

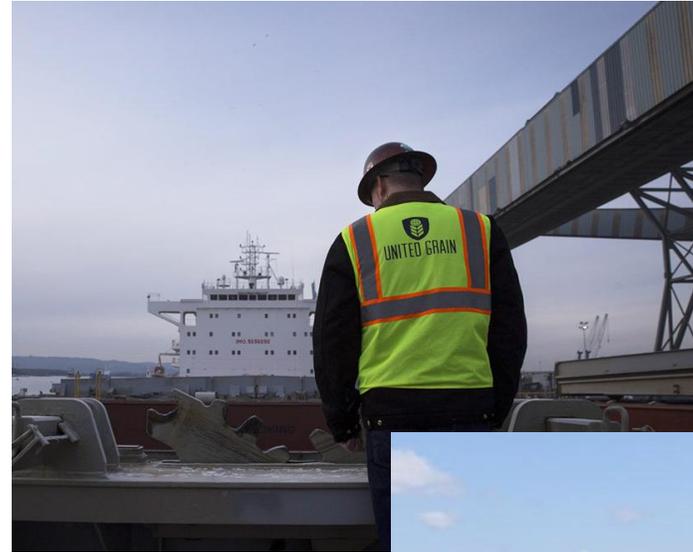
# 2020 Agricultural Outlook

USDA's Office of the Chief Economist  
February 20, 2020

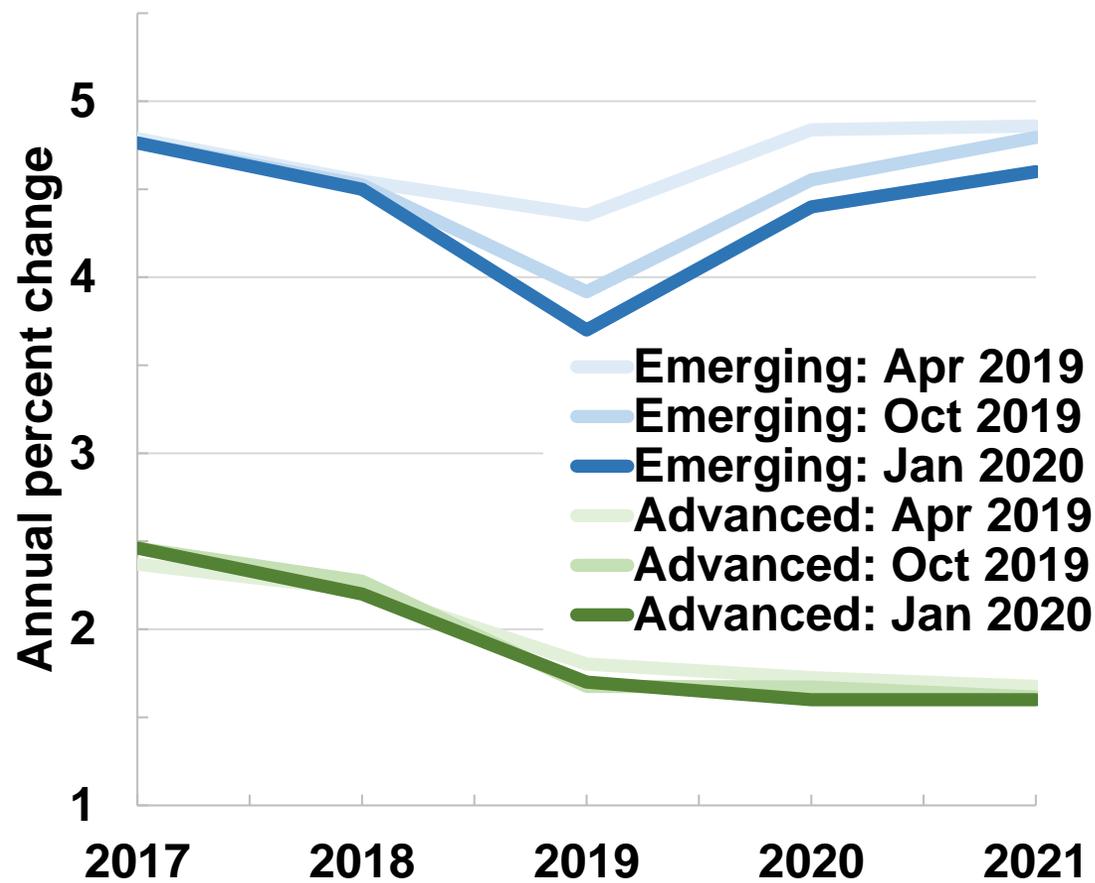
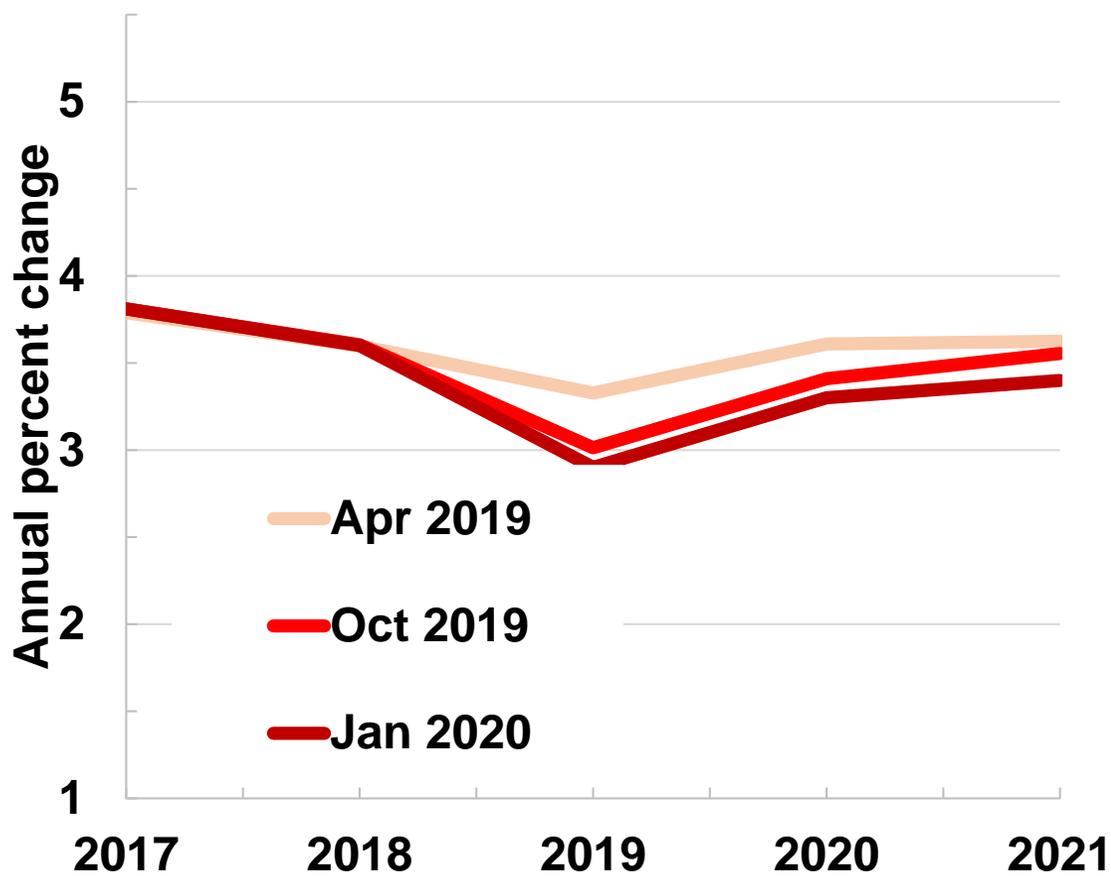
<https://www.thedickinsonpress.com/business/agriculture/4730104-Snow-increases-harvest-worries-as-North-Dakota-considers-disaster-declarations>

# Outline

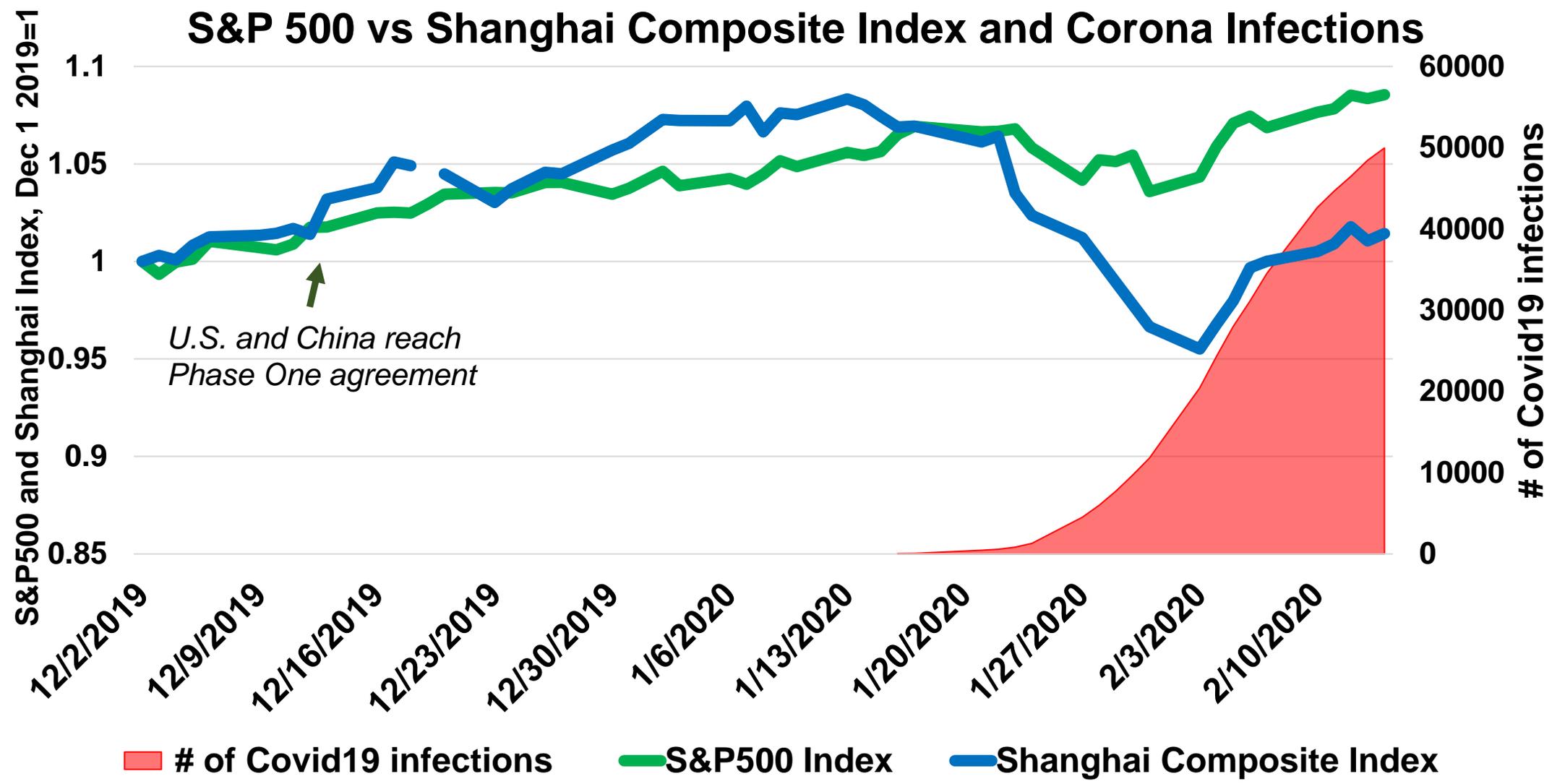
1. Trade
2. Crops & Livestock
3. Farm Economy



# World growth forecast down, led by weakening of emerging markets and developing countries (not including coronavirus)



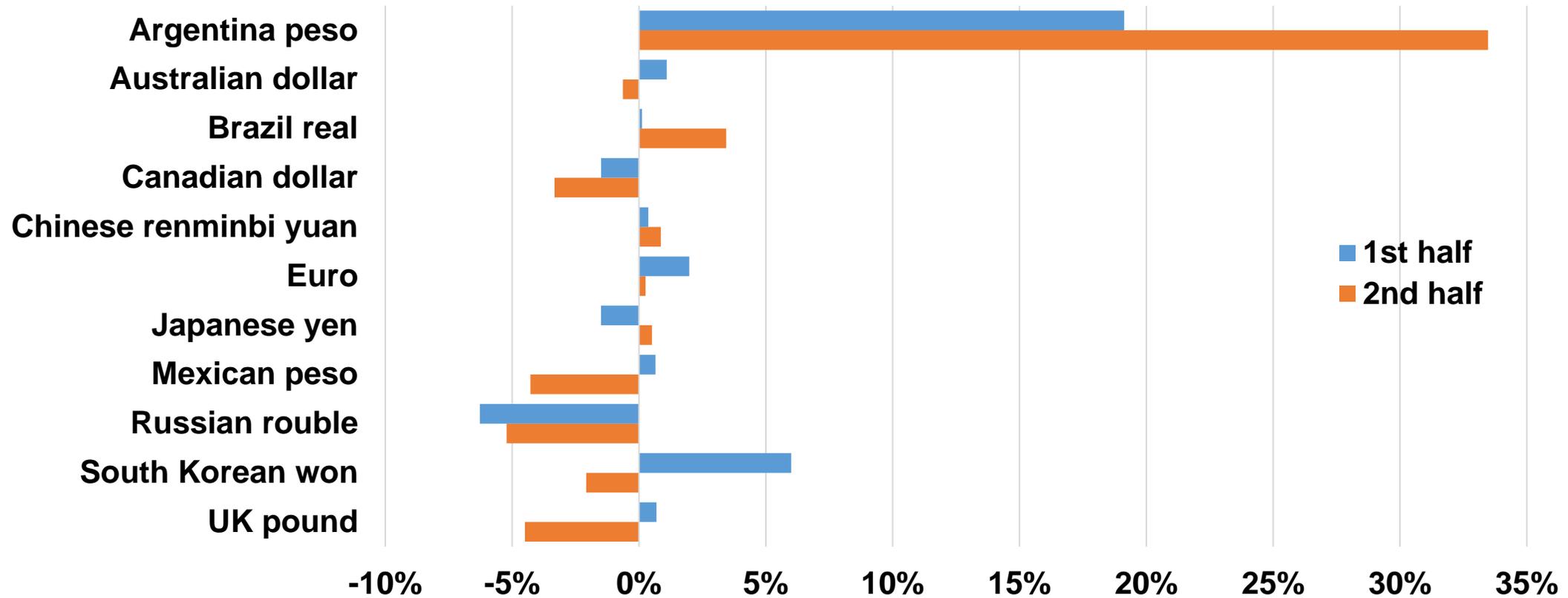
# Coronavirus tops macro global economy concerns; markets expecting recovery



Data: Refinitiv and China's National Health Commission

# U.S. dollar appreciated early in the year before declining across many currencies

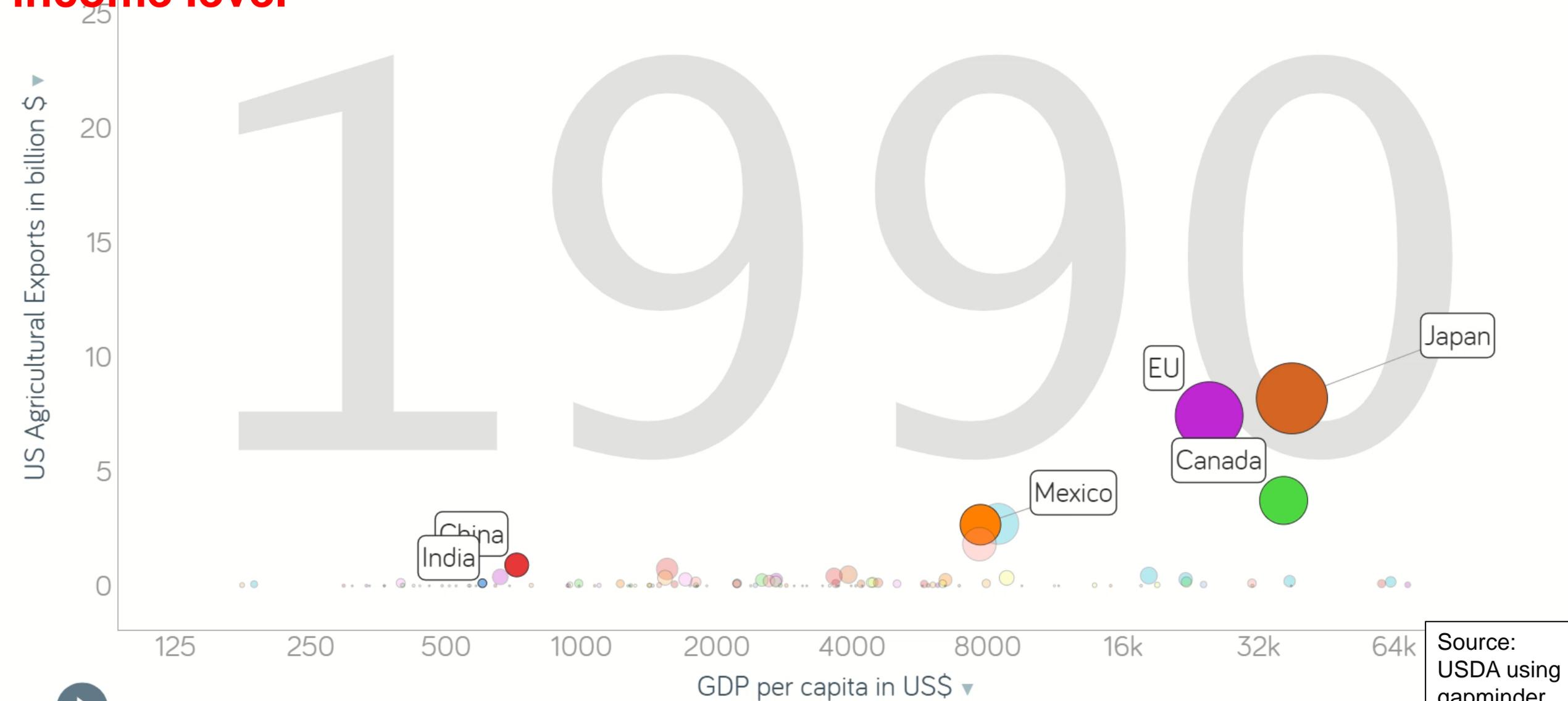
US \$ appreciation in 1st and 2nd half of 2019



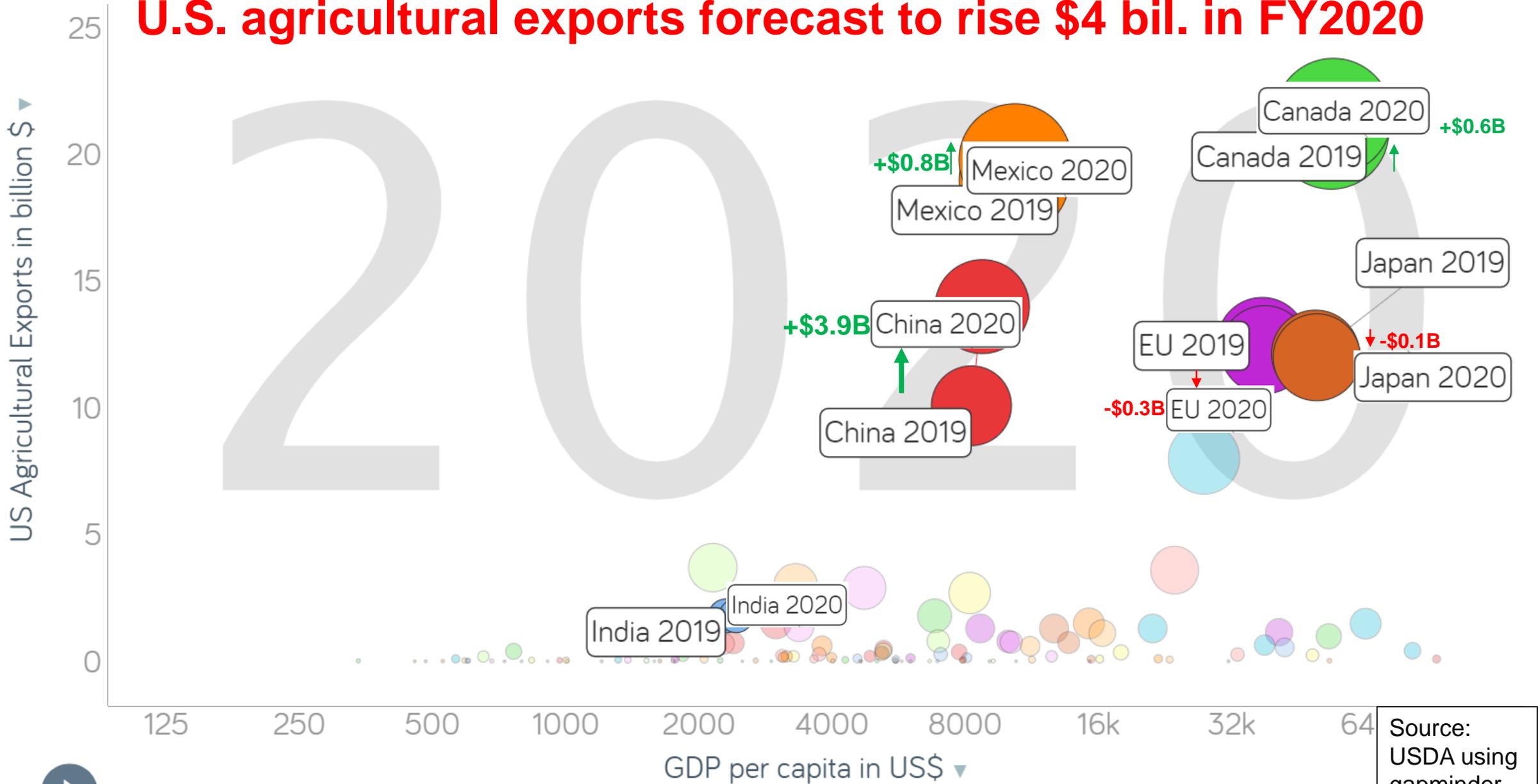
# U.S. agricultural exports by trade agreement status, size of trade



# U.S. agricultural exports in billion \$ from 1990 to 2019 (FY) by income level

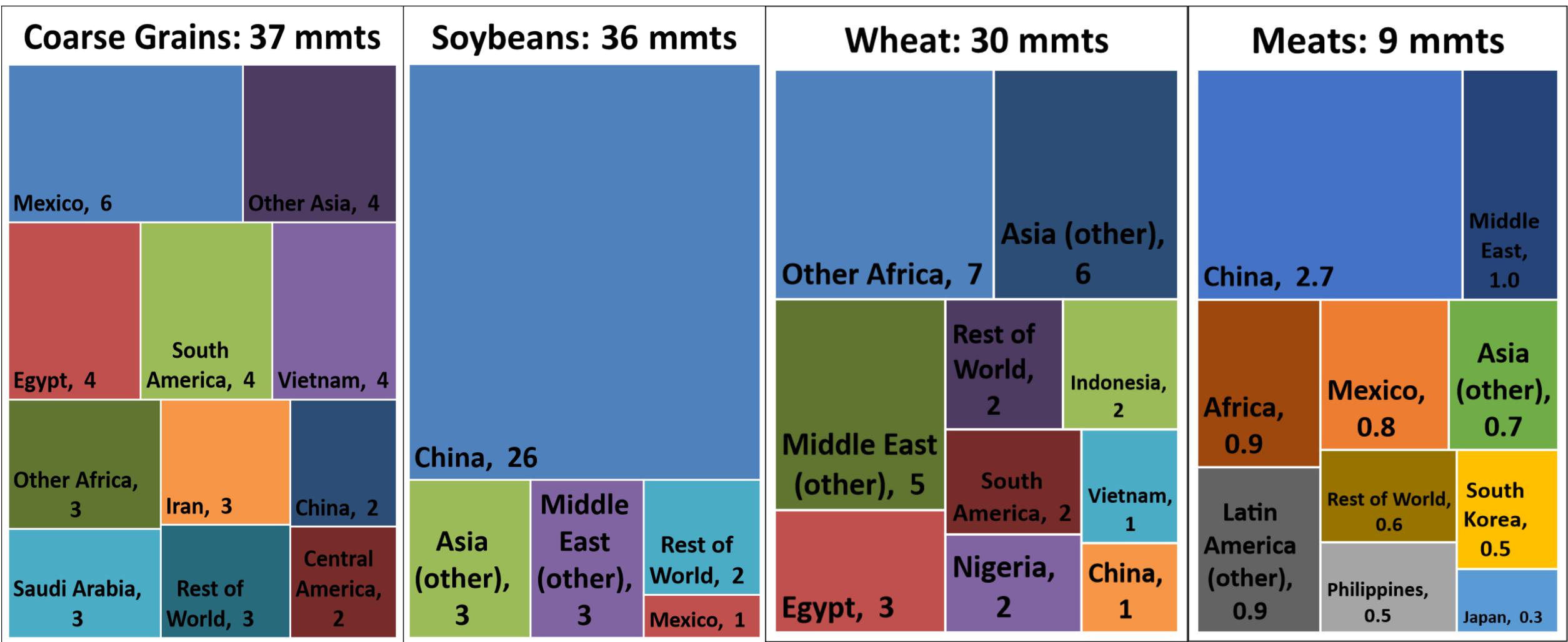


# U.S. agricultural exports forecast to rise \$4 bil. in FY2020



# And where do we expect the largest growth in import demand?

Projected growth in global imports over the next ten years (2020-2029)



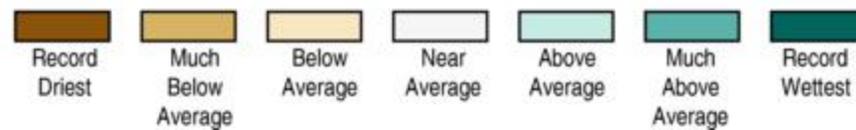
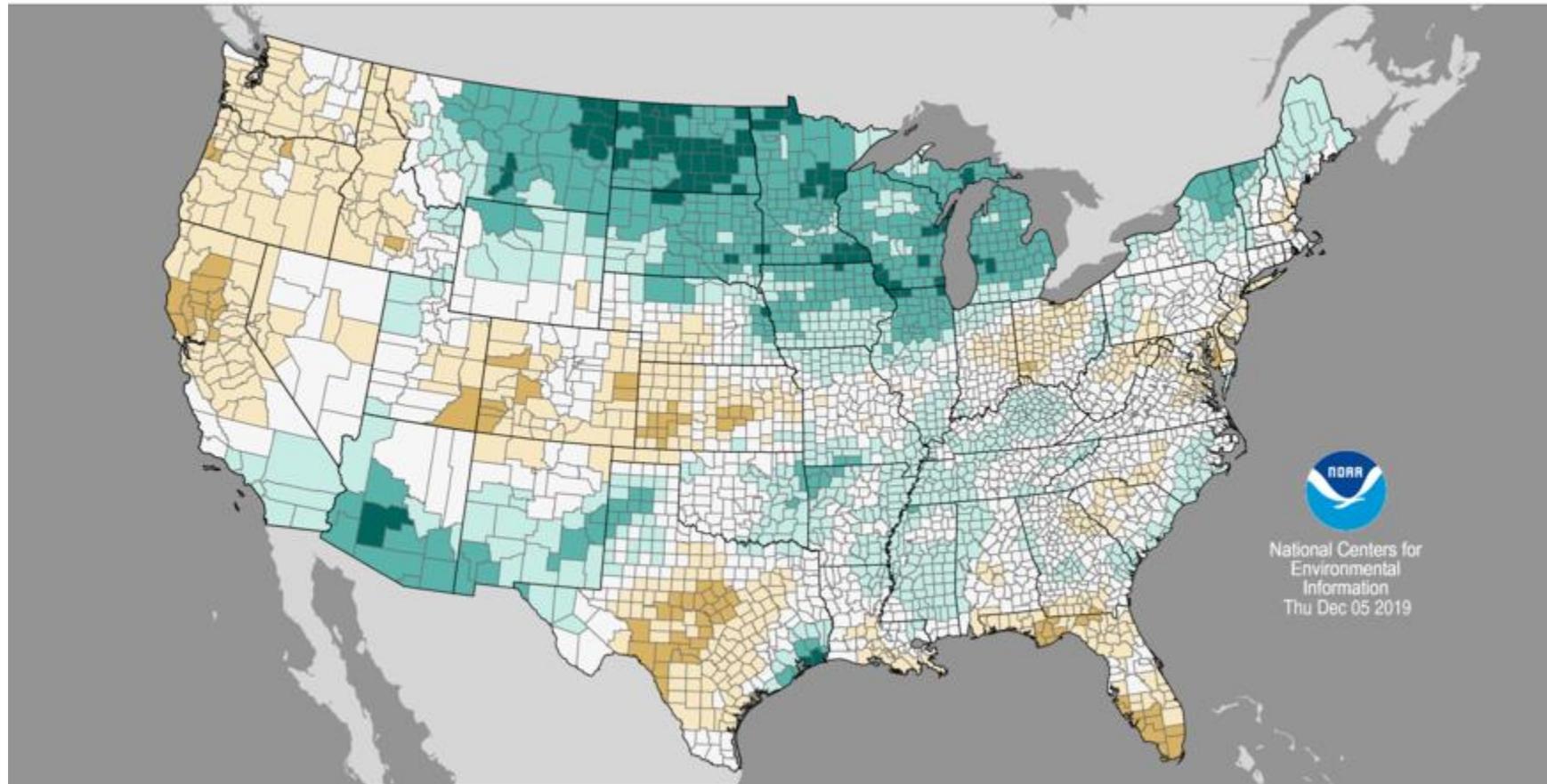
Source: USDA



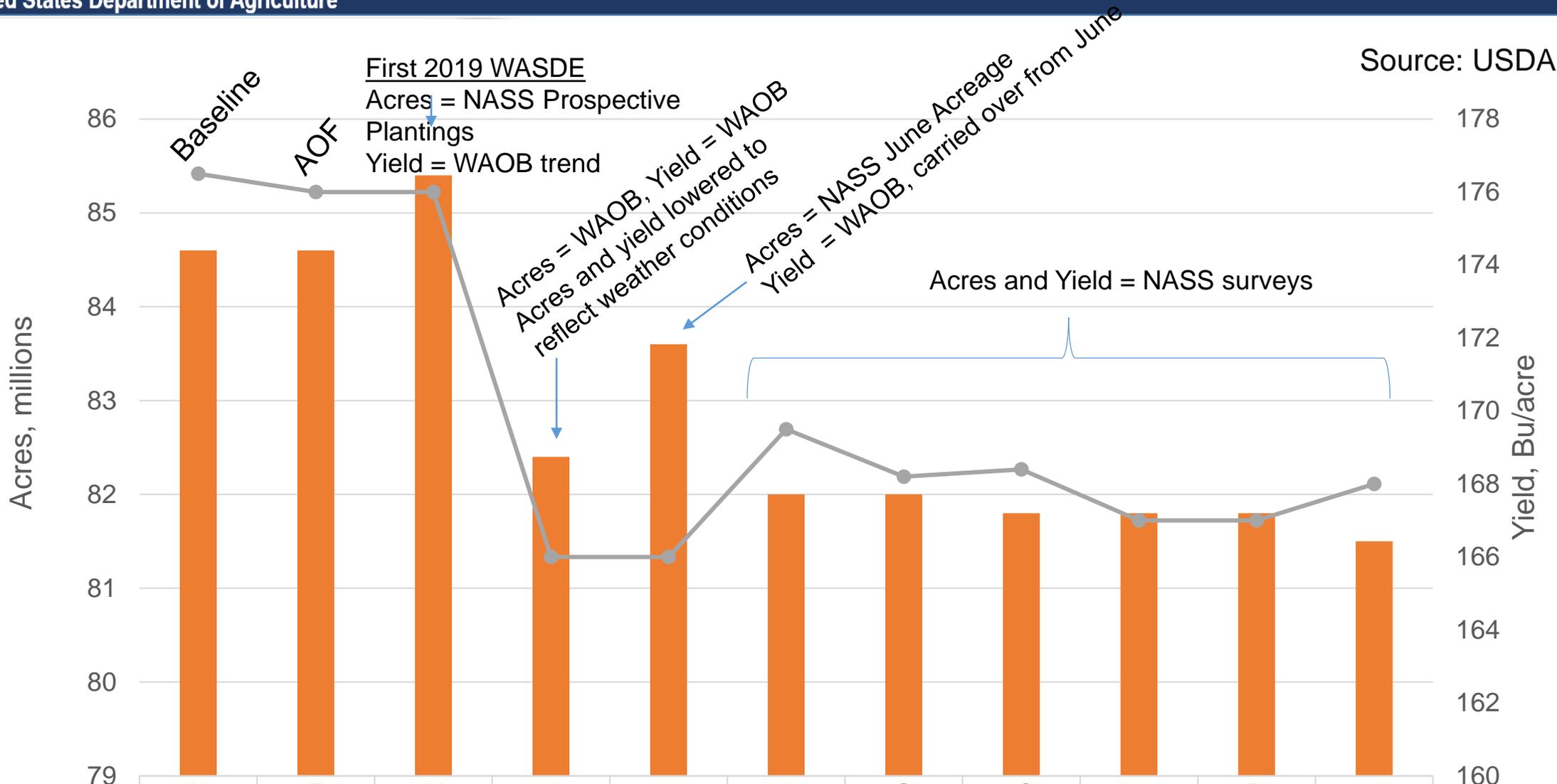
**U.S. Crop and Livestock sectors  
forecast to improve in 2020**

# A wet autumn further delayed an already slow U.S. harvest.

County Precipitation Ranks  
September–November 2019  
Period: 1895–2019



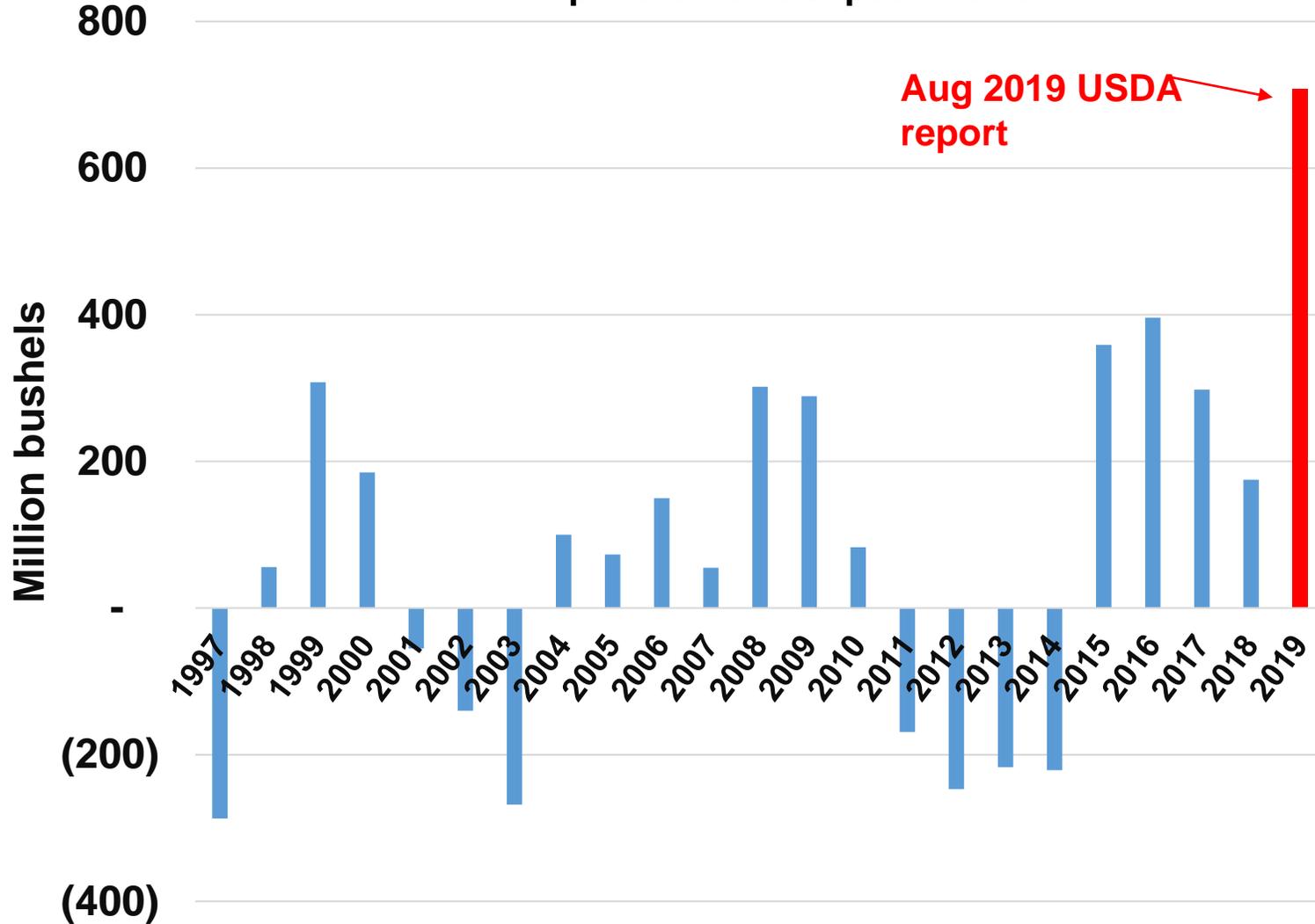
Source: USDA.



	18-Nov-18	22-Feb-19	10-May-20	11-Jun-19	11-Jul-19	12-Aug-19	12-Sep-19	10-Oct-19	8-Nov-19	10-Dec-19	10-Jan-20
acres harvested	84.6	84.6	85.4	82.4	83.6	82	82	81.8	81.8	81.8	81.5
Yield	176.5	176	176	166	166	169.5	168.2	168.4	167	167	168

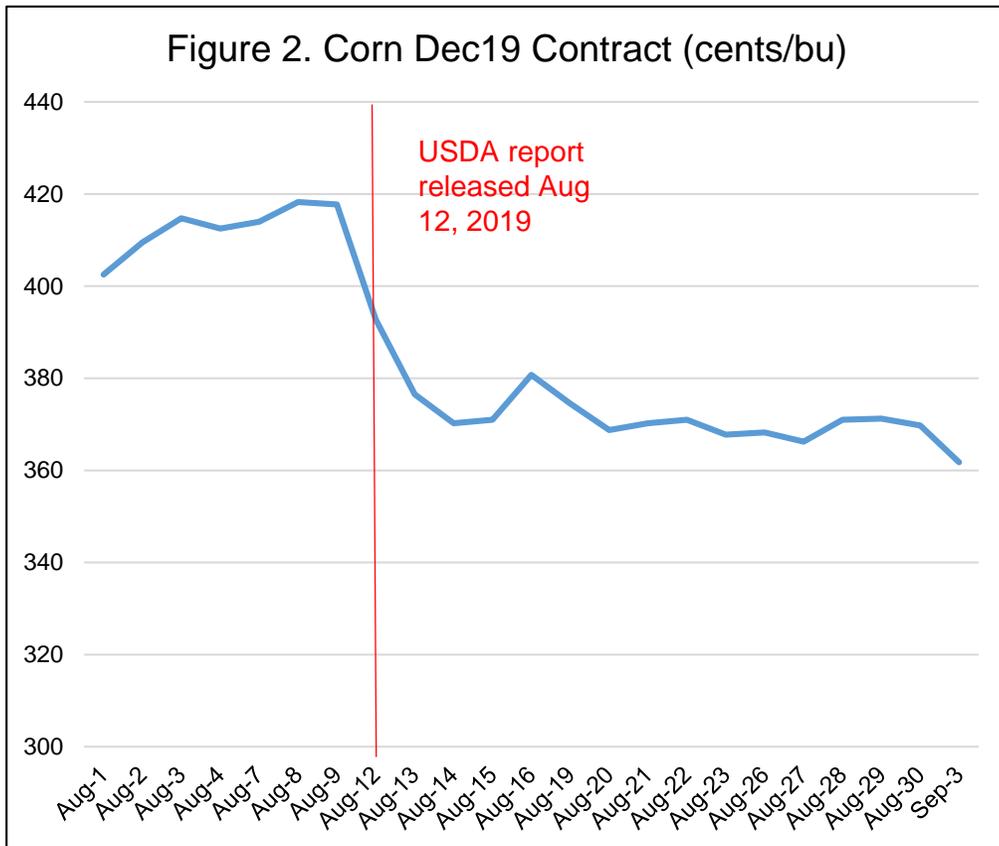
**USDA August  
 corn  
 production  
 forecast  
 minus  
 average  
 private trade  
 expectations**

Figure 1. USDA Aug. corn production forecast minus average private trade expectations

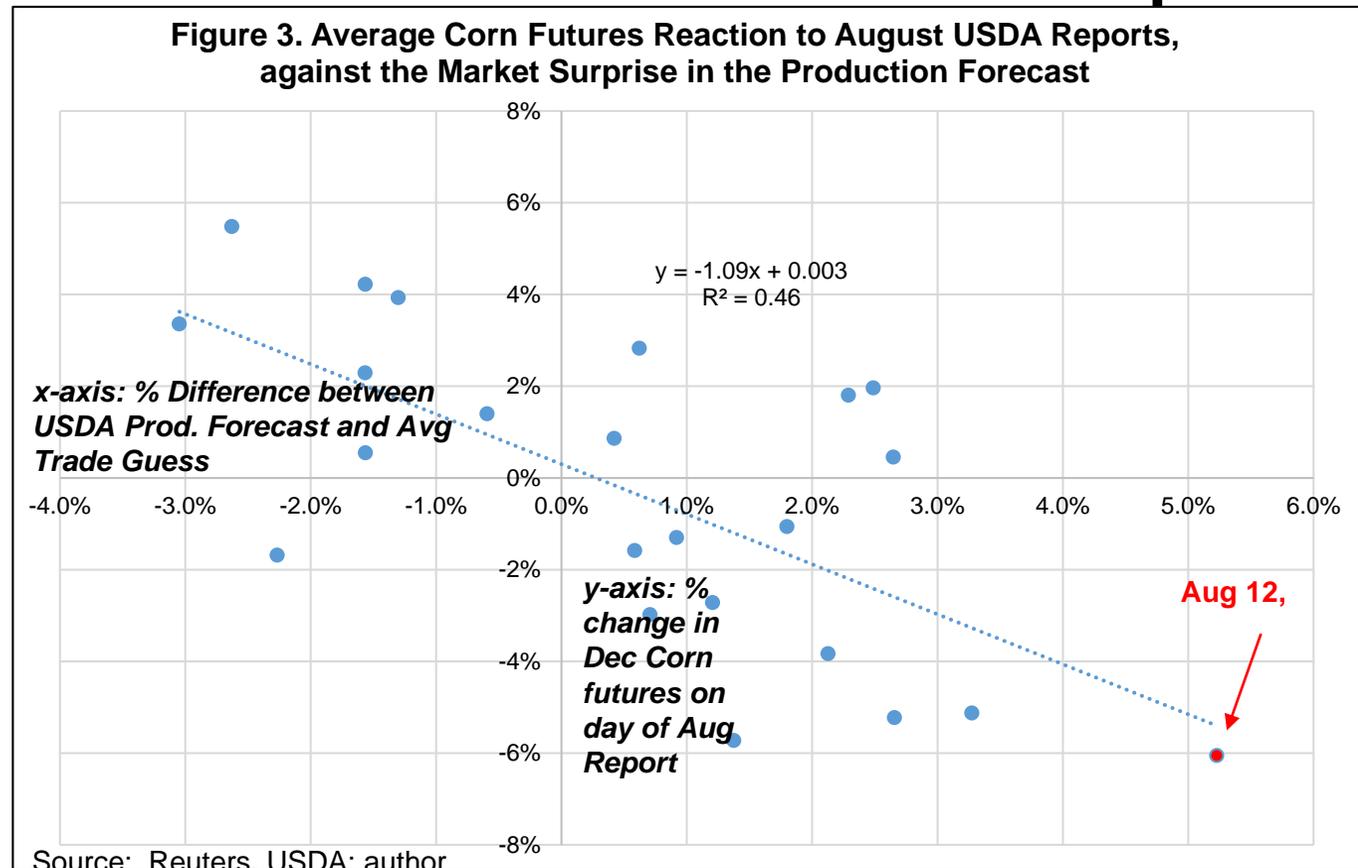


# When USDA and the trade are on opposite pages, a price correction is usually coming

## 50 cent drop in futures price

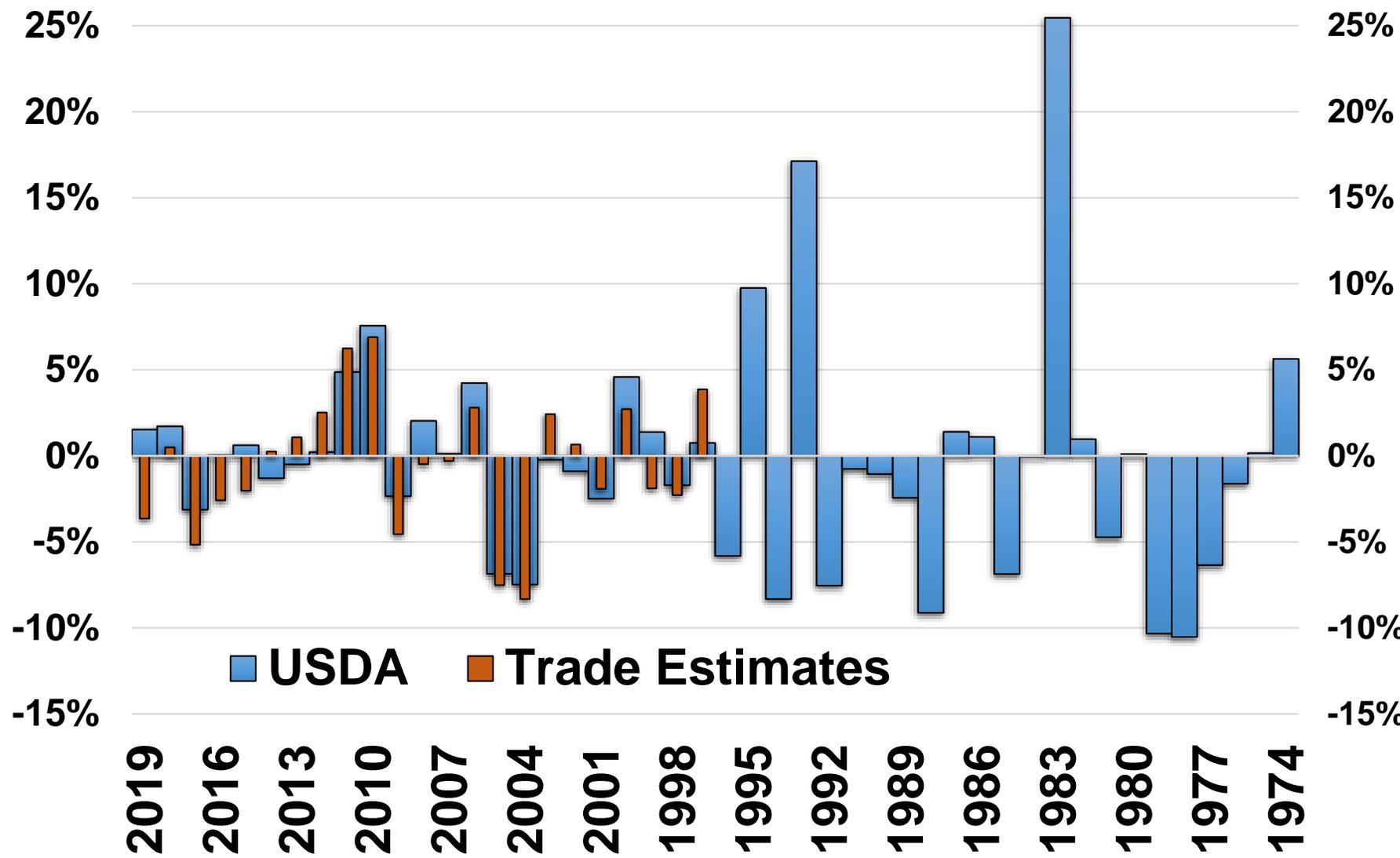


## Reaction inline with relationship



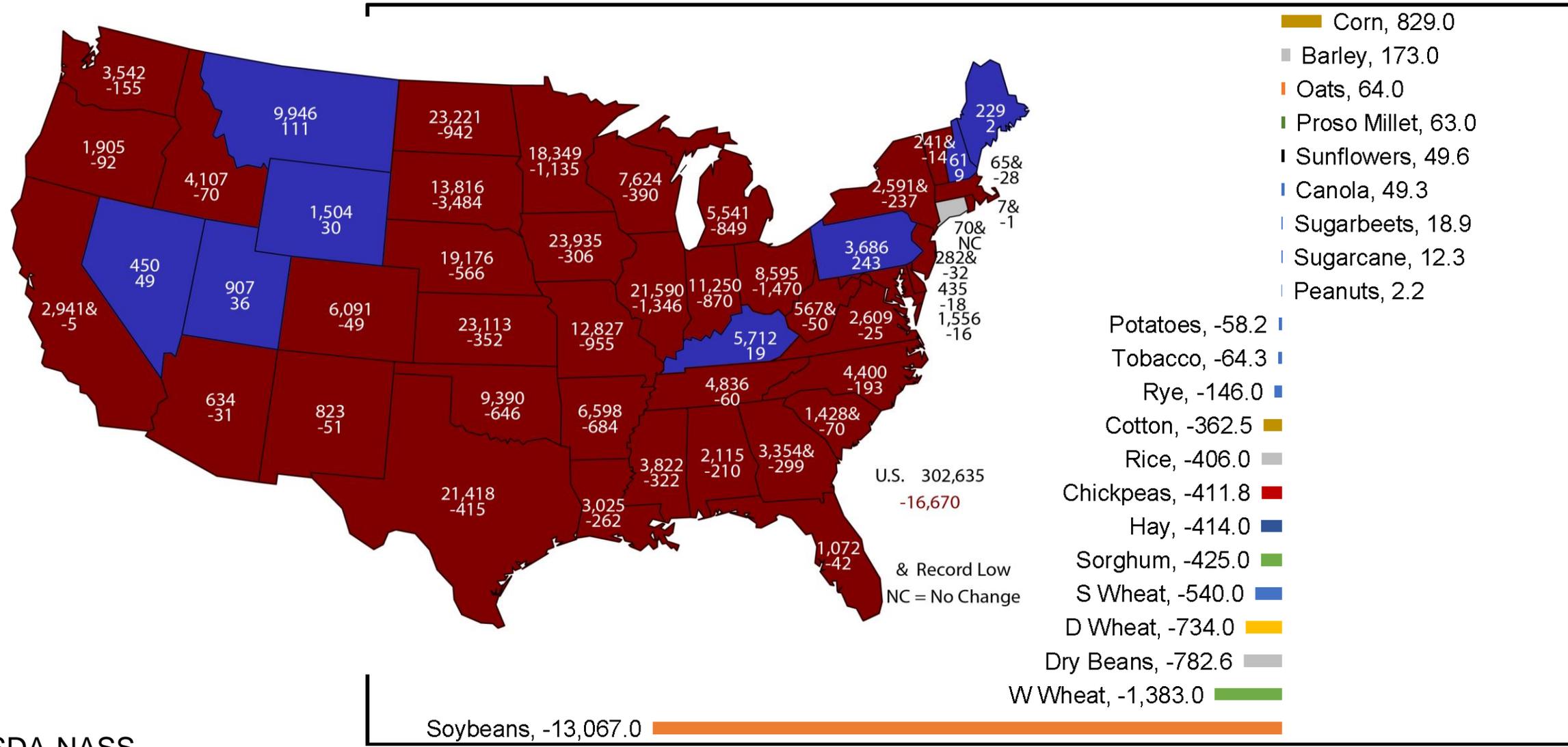
# Forecasts of final corn production have been getting more accurate

**Since 2010, August corn production estimates have been < 5% from final**



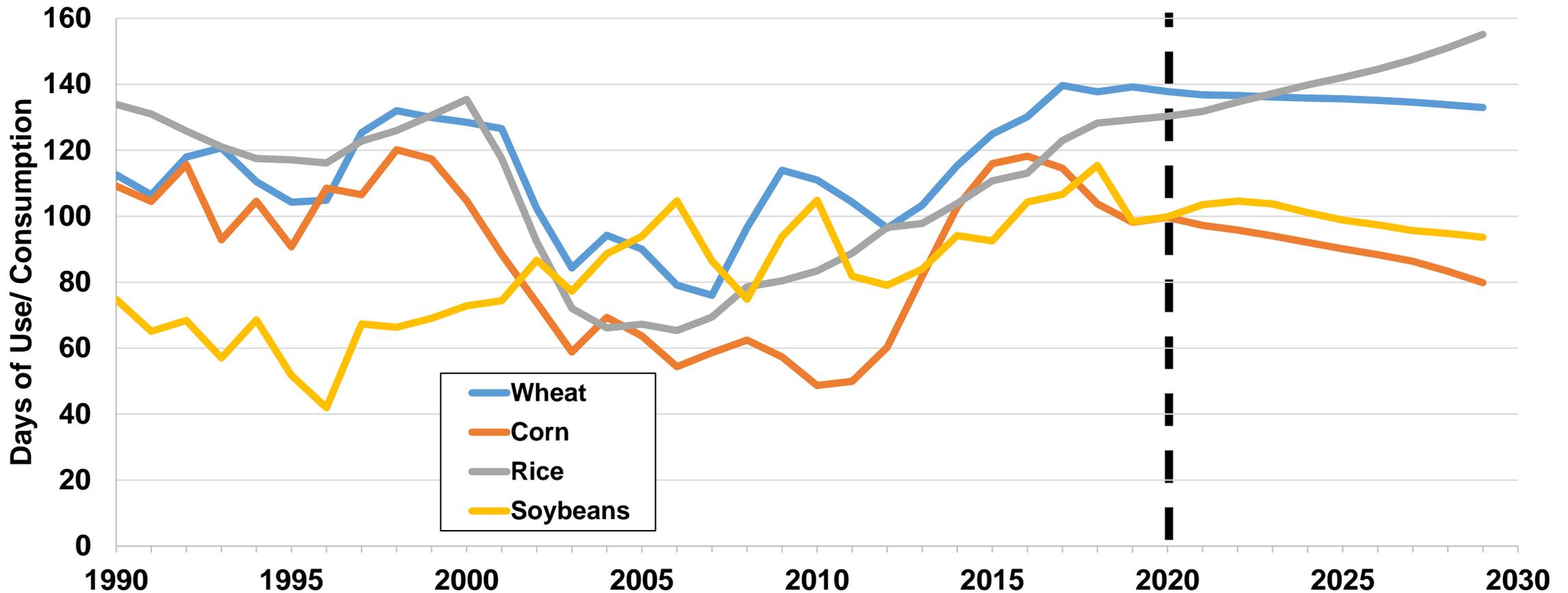
Data: USDA, Refinitiv

# 16 million acre decline in 2019 --- where do they end up?

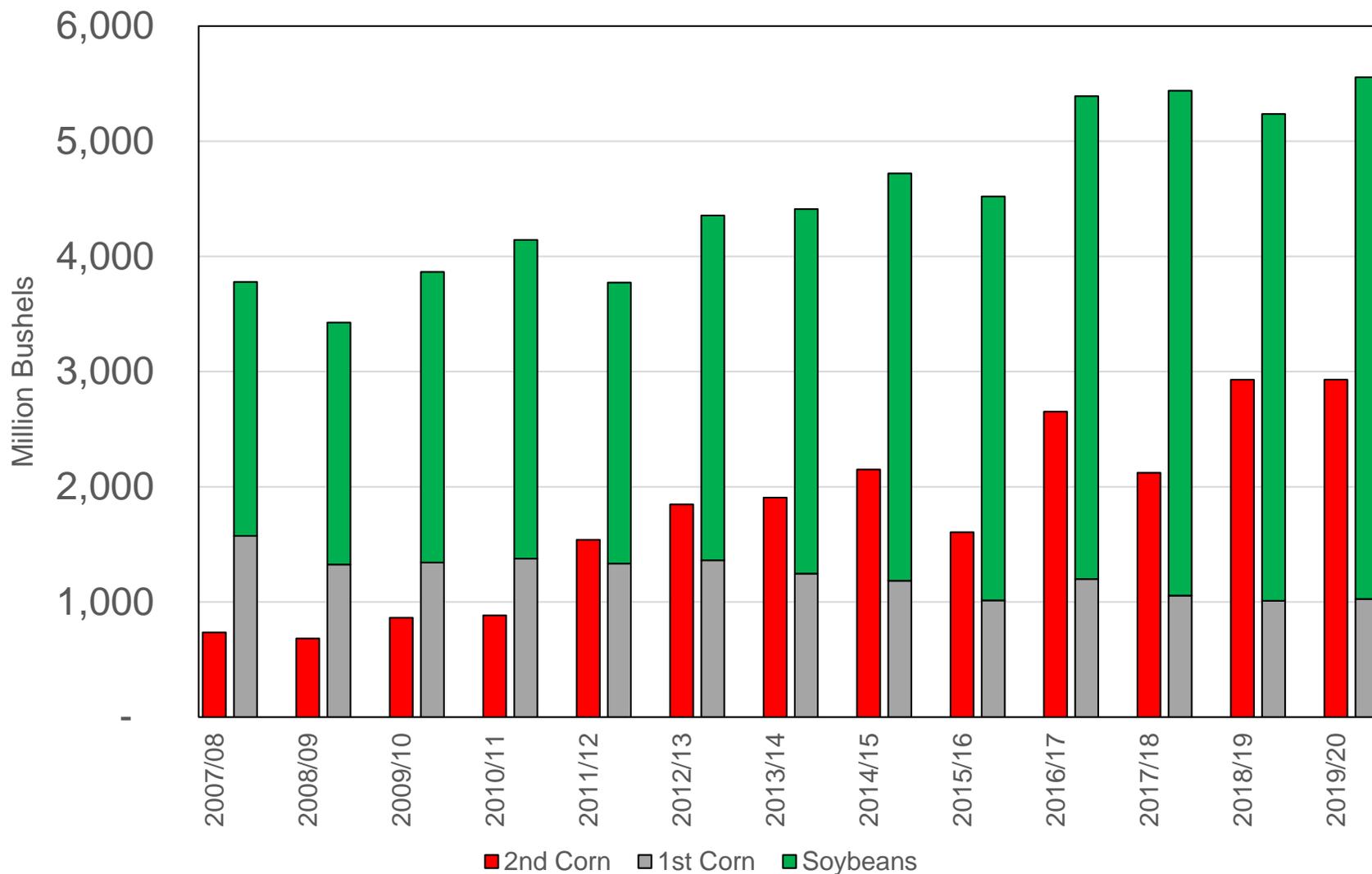


Source: USDA-NASS.

# Global stocks in days of use: stocks are relatively high but expected to decline over the next few years (except rice)

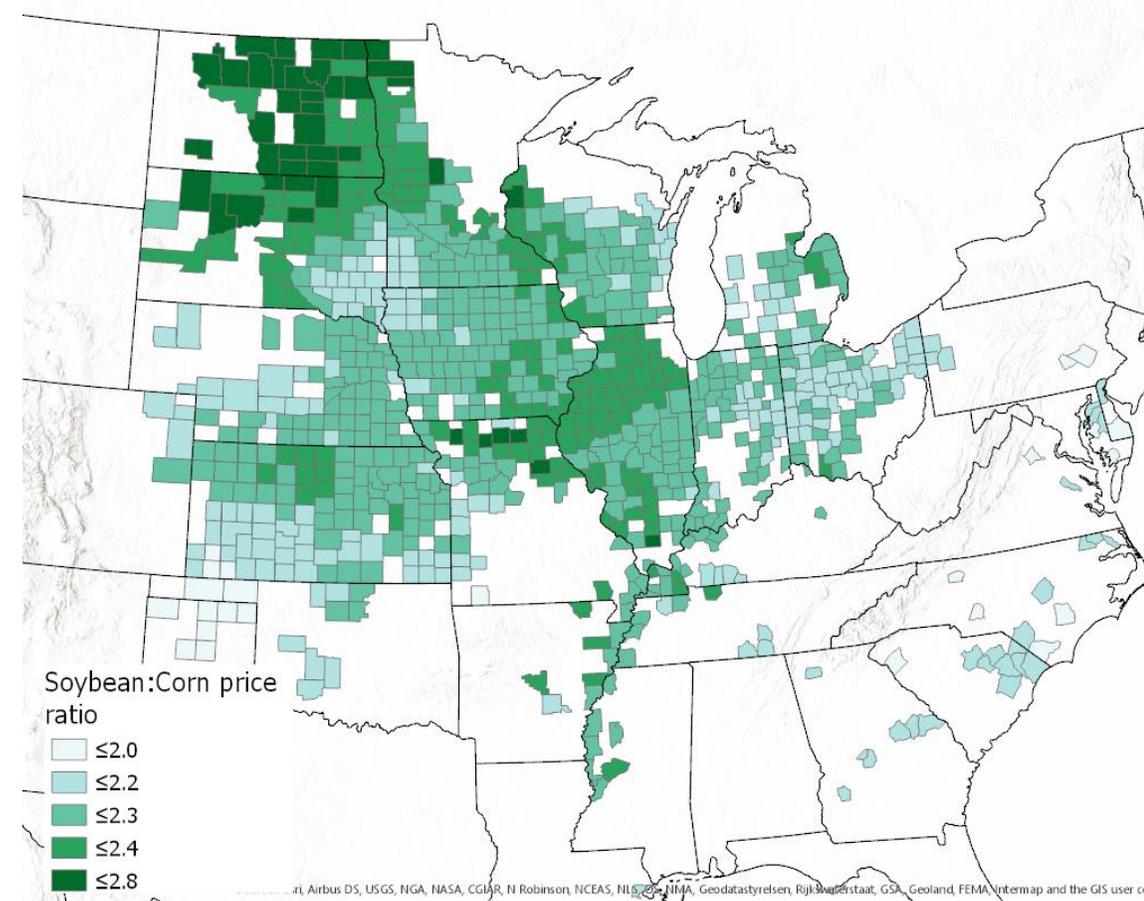
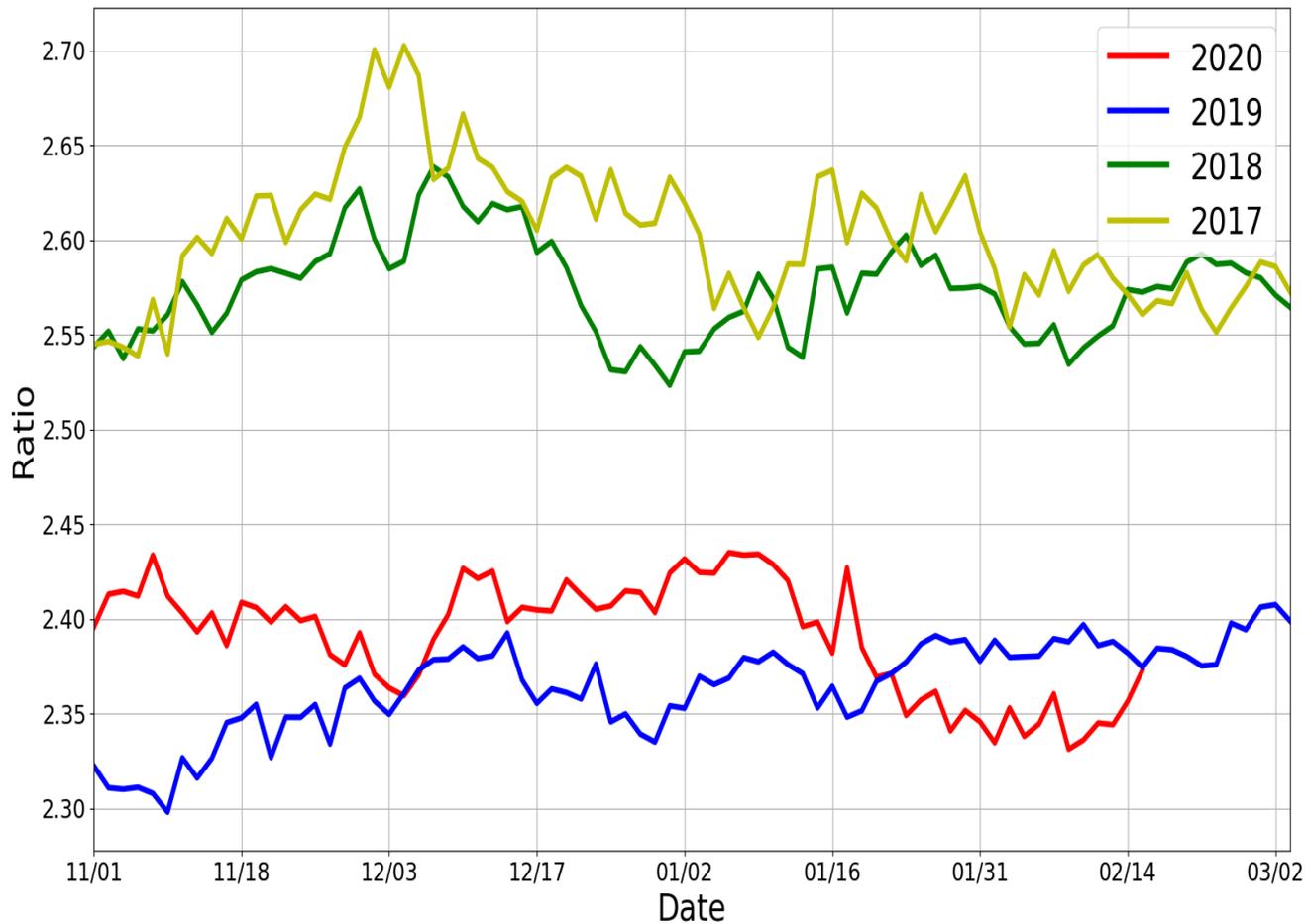


**Continued expansion expected in Brazil's soybean and corn production**



Source: CONAB. 2<sup>nd</sup> Corn assumed to be all corn minus 1<sup>st</sup> crop.

# New crop futures soybean:corn price ratio for 2020 points to a large corn crop, with some basis effects



## Corn and rice prices expected to edge down in 2020/21

Crop	2016	2017	2018	2019	2020F	%Δ
Wheat (\$/bu)	3.89	4.72	5.16	4.55	4.90	8%
Corn (\$/bu)	3.36	3.36	3.61	3.85	3.60	-6%
Soybeans (\$/bu)	9.47	9.33	8.48	8.75	8.80	1%
Cotton (cents/lb)	70.5	68.6	70.3	63.0	64.0	2%
All Rice (\$/cwt)	10.4	12.9	12.6	13.0	12.0	-8%

## Cropland area mostly up from last year

Crop (mil. acres)	2016	2017	2018	2019	2020F	%Δ
Corn	94.0	90.2	88.9	89.7	94.0	5%
Soybeans	83.5	90.2	89.2	76.1	85.0	12%
Wheat	50.1	46.1	47.8	45.2	45.0	0%
Cotton	10.1	12.7	14.1	13.7	12.5	-9%
Other feedgrains	12.6	10.7	11.0	10.8	11.1	3%
Rice	3.2	2.5	2.9	2.5	3.1	21%
<b>Total 8 crops</b>	<b>253.4</b>	<b>252.3</b>	<b>253.9</b>	<b>238.0</b>	<b>250.7</b>	<b>5%</b>
<b>CRP</b>	<b>23.9</b>	<b>23.4</b>	<b>22.6</b>	<b>22.6</b>	<b>22.7</b>	<b>0%</b>
<b>8 crops + CRP</b>	<b>277.3</b>	<b>275.7</b>	<b>276.5</b>	<b>260.6</b>	<b>272.7</b>	<b>5%</b>

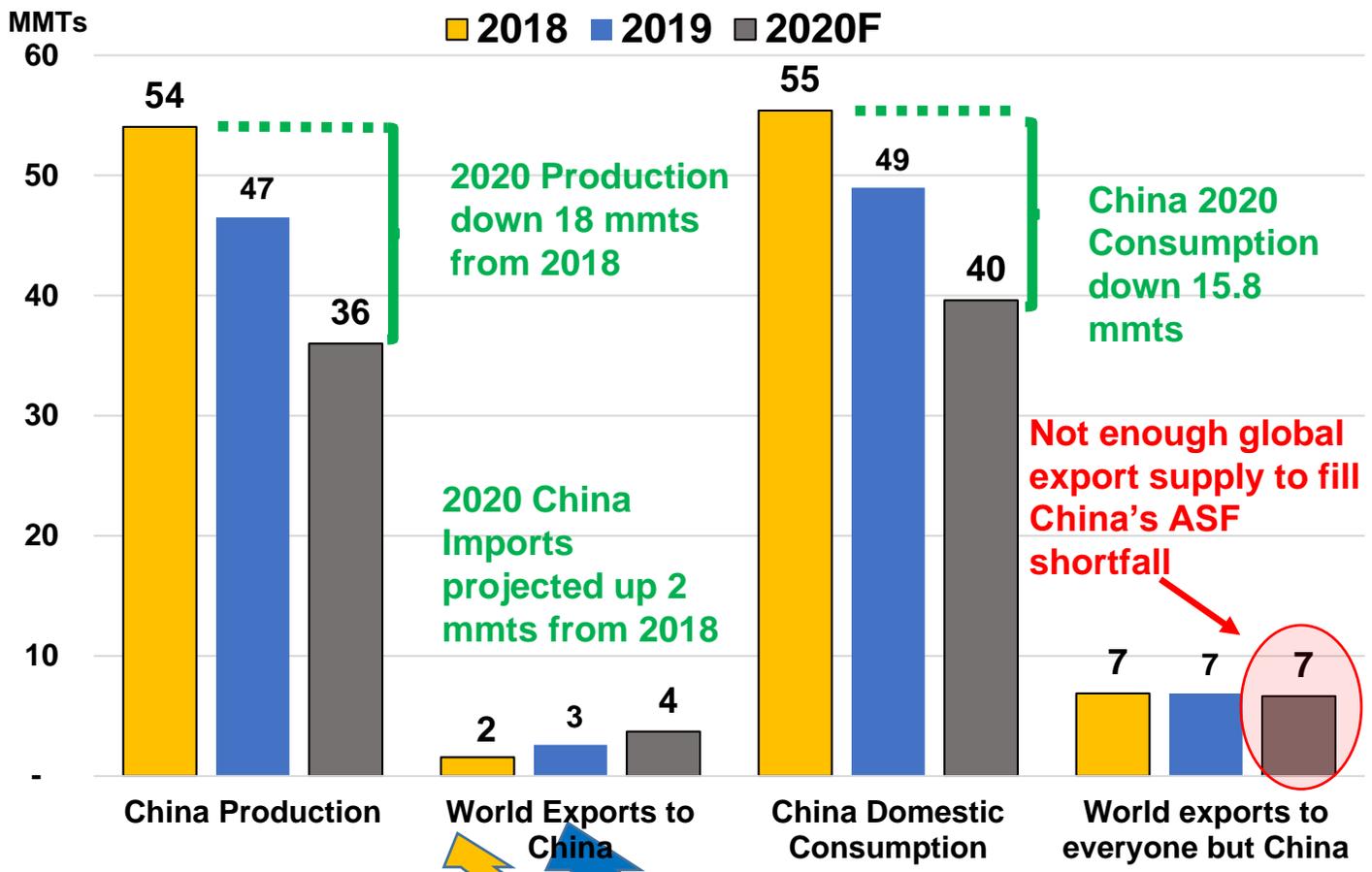
## Record production projected in 2020

Item	2010	Exports as a % of prod.	2019	Exports as a % of prod.	2020F	Exports as a % of prod.
<b>Billion pounds</b>						
Beef	26.3	8.7%	27.2	11.1%	<b>27.5</b>	12.0%
Pork	22.4	18.8%	27.6	22.9%	<b>28.9</b>	25.5%
Broilers	36.9	18.3%	43.9	16.2%	<b>45.8</b>	16.2%
Total <sup>1</sup>	92.1	15.2%	105.2	16.3%	<b>108.8</b>	17.3%
<b>Billion pounds</b>						
Milk <sup>2</sup>	192.9	15.8%	218.3	19.0%	<b>222.0</b>	19.6%

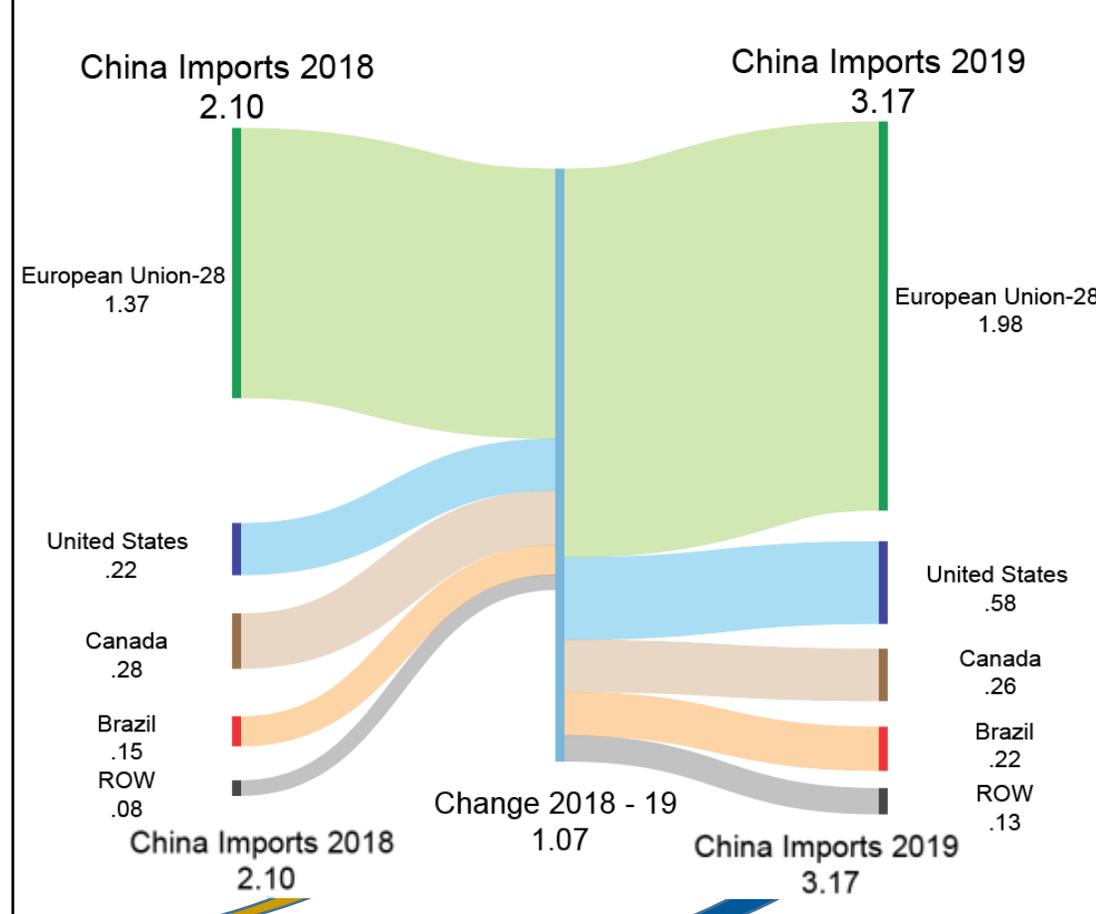
Data in red denote record levels. <sup>1</sup> Total red meat and poultry. <sup>2</sup>Skim-solids basis exports as a percent of total milk production

# African Swine Fever shocks China and global pork supply

### China pork production, supply and demand



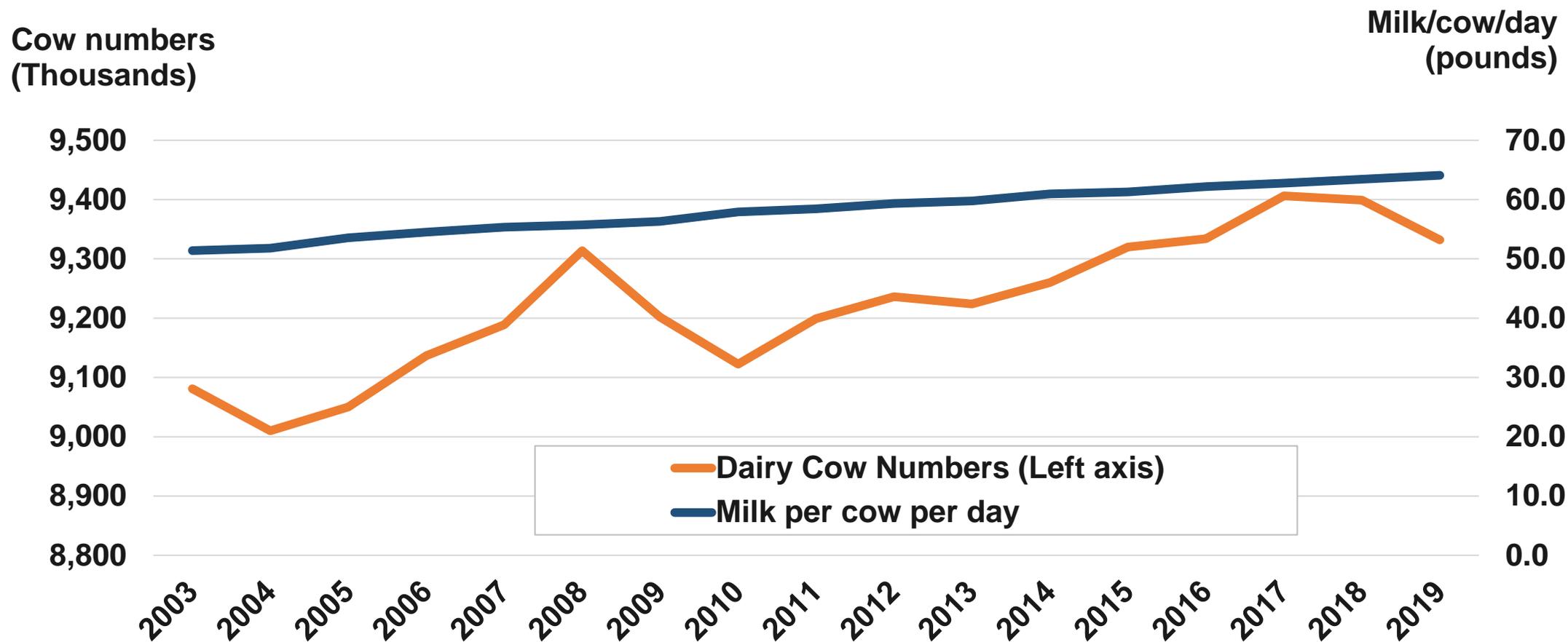
### China 2018 vs 2019 imports (mmts)



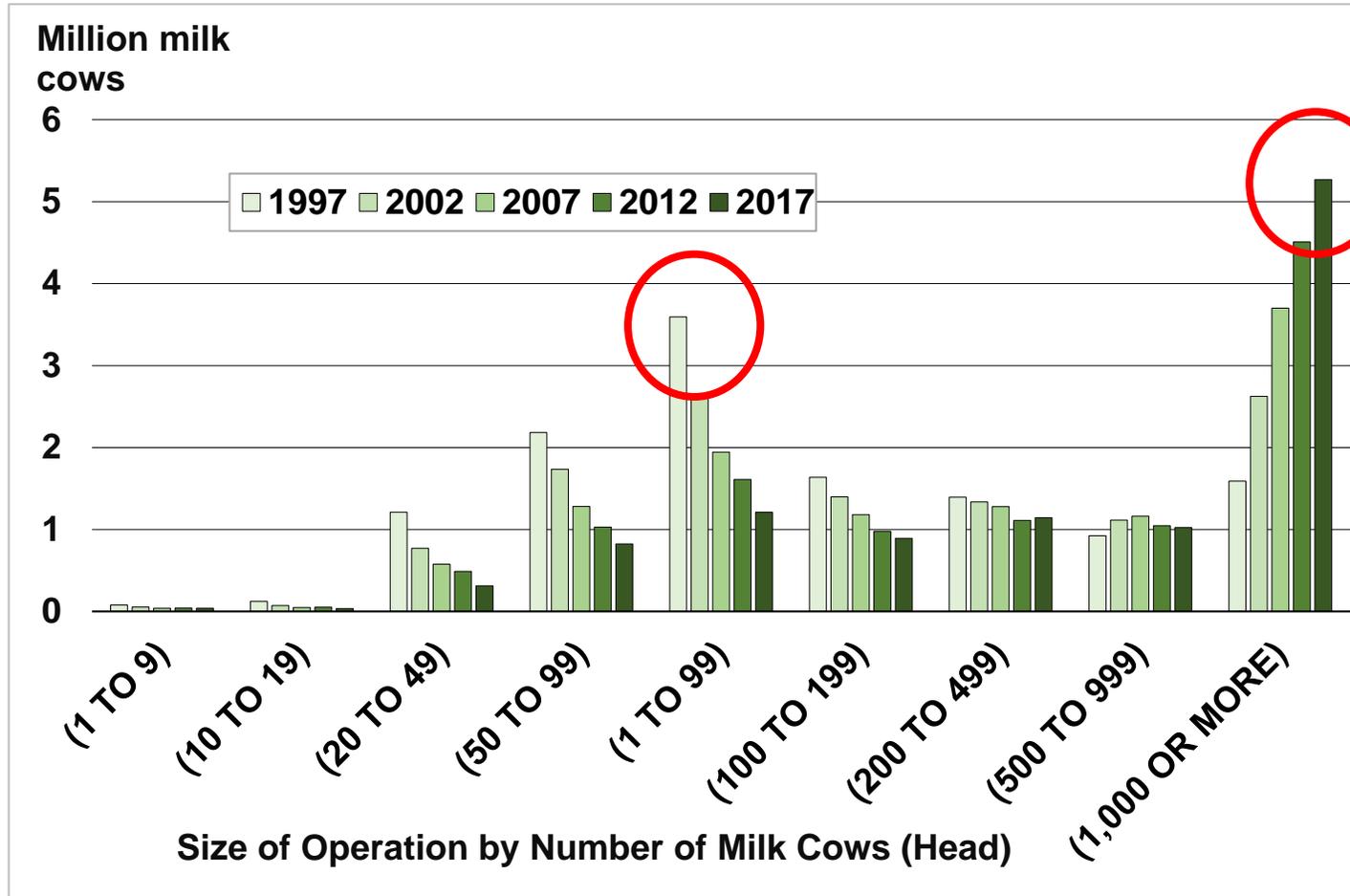
## Prices: hogs, milk up, broilers down; steers largely unchanged

Item	2016	2017	2018	2019	2020F	%Δ
	<b>Dollars per cwt</b>					
<b>Steers</b>	<b>120.86</b>	<b>121.52</b>	<b>117.12</b>	<b>116.78</b>	<b>117.00</b>	<b>0.2%</b>
<b>Hogs</b>	<b>46.16</b>	<b>50.48</b>	<b>45.93</b>	<b>47.95</b>	<b>49.00</b>	<b>2.2%</b>
<b>Broilers</b>	<b>84.3</b>	<b>93.5</b>	<b>97.8</b>	<b>88.6</b>	<b>87.0</b>	<b>-1.8%</b>
<b>Milk</b>	<b>16.30</b>	<b>17.65</b>	<b>16.27</b>	<b>18.60</b>	<b>18.85</b>	<b>1.3%</b>

# Recent milk production increases driven by cow numbers and milk per cow gains



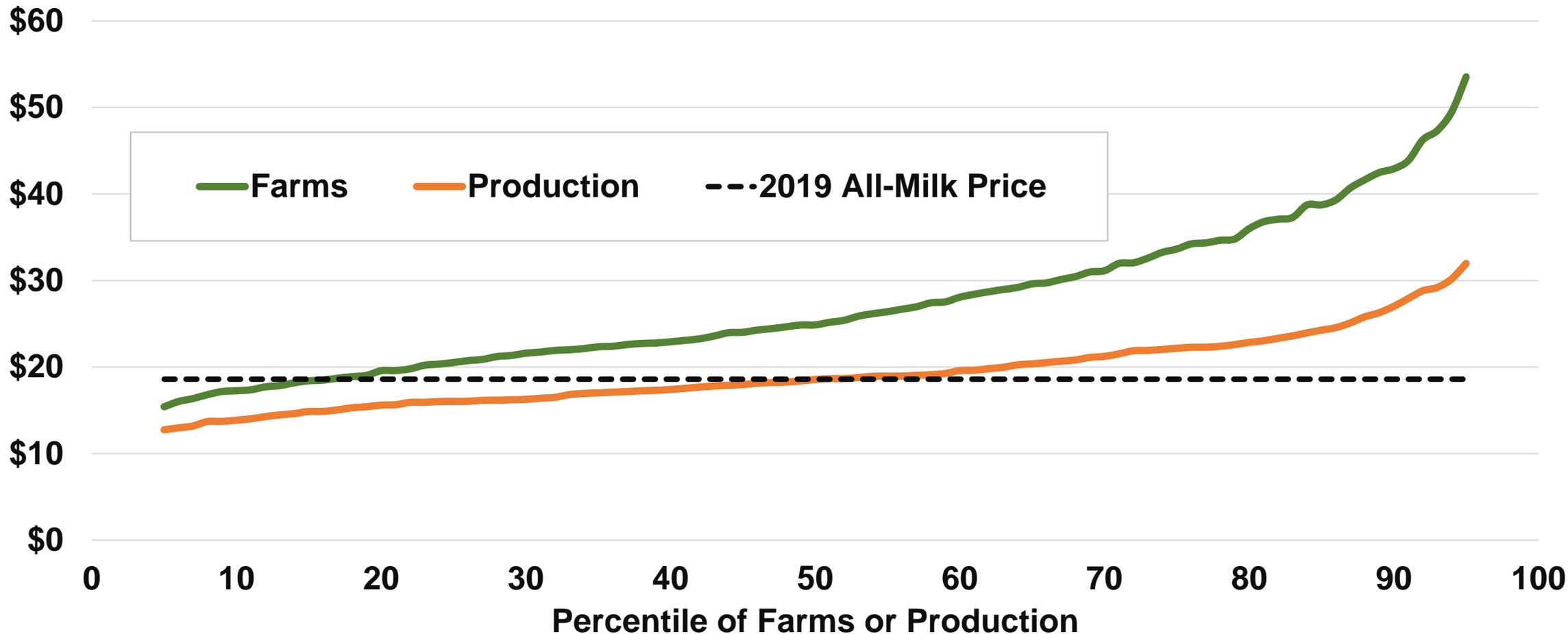
# U.S. Dairy Herd by Size of Operation

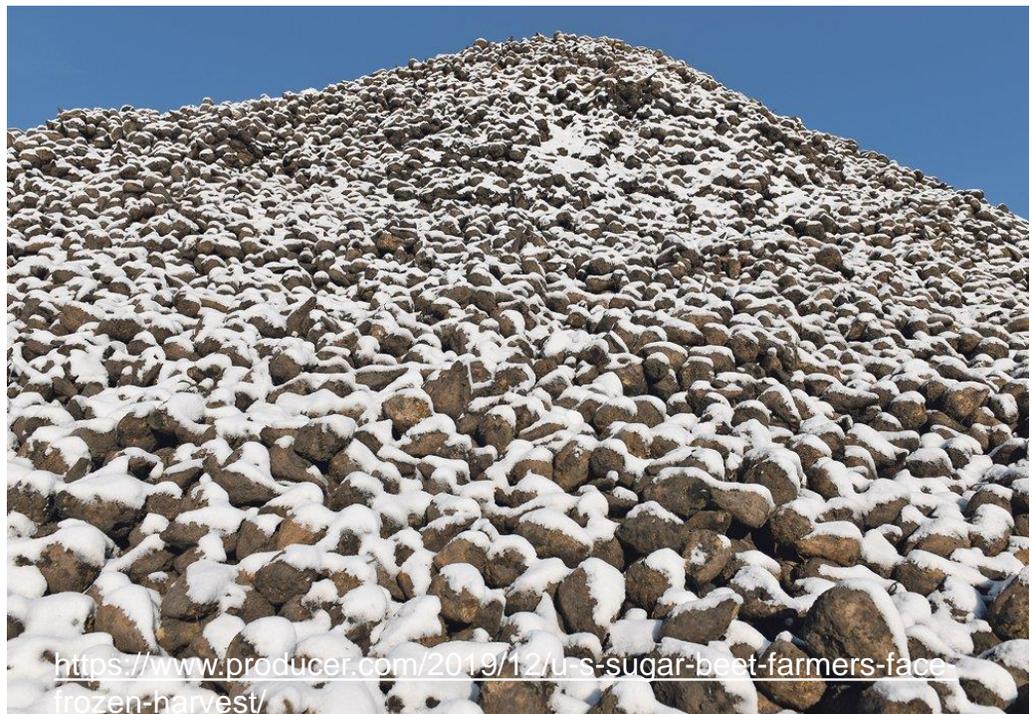


Year	Milk Cow Inventory (millions)	Operations with Inventory (thousands)
1997	9.1	125.0
2002	9.1	92.0
2007	9.3	69.9
2012	9.3	64.1
2017	9.5	54.6

# Distribution of Milk Production Cost by Farm and Production

\$/hundredweight





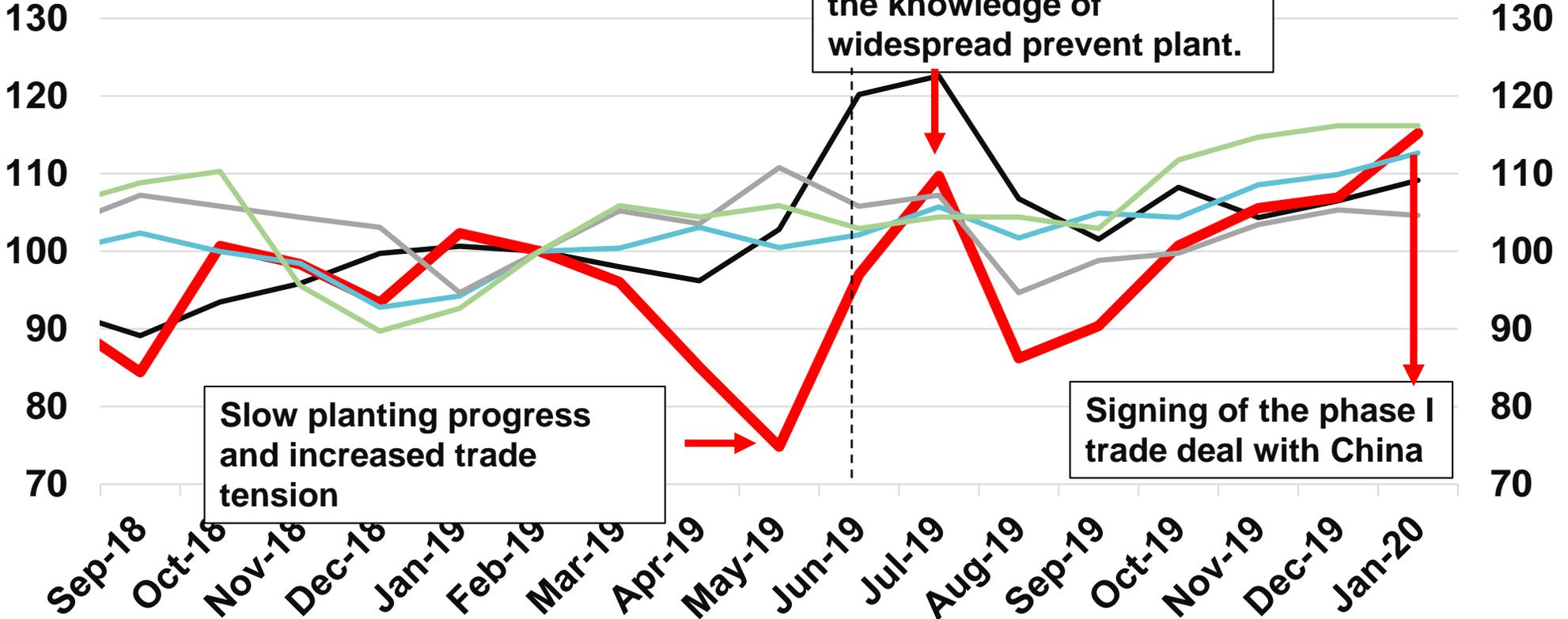
# Farm Economy and Policies



# How optimistic are you about economic prospects over the next 6 months?

Feb 2019 = 100

Feb 2019 = 100



—Corn Price

—Agbarometer

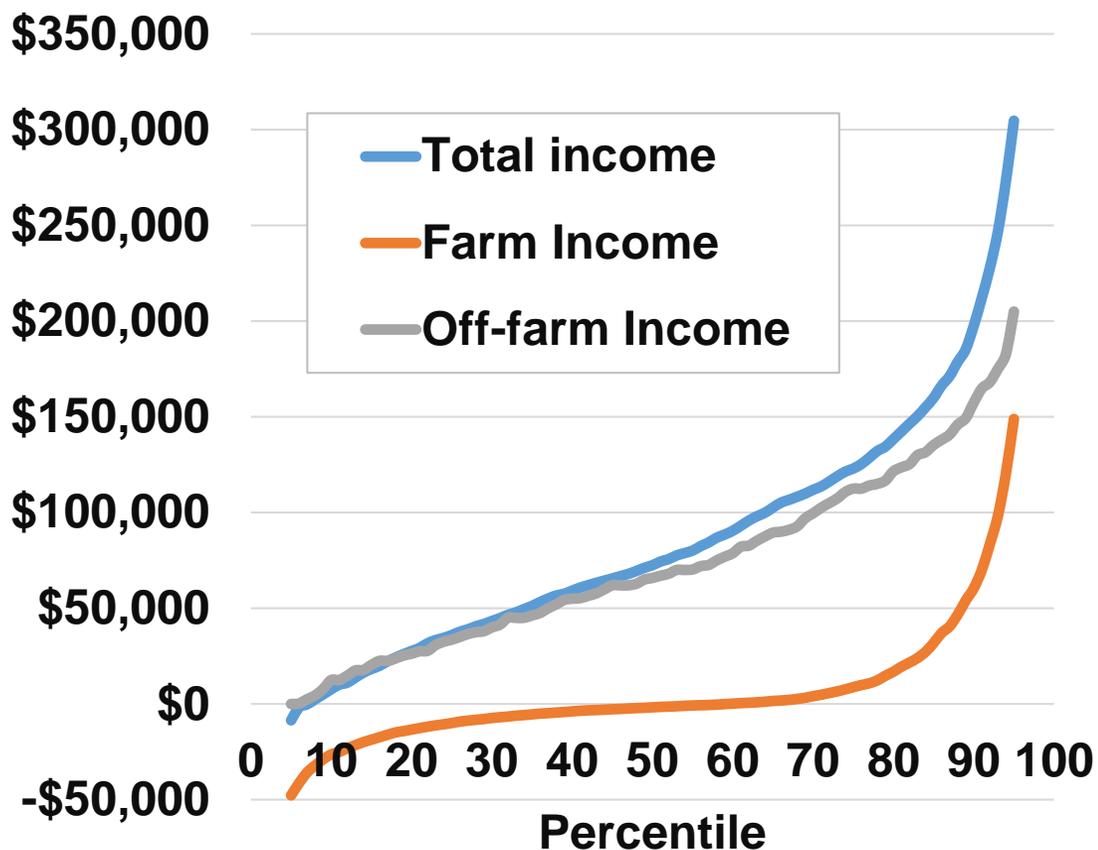
—DJIA

—Consumer Sentiment

—Rural Mainstreet

—Housing Market

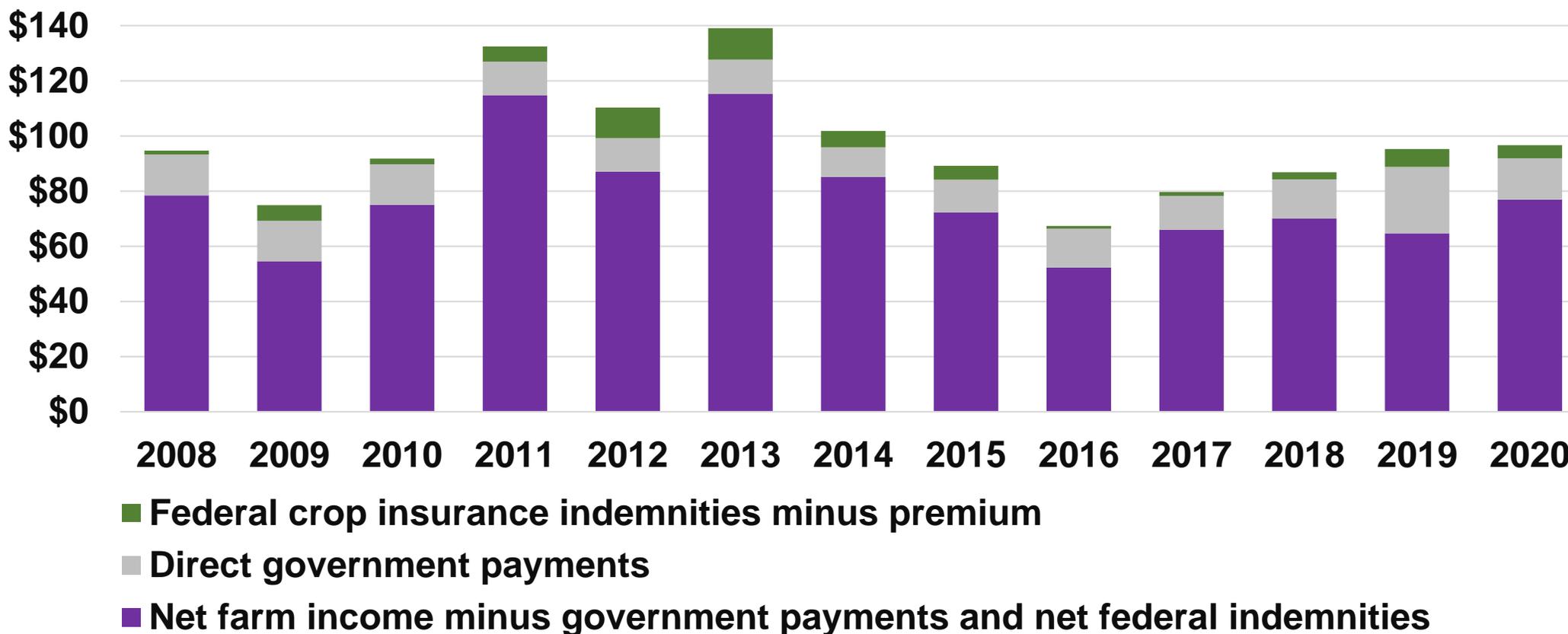
## Distribution of farm household income shows half of all farms earn negative farm income



Percentile	Farm Income	Off-farm Income	Total Income
5	-\$47,714	\$0	-\$8,526
25	-\$9,950	\$33,577	\$35,978
50	-\$1,735	\$65,841	\$72,481
75	\$8,783	\$112,500	\$122,991
95	\$148,850	\$205,000	\$304,715

# Net returns are expected up, with lower expected government payments and crop insurance indemnities

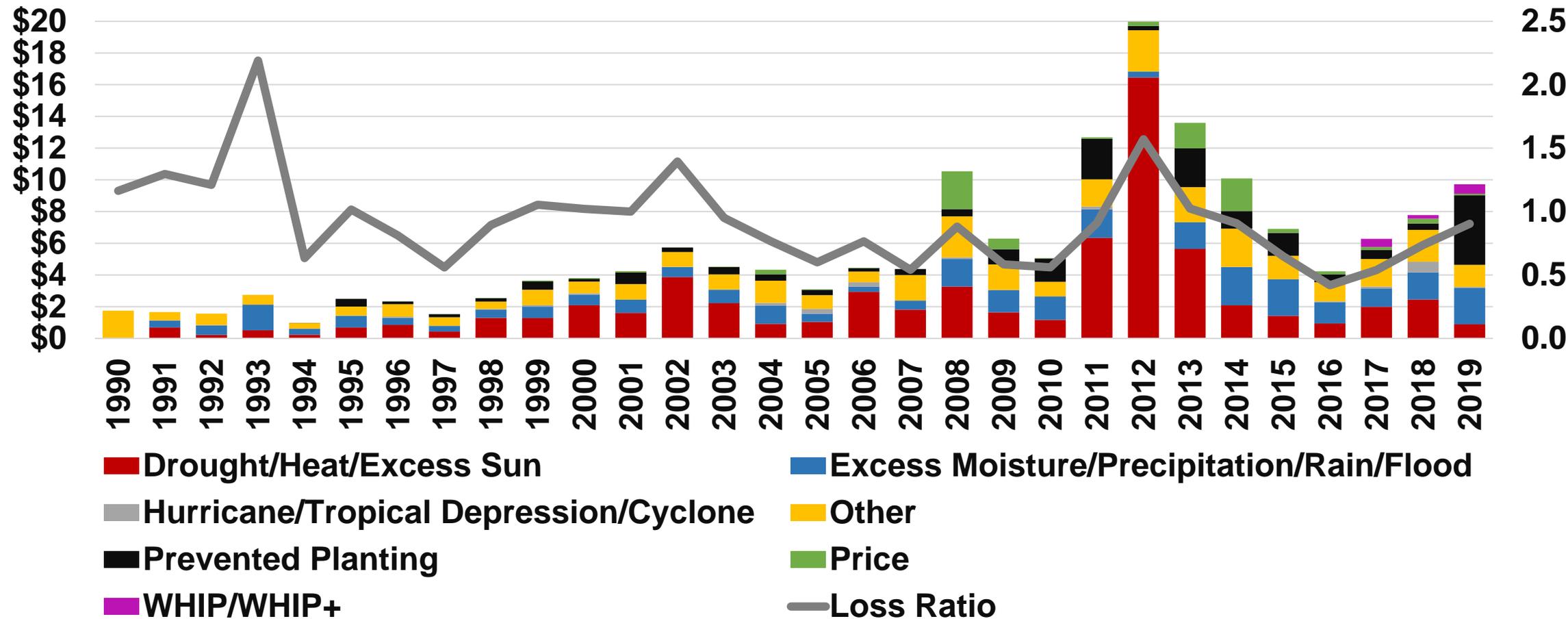
Billion dollars  
(2020\$)



# Prevent plant boosted insurance indemnities in 2019 by > \$4 billion

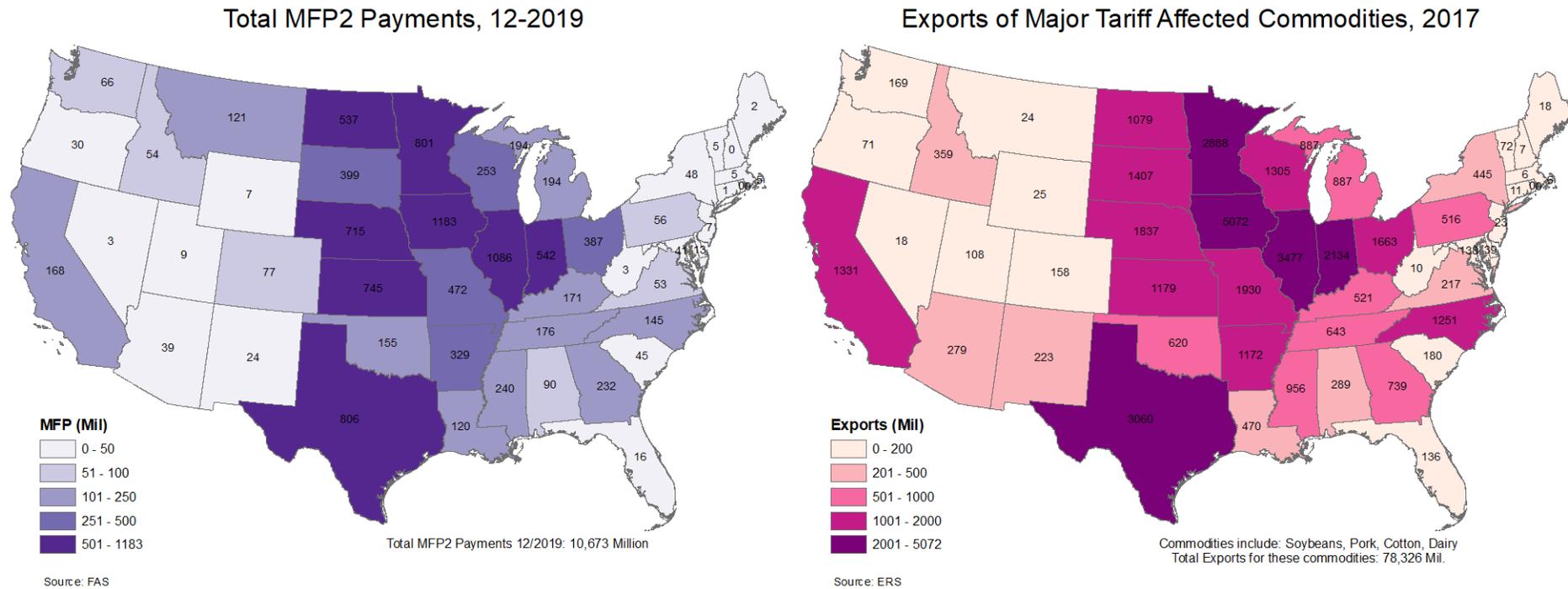
Billion dollars  
(2020\$)

Loss Ratio



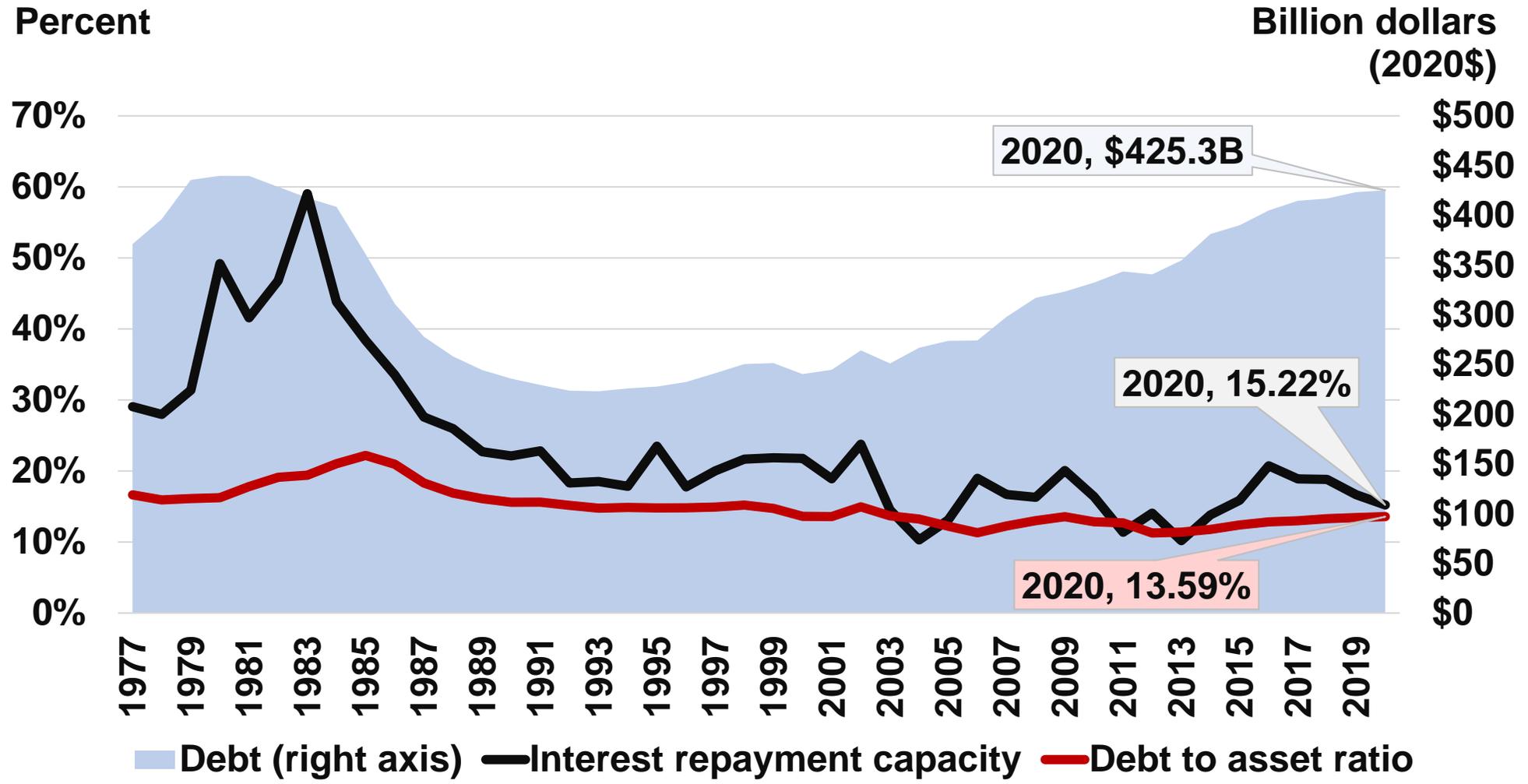
\* 2019 data collection is still ongoing.

# MFP payments overlap areas where estimated damages are the highest

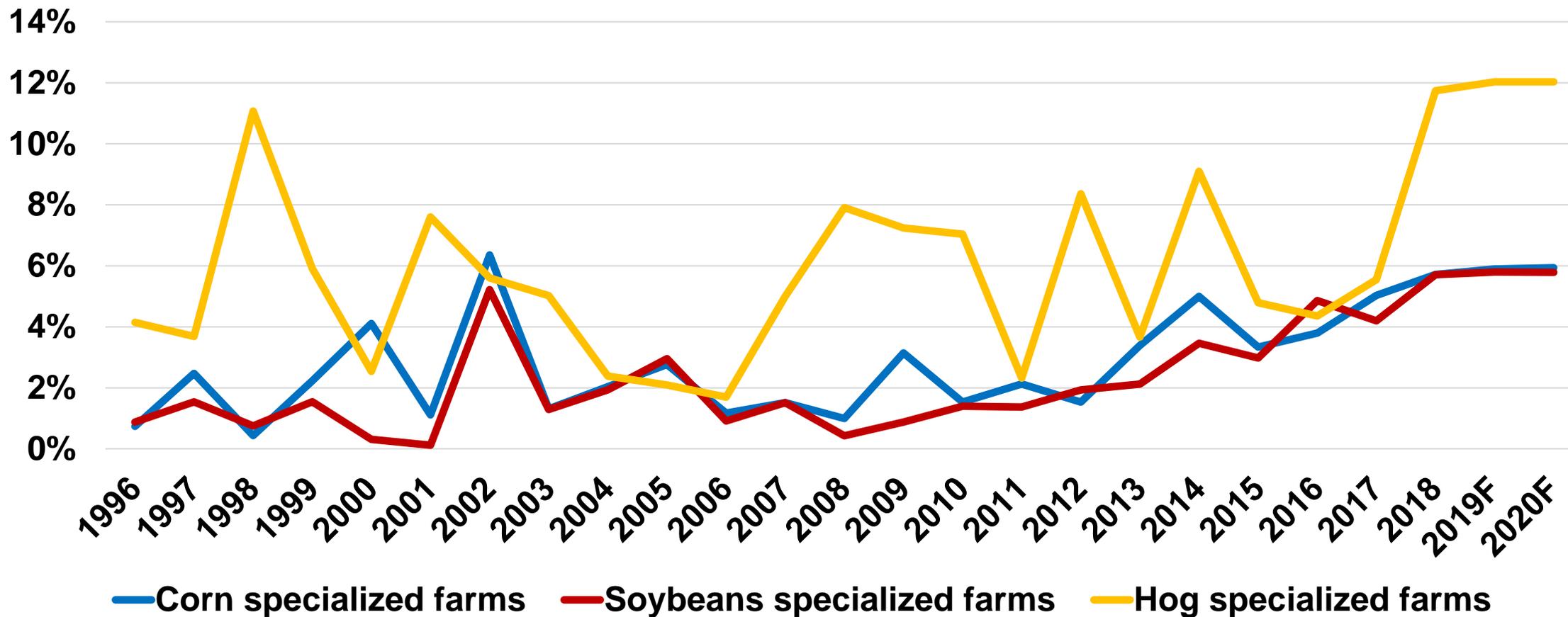


# Debt-to-assets ratio remain low --- 13.59%, and debt financing cost falling despite total debt at historic levels

“Interest repayment capacity” = Interest Expenses divided by (NFI before interest and taxes)

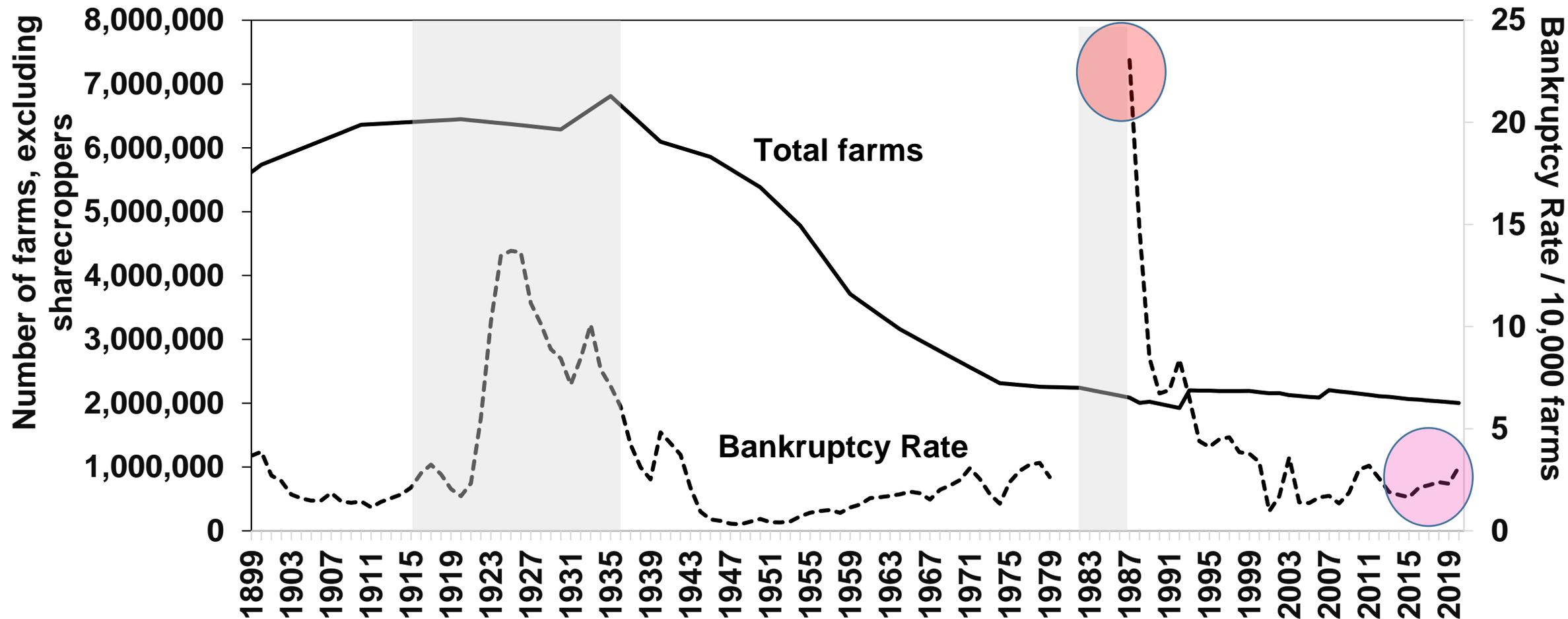


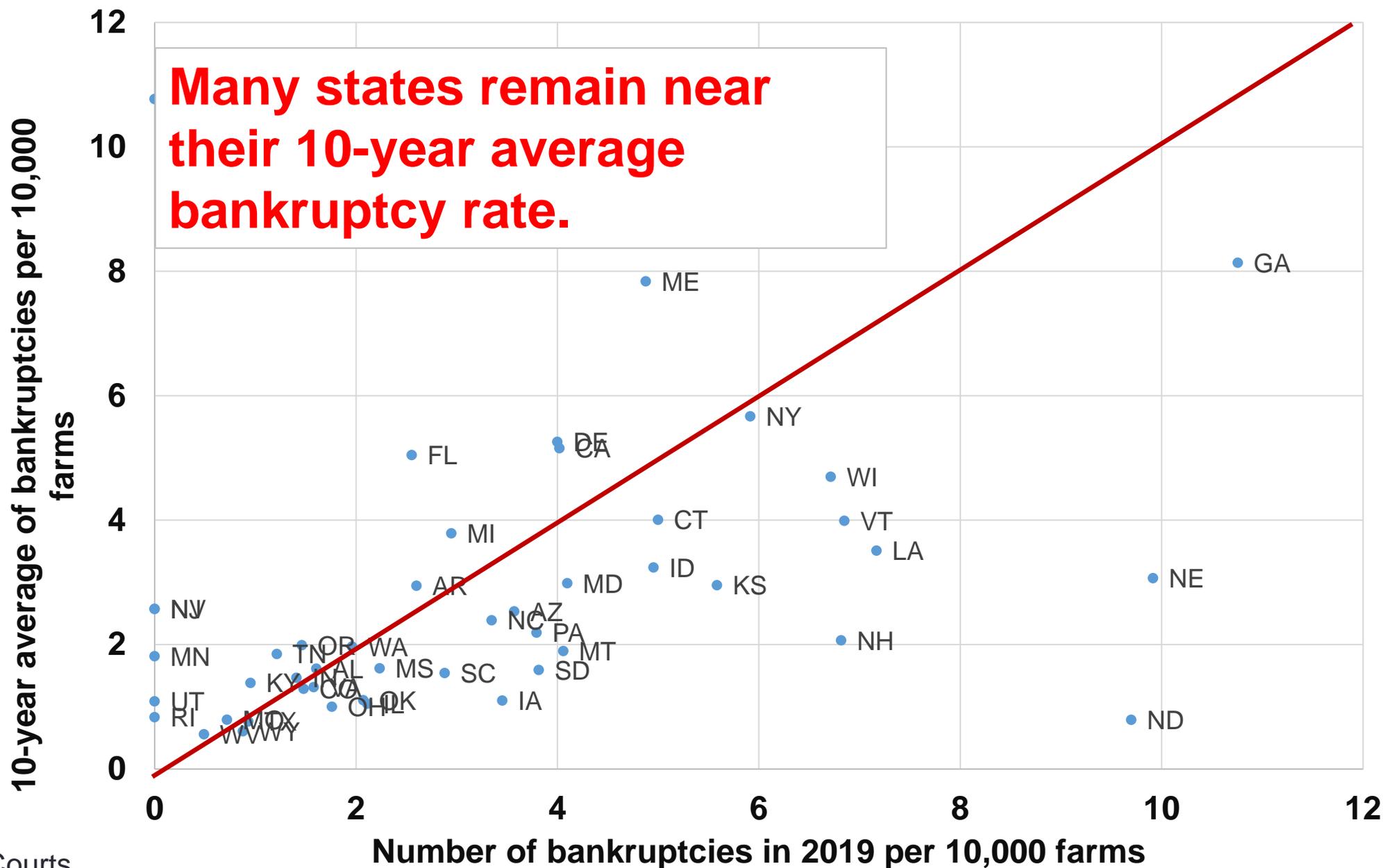
## The percentage of corn, soybean, and hog farm businesses that are very highly leveraged has been trending upward



Data: USDA-ERS. Note: very highly leveraged farms have debt to asset ratios of >70%.

## Farm bankruptcy rates remain historically low





## Negative returns for some heading into 2020

--- not including government payments

	AR, conventional, furrow irrigation	Central IL, high prod, after soy	Central IL, high prod, after corn	South Central KS, continuous
2020F	Cotton	Corn	Soybeans	Wheat
<b>Market returns:</b>				
Total costs (dollars/acre)	\$952	\$864	\$617	\$271
Value of production (dollars/acre) (includes cottonseed value for cotton)	\$923	\$835	\$540	\$211
<b>Market returns per acre using total costs</b>	<b>(\$28)</b>	<b>(\$29)</b>	<b>(\$77)</b>	<b>(\$60)</b>

Data: Illinois, Arkansas, Kansas extension farm management budgets; MFP for 2019 tranche 3 only.

## Concluding Remarks

- 1. Current conditions point towards an improved outlook for 2020**
  - Trade deals will improve our access and trading opportunities
  - A return to more normal trade will lower friction
- 2. Economic fundamentals are stable**
  - Interest rates remain low and keep borrowing costs down
  - Equity remains high relative to debt
  - Stable land values
- 3. Weather conditions will likely be better**
  - Corn and soybean area likely to be up from 2019

## **Concluding Remarks (con't.)**

### **4. Livestock sector poised for continued growth**

- **Modest growth in beef production, stronger growth in pork and poultry**
- **Growing opportunities for meat exports reflecting the Phase One deal, U.S.-Japan agreement, and global income growth**

### **5. International competition in crop and livestock production is intense**

- **Corn and soybean expansion continues in Brazil**

### **6. U.S. productivity remains remarkably strong**

- **Continued investment in technology and innovation key to maintaining markets and profitably, and feeding a growing global population**

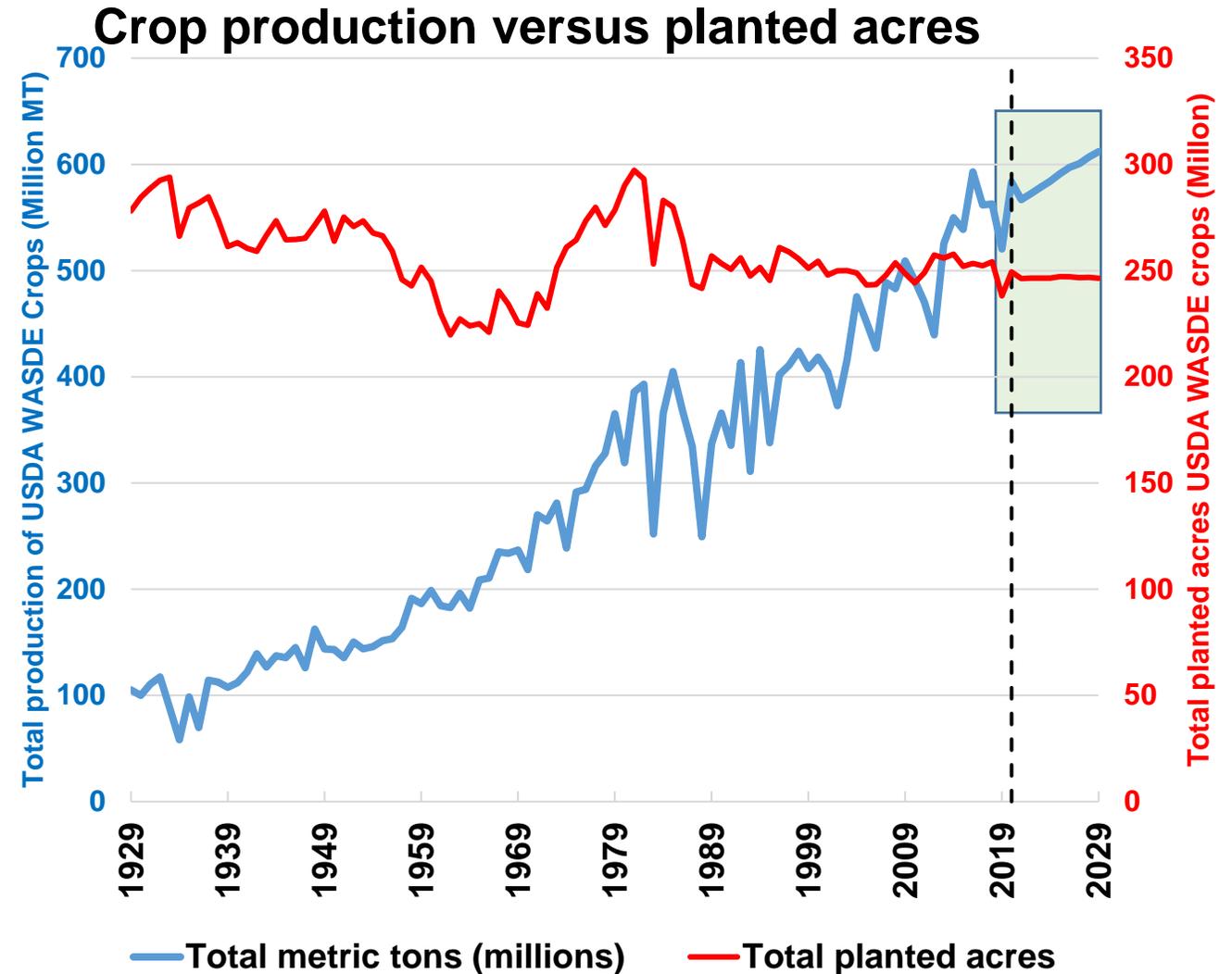
# Expectations for 2029/30?

**Productivity of staple commodities continues to grow, fueled by technology**

In 1929, approximately 6.3 million farms produced 105 million metric tons of crop and fiber, feeding and clothing 121 million Americans.

In 2017, 2.0 million farms produced 561 million metric tons of crops --- an increase of more than 400% on 9% fewer acres, feeding and clothing 330 million Americans and exporting food and fiber to help feed and clothe billions globally.

And over the next 10 years, we would expect an additional 90 million tons of production.



Data: USDA-NASS; USDA Baseline.

Note: USDA WASDE crops included in the chart are wheat, corn, sorghum, barley, oats, rice, soybeans, and cotton.

The number of undernourished people in the world still number more than 800 million, and is heading in the wrong direction

	Number of undernourished (millions)					
	2005	2010	2015	2016	2017	2018 <sup>a</sup>
<b>WORLD</b>	947.2	822.3	785.4	796.5	811.7	821.6
<b>AFRICA</b>	196.0	199.8	217.9	234.6	248.6	256.1
Northern Africa	9.7	8.5	15.5	16.1	16.5	17.0
Sub-Saharan Africa	176.7	180.6	202.4	218.5	232.1	239.1
Eastern Africa	113.5	118.6	119.3	126.9	129.8	133.1
Middle Africa	36.2	36.5	37.9	41.1	43.2	44.6
Southern Africa	3.6	4.2	5.0	5.5	5.4	5.3
Western Africa	33.0	31.9	40.3	45.0	53.7	56.1
<b>ASIA</b>	688.6	572.1	518.7	512.3	512.4	513.9
Central Asia	6.5	4.6	3.8	3.8	4.0	4.1
Eastern Asia	219.1	178.4	138.1	137.8	138.1	137.0
South-eastern Asia	103.8	75.9	61.9	61.9	61.1	60.6
Southern Asia	339.8	293.1	286.1	278.3	276.4	278.5
Western Asia	19.4	20.1	28.8	30.5	32.7	33.7
Western Asia and Northern Africa	29.1	28.6	44.3	46.6	49.2	50.6
<b>LATIN AMERICA AND THE CARIBBEAN</b>	51.1	40.7	39.1	40.4	41.7	42.5
Caribbean	9.1	8.0	7.7	7.6	7.7	7.8
Latin America	42.1	32.6	31.5	32.9	34.0	34.7
Central America	12.4	11.6	10.9	10.6	10.7	11.0
South America	29.6	21.1	20.6	22.2	23.2	23.7
<b>OCEANIA</b>	1.8	1.9	2.3	2.4	2.5	2.6
<b>NORTHERN AMERICA AND EUROPE</b>	n.r.	n.r.	n.r.	n.r.	n.r.	n.r.