigating risks....

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<p>Will the Cost to Produce Corn Decrease after 2022? November 23, 2021 Gary Schnitkey, Carl Zulauf, Krista Swanson, Nick Paulson and Jim Baltz Consumer costs in the U.S. have been increasing in a widespread incidence of inflation. Consistent with rising costs across many industries, the cost of producing corn will also increase in 2022.</p>	<p>US Dairy Market and Policy Overview November 22, 2021 Carl Zulauf, Gary Schnitkey, Krista Swanson, and Nick Paulson The marked changes in US dairy markets and policy during the late 20th and early 21st centuries are discussed. Correlation analysis suggests current dairy policy provides less protection against declines</p>	<p>Feeder Cattle Production - Are there differences based on the weight purchased? November 19, 2021 Bradley Zwilling To help answer the question regarding the differences based on the weight purchased in feeder cattle production, we will look at feeder cattle operations enrolled in Illinois Farm Business Farm</p>
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