

# 2020 Agricultural Markets and Policy Issues

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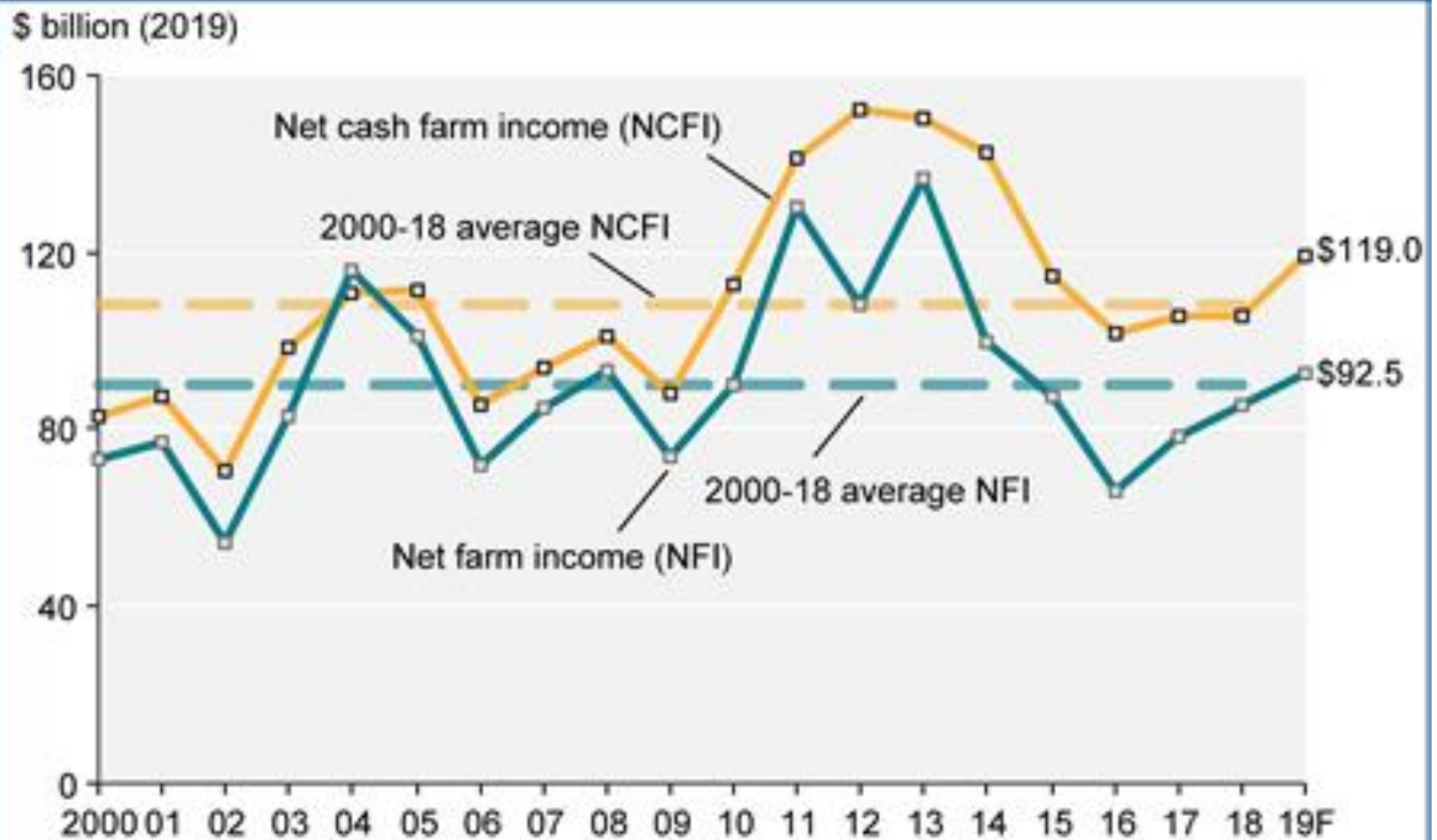
**Dyson School of Applied Economics and Management**

**Cornell University**

# Topics for Today

- US Farm Income
- Dairy Market Situation
- Trade Agreements and Implications
- Climate change and policy response

# Net farm income and net cash farm income, 2000-19F



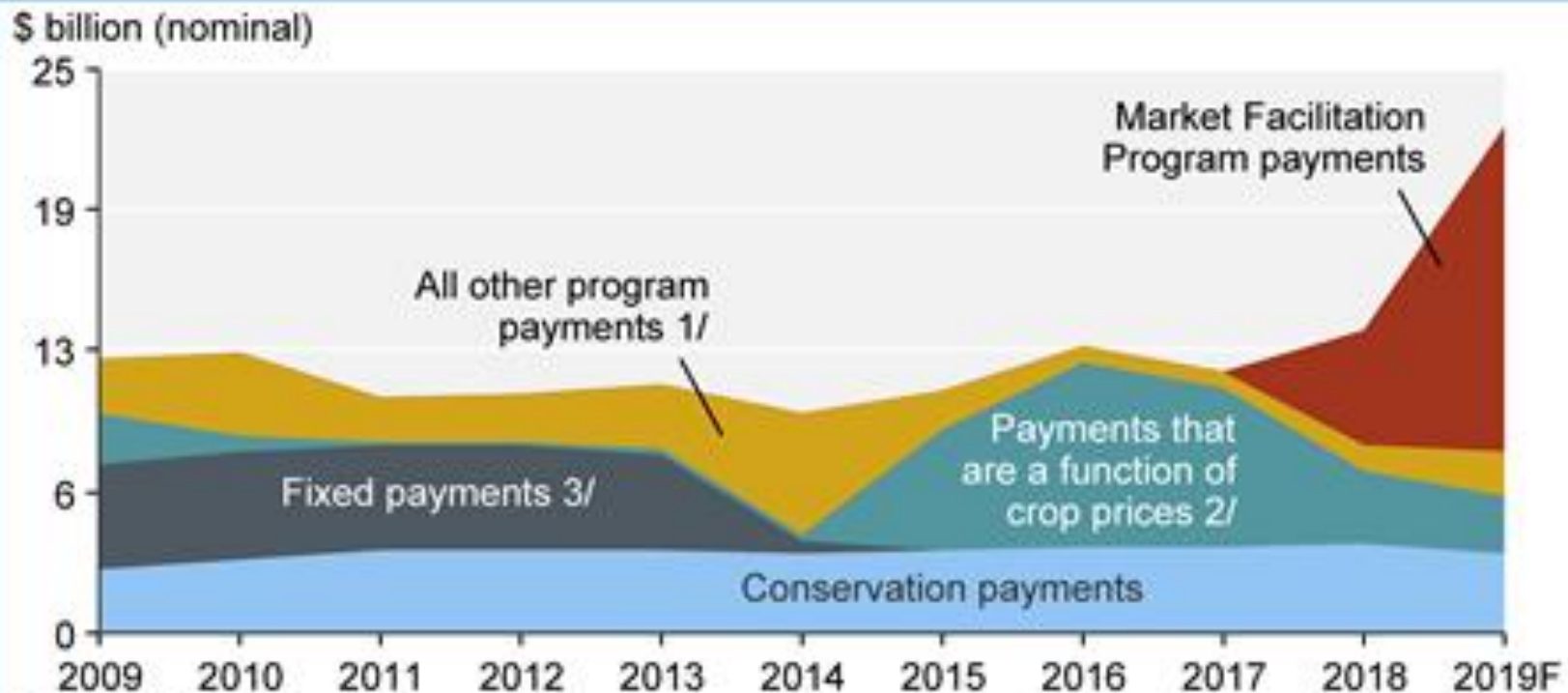
Note: F = forecast. Values are adjusted for inflation using the chain-type GDP deflator, 2019=100.

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics. Data as of November 27, 2019.

# 3 Factors Drove 2019 US Farm Income

1. Abundant domestic and international supplies of grains and oilseeds contributed to a fifth straight year of weak commodity prices in 2019
2. Adverse weather conditions during spring planting and fall harvesting contributed to market uncertainty regarding the size of the 2019 corn and soybean crops
3. The U.S.-China trade dispute led to declines in U.S. exports to China and added to market uncertainty

# Government farm program payments to farm producers, 2009-19F



Note: F = forecast.

1/ All other payments include supplemental and ad hoc disaster assistance, tobacco transition, Cotton Ginning Cost Share, dairy, and miscellaneous programs.

2/ Includes Price Loss Coverage (PLC), Agriculture Risk Coverage (ARC), counter-cyclical payments (CCP), Average Crop Revenue Election (ACRE) payments, loan deficiency payments (excluding grazeout payments), marketing loan gains, and certificate exchange gains. CCP and ACRE were not continued in the 2014 Farm Bill. PLC and ARC payments began in 2015.

3/ Includes direct fixed payments portion of Direct and Counter-Cyclical Program (DCP) and Cotton Transition Assistance Program (CTAP) payments (in 2014/15).

Source: USDA, Economic Research Service, Farm Income and Wealth Statistics.

Data as of November 27, 2019.

# Cornell Dairy Farm Business Analysis Summary

	2012	2013	2014	2015	2016	2017	2018
Profitability				%			
<b>ROA</b>	<b>6.1</b>	<b>7.9</b>	<b>14.1</b>	<b>1.2</b>	<b>1.3</b>	<b>3.6</b>	<b>1.3</b>
Solvency				%			
<b>D/A</b>	<b>32</b>	<b>31</b>	<b>28</b>	<b>31</b>	<b>33</b>	<b>34</b>	<b>36</b>
Liquidity				ratio			
<b>CR</b>	<b>2.46</b>	<b>2.49</b>	<b>3.01</b>	<b>2.42</b>	<b>2.15</b>	<b>2.11</b>	<b>NA</b>

Source: Jason Karszes

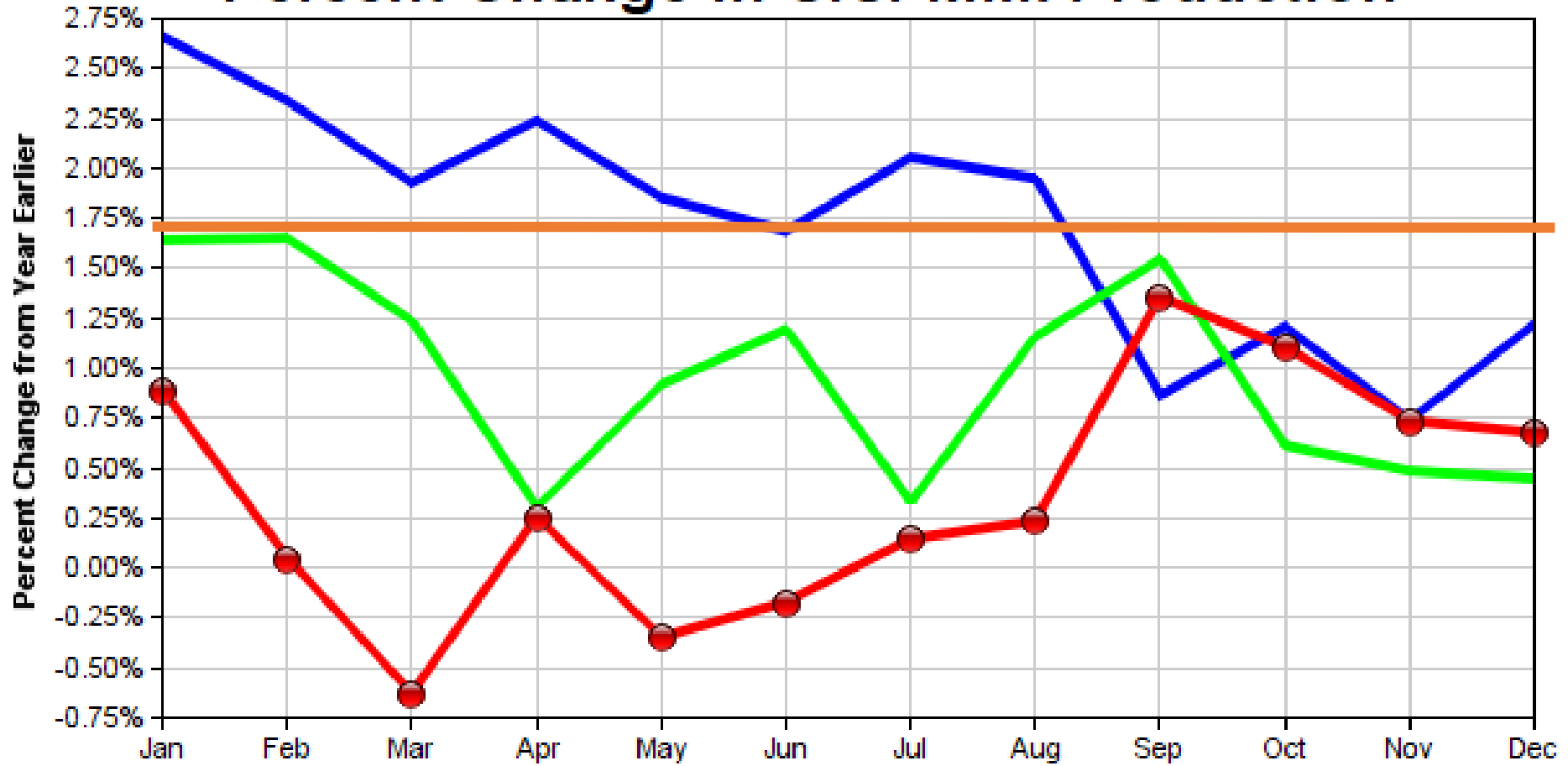


# **Stressed Dairy Farm Profit Margins Past 5 Years**

## **Two issues**

- Low farm milk prices relative to costs and trade issues affecting prices
- Balancing capacity and market adjustment charges in many states and regions

# Percent Change in U.S. Milk Production



2017

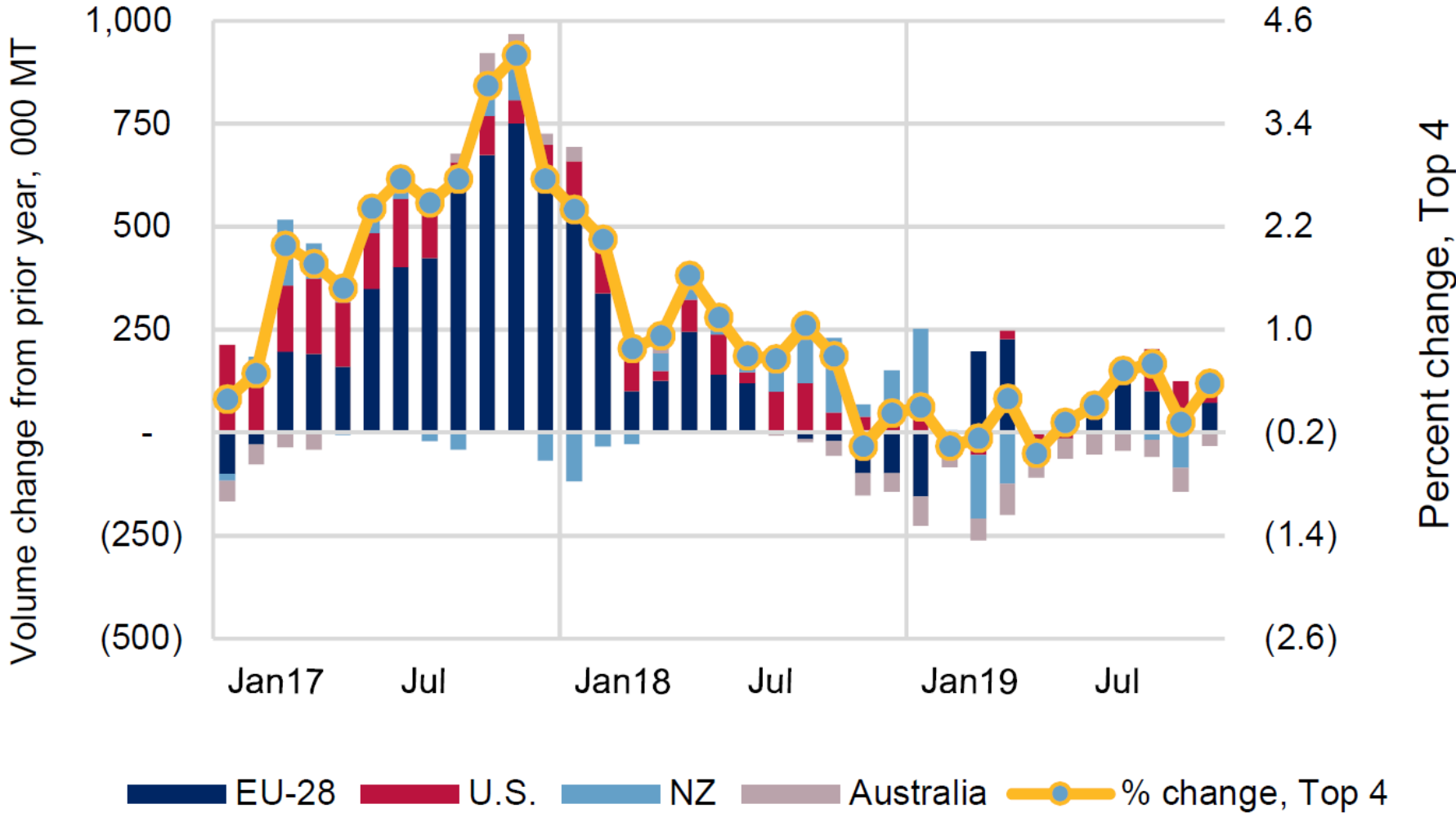
2018

2019

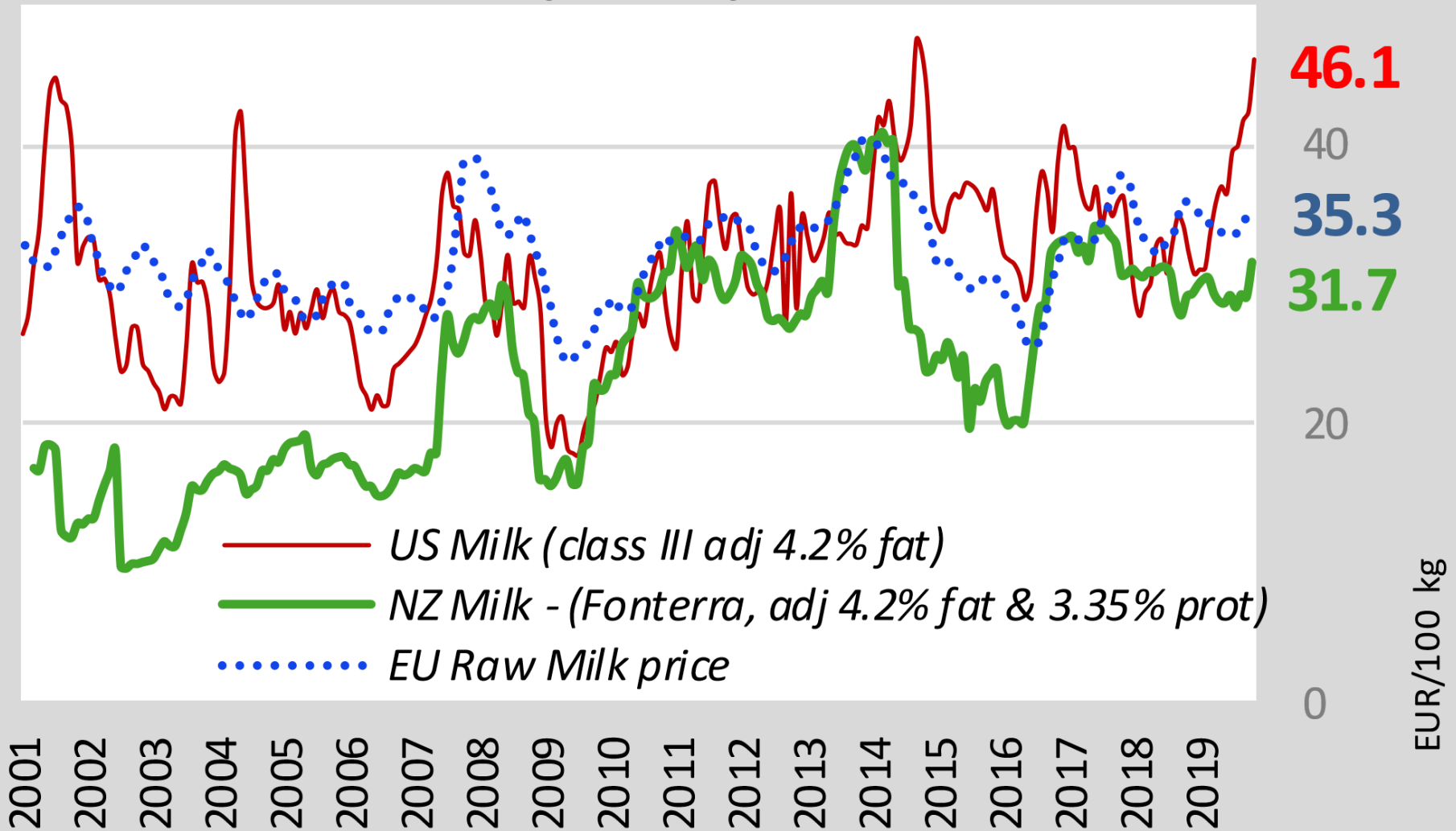
Updated 1/23/20



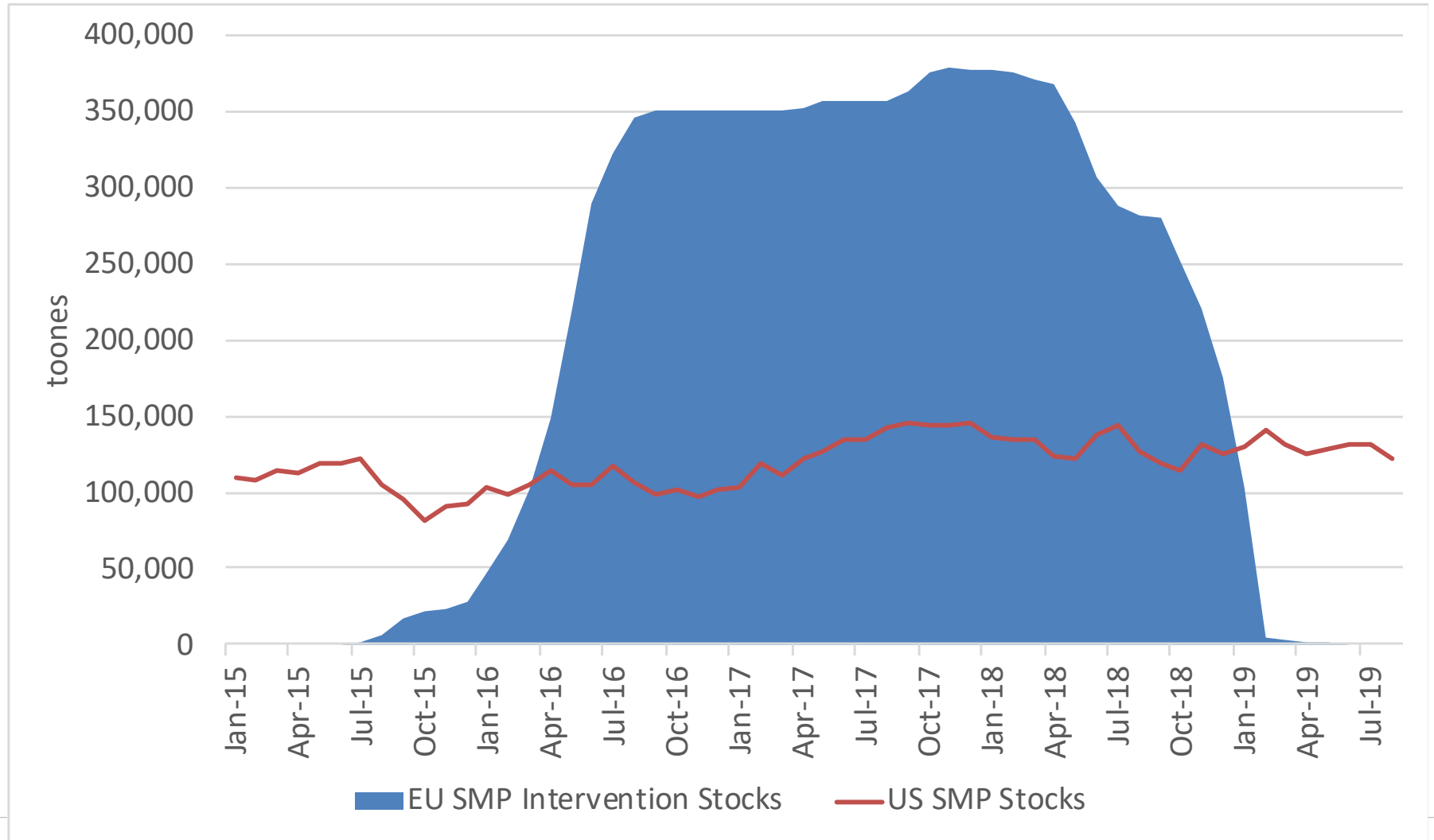
# Milk Production Change from Prior Year, Top 4 Global Suppliers



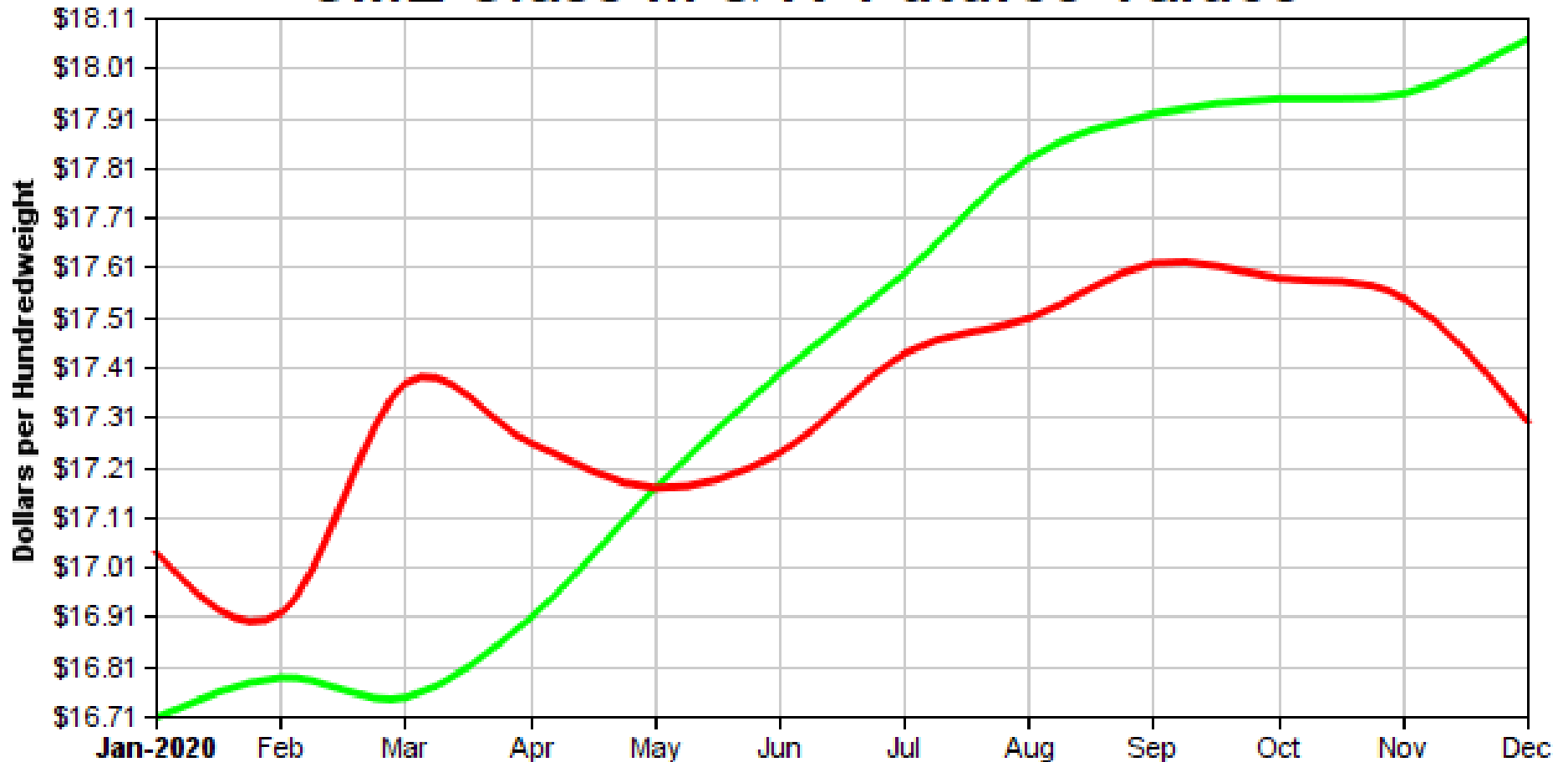
# US, NZ and EU milk prices up to November 2019



# EU Intervention Stocks Overhung Markets in 2016-18



# CME Class III & IV Futures Values



■ Class III Futures

■ Class IV Futures

*Updated 2/3/20*

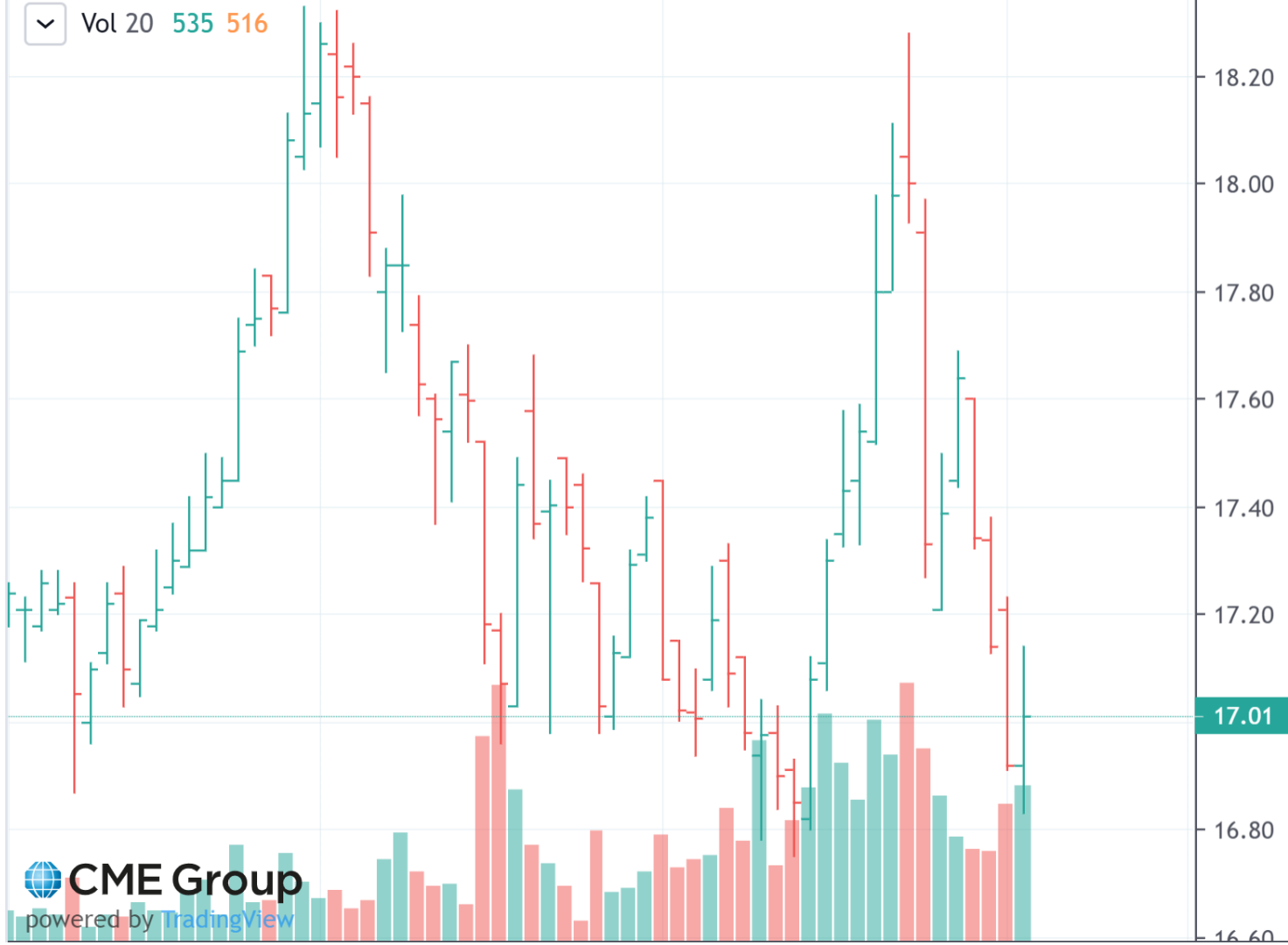
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# MILK, CLASS III FUTURES (FEB 2020) · D · CME

O16.92 H17.14 L16.83 C17.01 +0.09 (+0.53%)

Vol 20 535 516



CME Group  
powered by TradingView

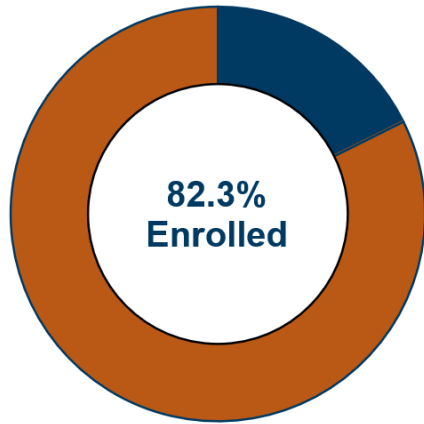
# Ag Related Policy 2020

- Farm Bill 2019-2023
  - Dairy Margin Coverage Program
- Trade issues and market facilitation payments

# Dairy Margin Coverage (DMC) Program Information

Data updated on December 16, 2019 (updated weekly)

## Overview



More than four fifths of all operations with established production history are enrolled

The **23,255 operations** enrolled in DMC are expected to receive

**\$310,389,966**

in payments

on average,

**\$13,347\***

are to be paid per operation

## Detail Pane

Data for: **New York**

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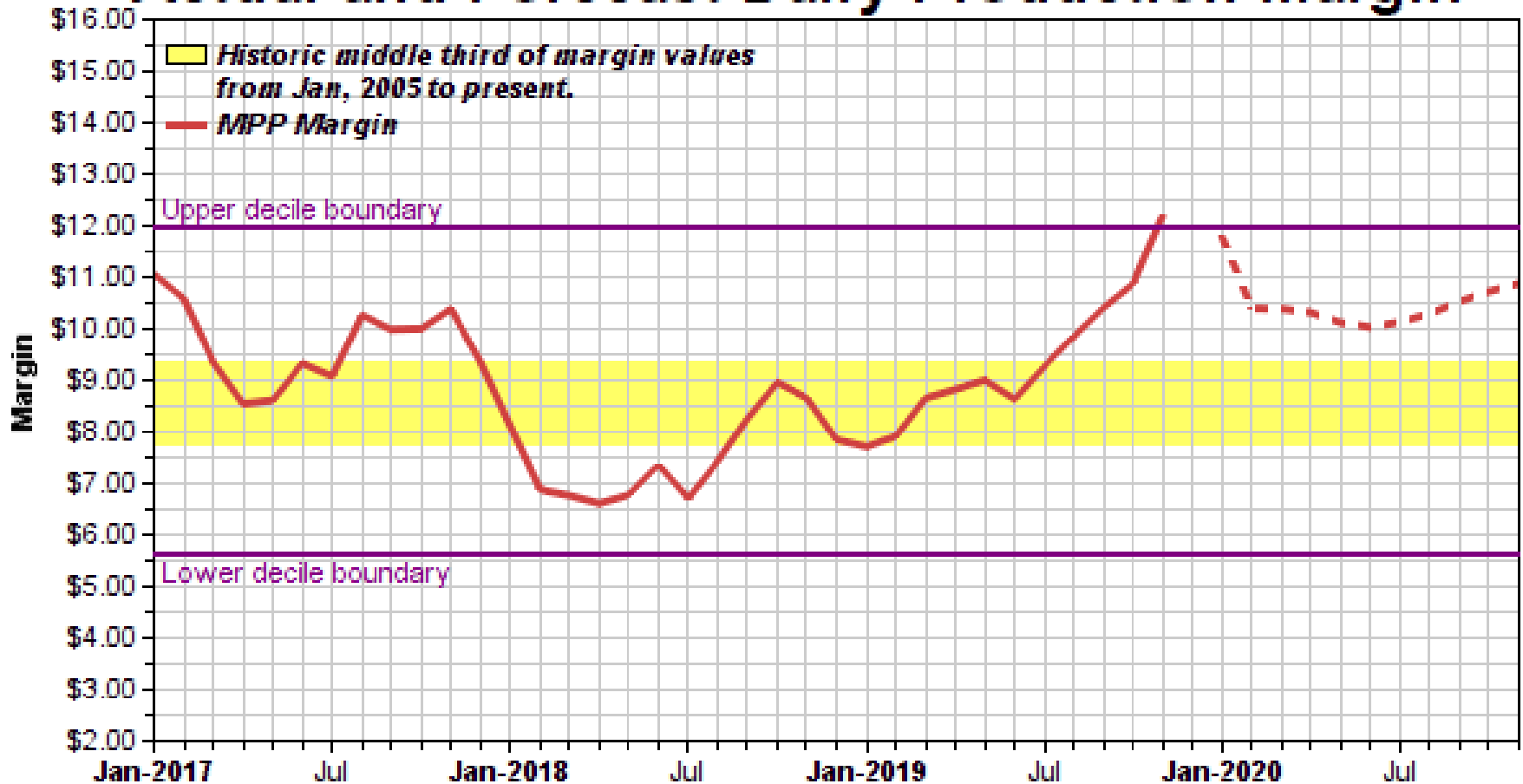
Total Payments	<b>\$28,331,823</b>
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Average Payment per Operation	<b>\$11,456.46</b>
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# Actual and Forecast Dairy Production Margin

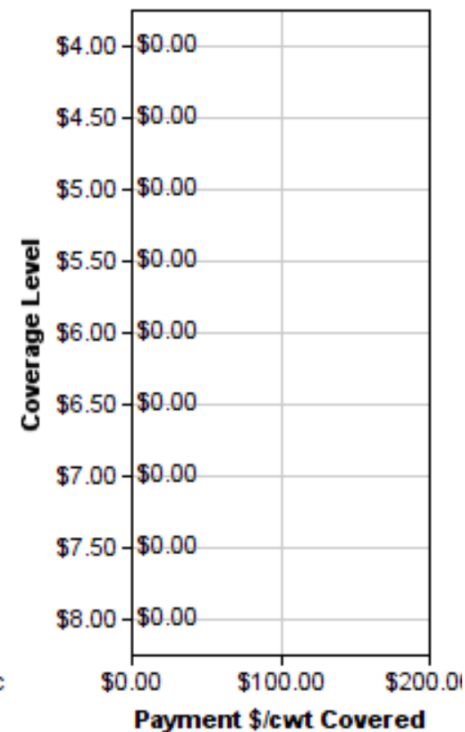
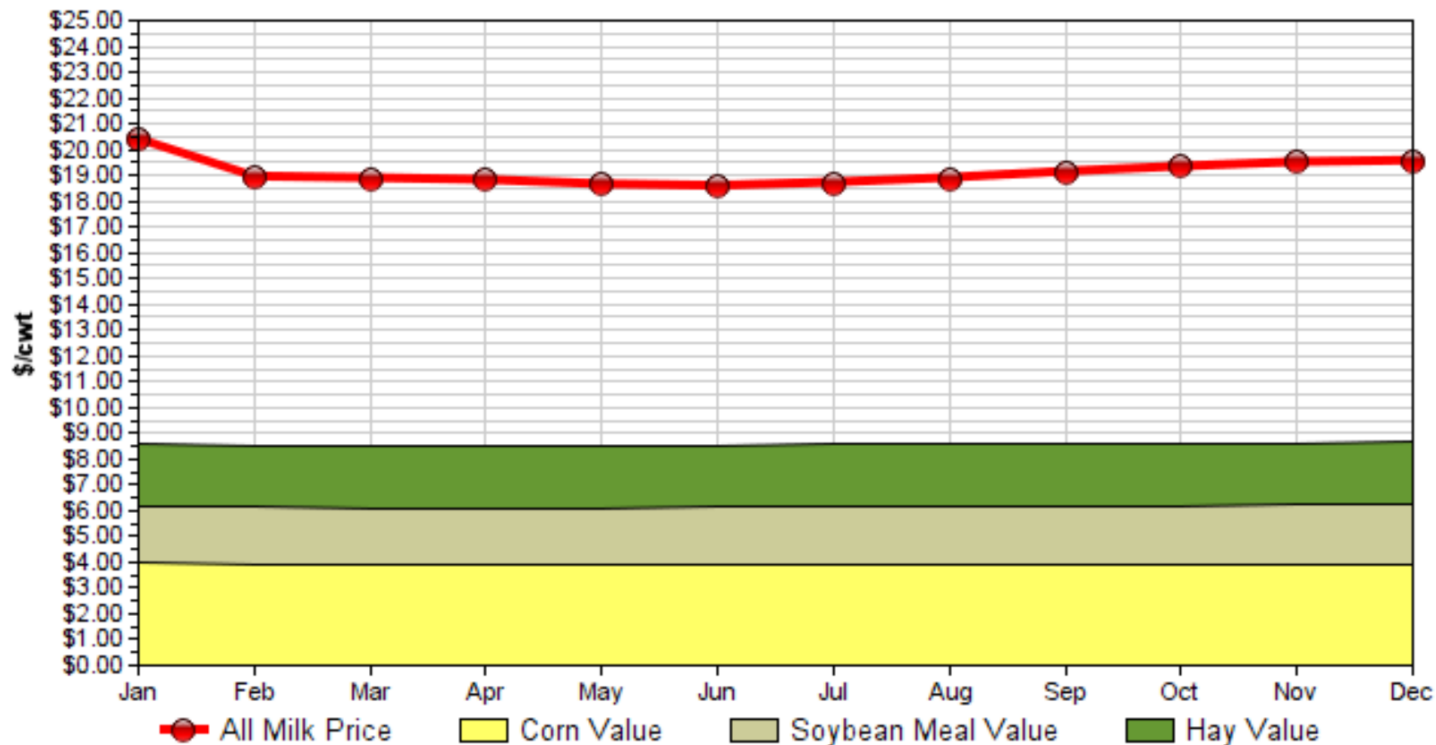


Updated 2/3/20



## 2020 Margin Protection Program

## Annual Avg Payment

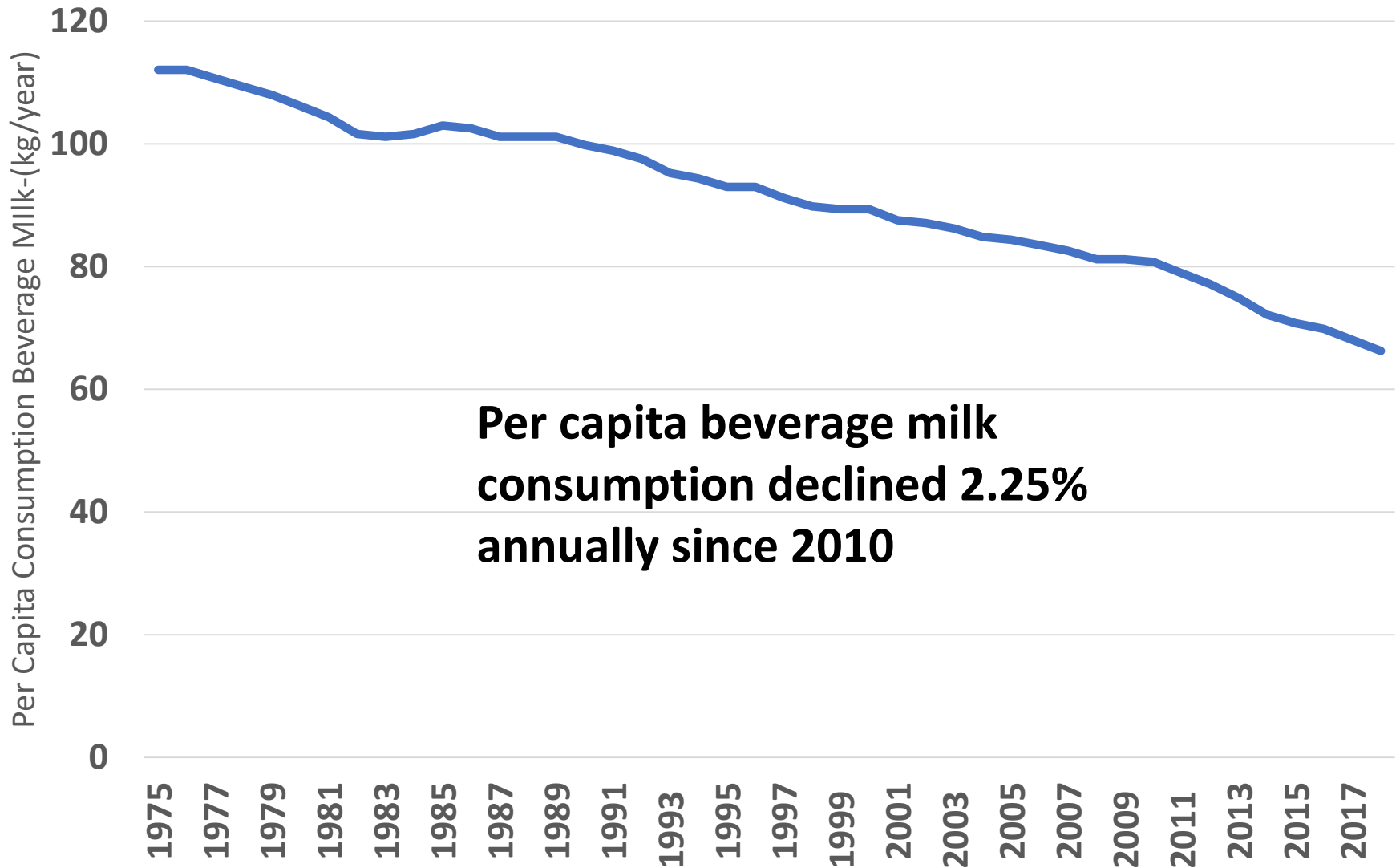


20.38	18.93	18.87	18.80	18.63	18.57	18.70	18.88	19.12	19.32	19.49	19.55
175	176	176	176	175	175	175	174	174	174	174	175
300	300	297	298	300	303	306	308	310	311	312	314
3.71	3.66	3.63	3.62	3.63	3.64	3.65	3.66	3.66	3.65	3.66	3.67

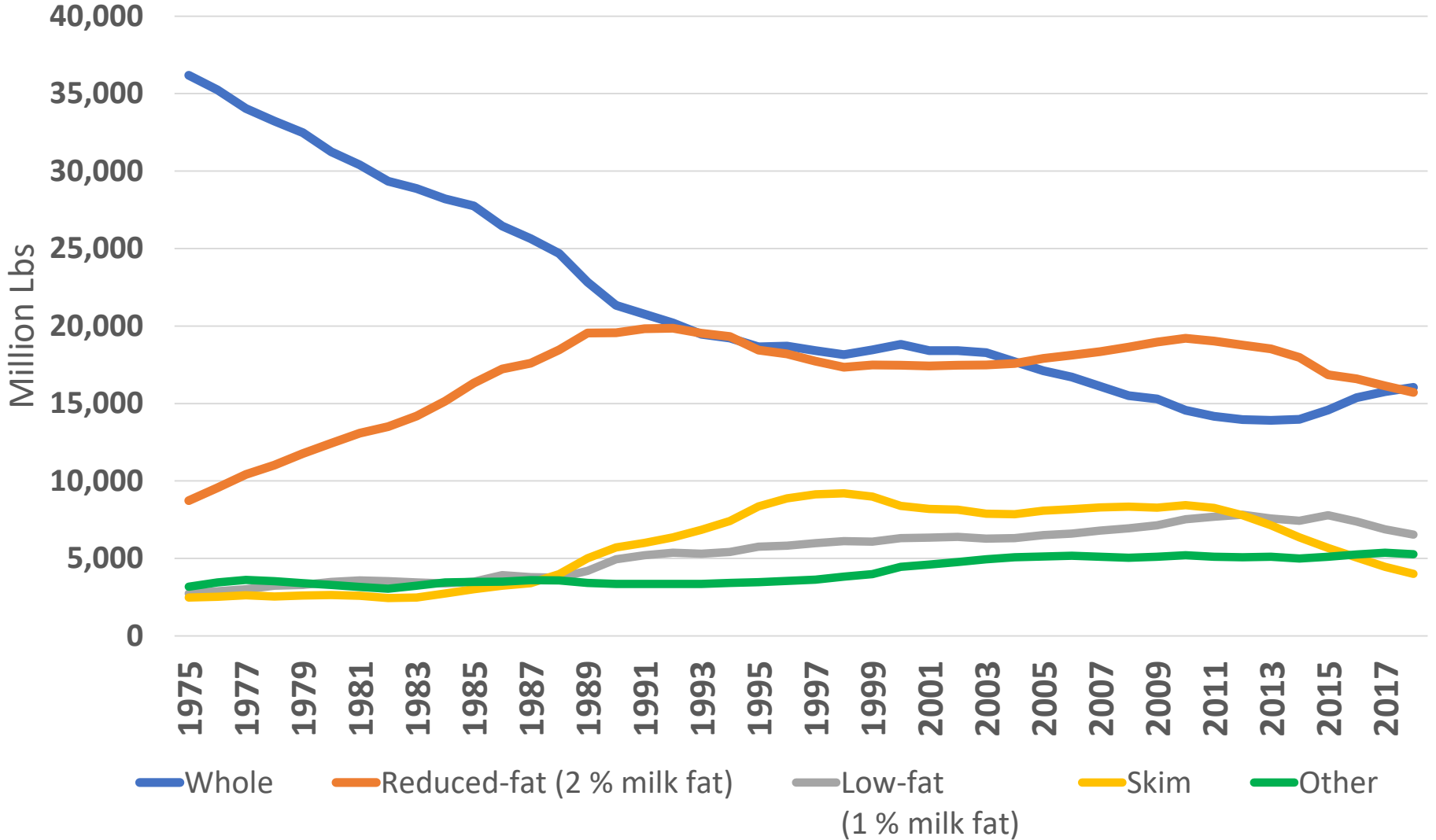
2020 ▼

Average margin for the year is \$10.55

# Beverage dairy milk consumption

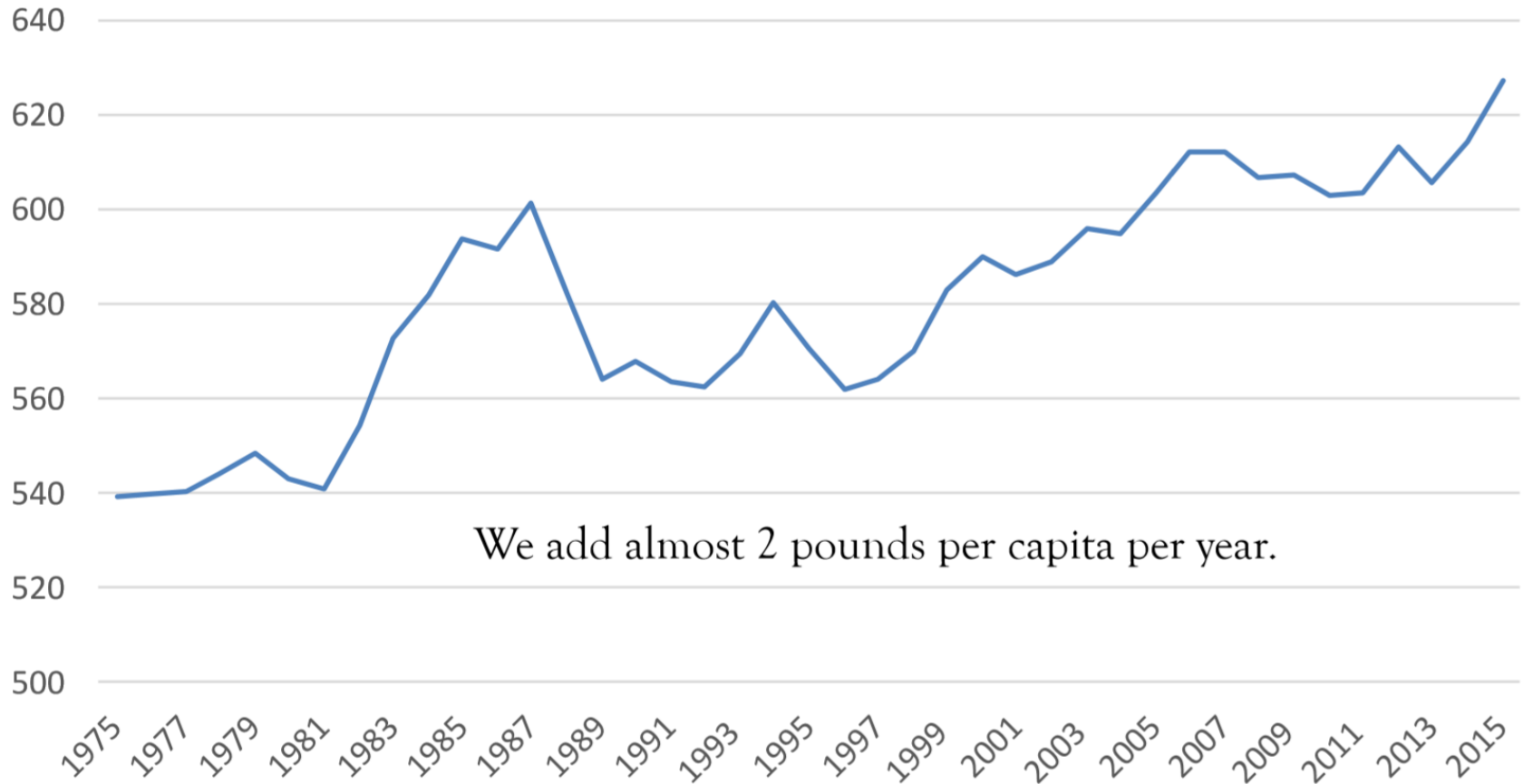


# Fluid Consumption



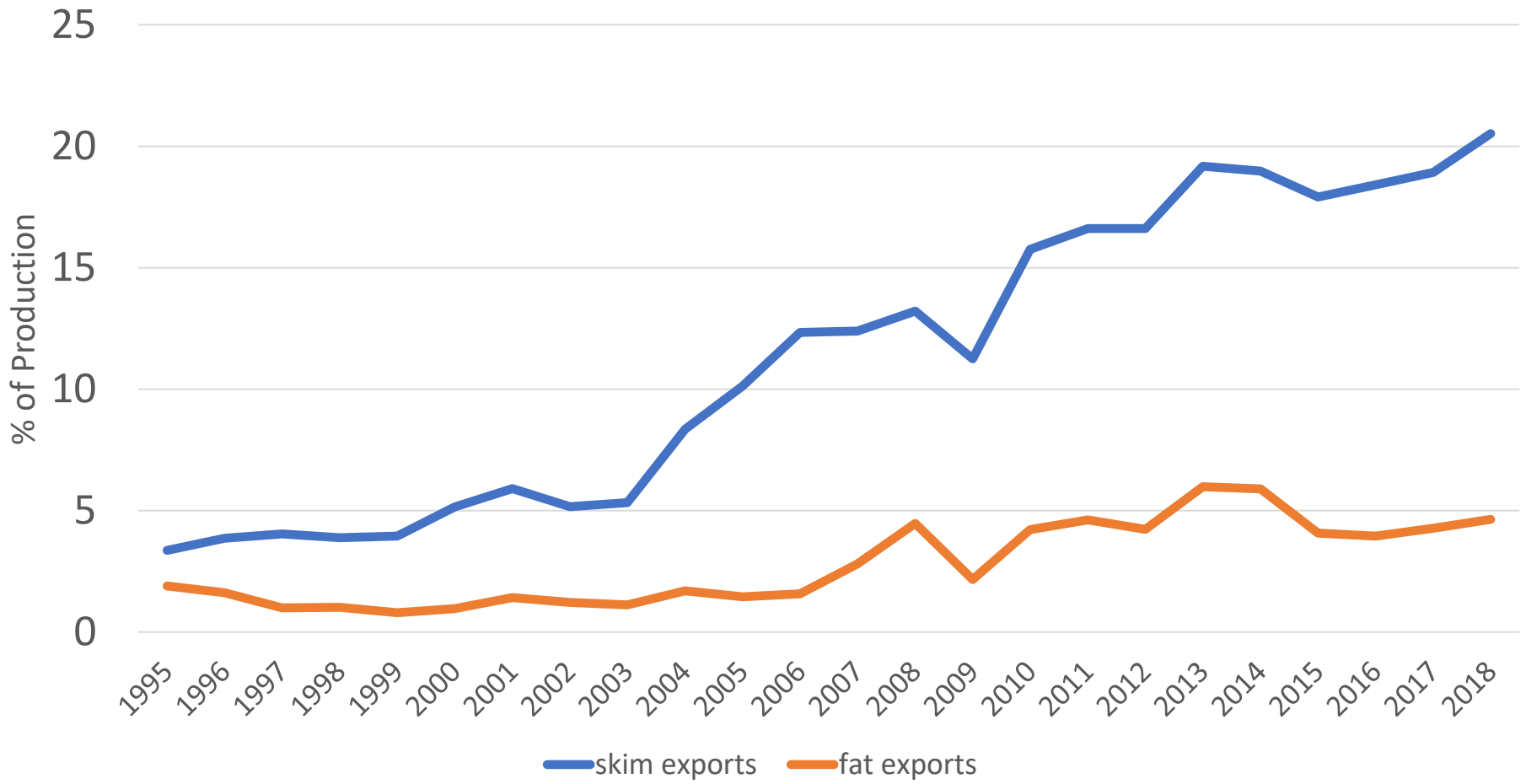
# US per capita Dairy Product Consumption

Milk Equivalent—All Products



We add almost 2 pounds per capita per year.

# Percent of US Milk Solids Exported



# Impacts of Increased US Dairy Exports

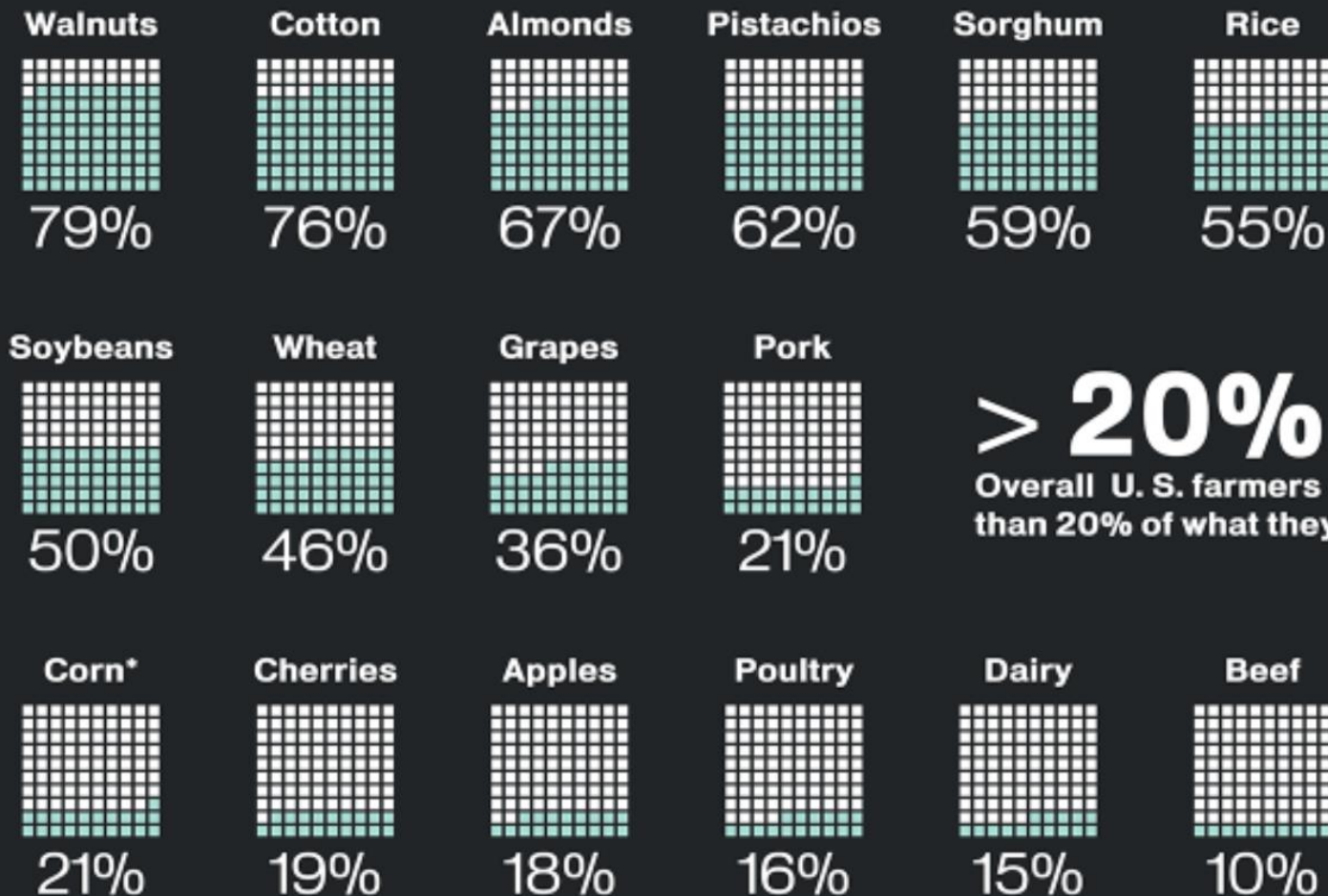
- Exports support production growth
  - US has a home for excess snf/milk proteins resulting in higher dairy revenues in aggregate
- Exports can result in more price volatility
  - US dairy product prices are highly correlated with world prices which also means higher price volatility in some periods
  - Make markets vulnerable to political disagreements

# Results of Increased Exports

US dairy product prices highly correlated with world prices for products exported

- Dry whey 94%
- SMP/NDM 93%
- Butter 48%
- Cheddar 78%

# Percentage of U.S. Agricultural Production Exported



**> 20%**  
Overall U. S. farmers export more than 20% of what they produce

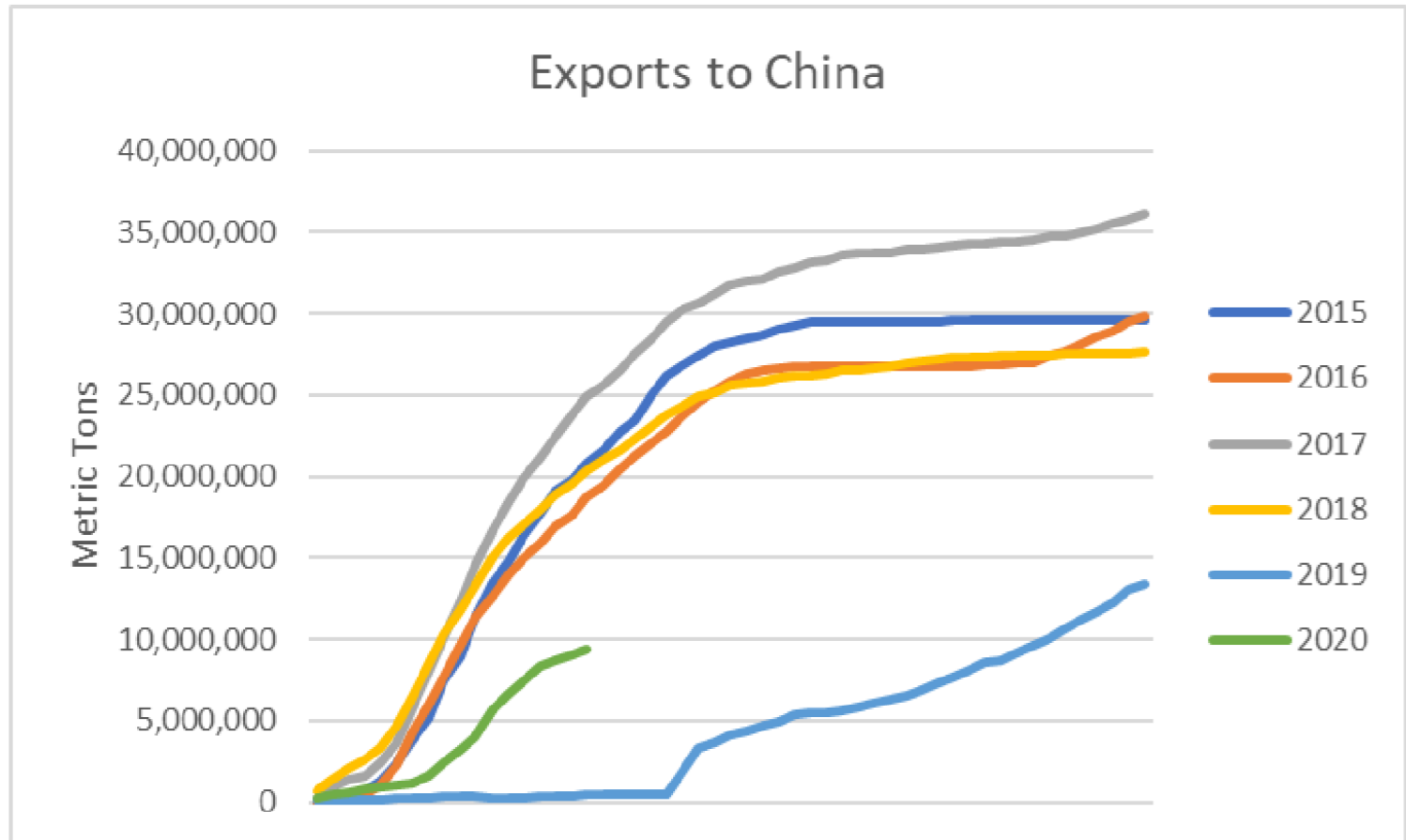
\*Including ethanol, DDGS, and HFCS exports

Source: USDA-Foreign Agricultural Service, Production, Supply and Distribution System

Reference years: Marketing Year 2015/16 - 2017/18



# Soybean Exports



- 62% of Soybeans went to China in MY17, 49% in MY18, 28% in MY 19

# Ag Trade Issues

- USMCA – new NAFTA —APPROVED by US and Mexico
  - China
    - Tariffs—phase 1 trade deal
    - African Swine Fever– how many pigs will be culled?  
40% equates to 24% of world swine herd
    - 175(?) million pigs culled so far; pork prices up 110% in China
    - Decline in soybean and lactose exports to China
      - Up to 150,000 metric tons lactose-equiv demand lost
  - Japan – new free trade agreement
-

# Ag in USMCA

- The tariff structure is identical to NAFTA
- Biggest ag change relative to NAFTA: there is slightly improved market access to Canada for U.S. dairy and poultry products.
- Canada expands access to US dairy products to 3.59% of market
  - Combined with EU and TPP (NZ/Australia) access totals 10% of Canadian market
- Canada agrees to do away with Class 7 milk class that set very low domestic price for ultra-filtered milk (protein for cheese and yogurt)

# Biggest USMCA Changes

- Automobiles must have at least 75 percent of components manufactured in North America to qualify for zero tariffs
- 40-45% of auto parts must be made by workers with at least \$16/hour wages by 2023
- Digital trade rules cover music, e-books and protections for internet companies
- Not yet passed in Canada (introduced Jan. 29)

# USMCA Effects

- The Congressional Research Service estimates the total economic effects of USMCA (relative to NAFTA) to be \$450 million/year
- What is NOT in USMCA: Mexico and Canada are not obligated under USMCA to remove retaliatory tariffs on U.S. agricultural products, issued in response to U.S. steel and aluminum tariffs instituted April 2018.
  - The costs of these retaliatory tariffs to U.S. agriculture is \$1.8 billion/year

## US imports by country

(% change, year on year)

China Mexico World



Sources: US Census Bureau; The Economist Intelligence Unit.

# China “Phase One” Trade Deal

- Mostly deals with patent, trademark, and copyright enforcement
- Also technology transfer, border enforcement and recognizing eachothers’ legal rules

# China Phase One

- The agreement translates into a more-than-350% increase in Chinese purchases of U.S. ag products by 2021, relative to 2018 levels.
- Achieving this is made problematic because the vast majority of recent purchases have been U.S. soybeans. Brazil has already expanded its production of soybeans. There are ongoing Swine flu and a decimated pork production capacity in China.
- And now coronavirus is threatening to gum up US-China trade networks.
- The key question is - when China fails to make these huge ag purchases (which seems almost inevitable) - what will be the backlash? Another round of tariff hikes? More rounds of MFP payments?



# China “Phase 1” Dairy Implications

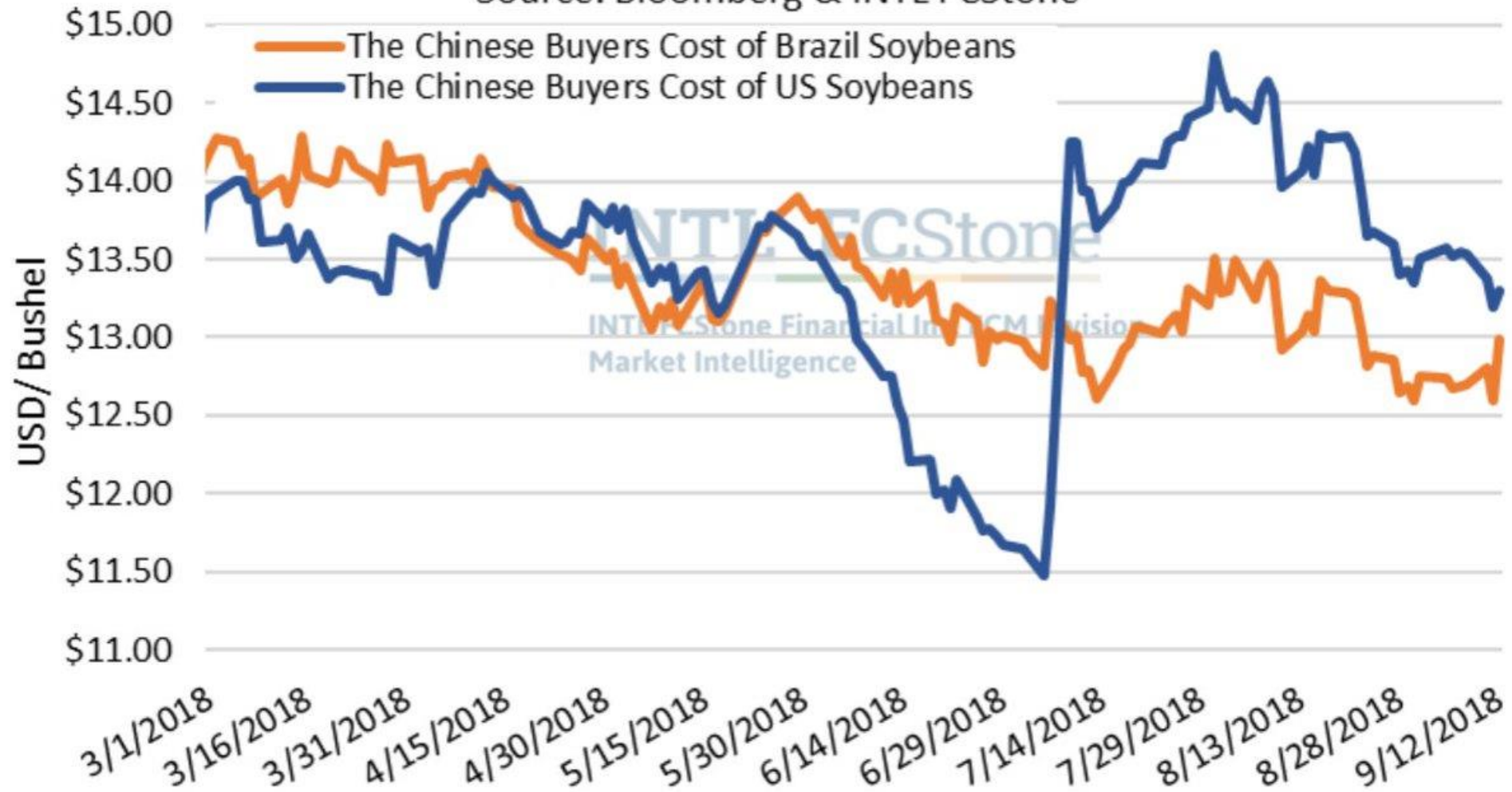
- US Dairy Exports to China

2017 \$576million 2018 \$499million 2019 \$343million (Nov)

- China committed to streamline timelines/procedures for U.S. facilities and products and to provide regulatory certainty and market stability for products.
- Dairy and infant formula commitments could result in an additional \$250-300 million in annual dairy and infant formula exports above current levels.
- China agrees not to undermine US product access with Geographic Indicators (EU)
- IDFA estimates China represents a \$23 billion market opportunity for U.S. dairy over next decade

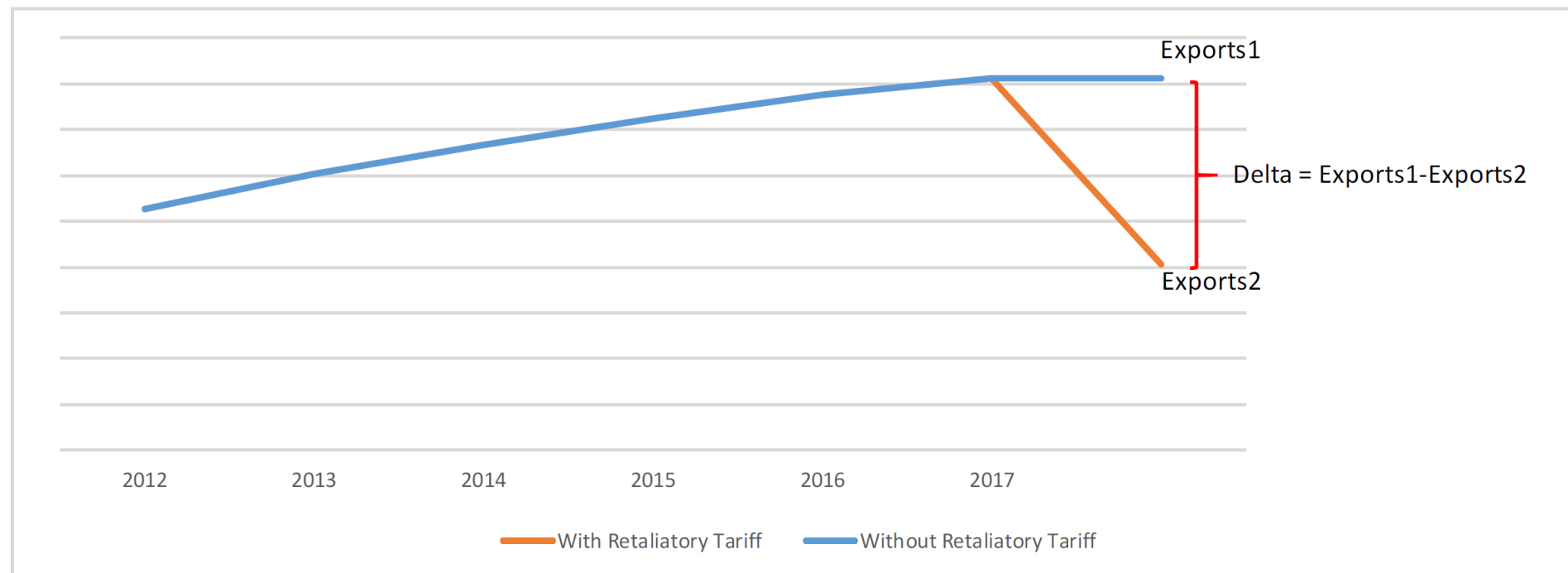
# US vs Brazil Soybean Price for Delivery to China

Source: Bloomberg & INTL FCStone



# Estimating Trade Damage

**Figure 1: Value of U.S. exports to retaliatory partner with and without the retaliatory tariff**

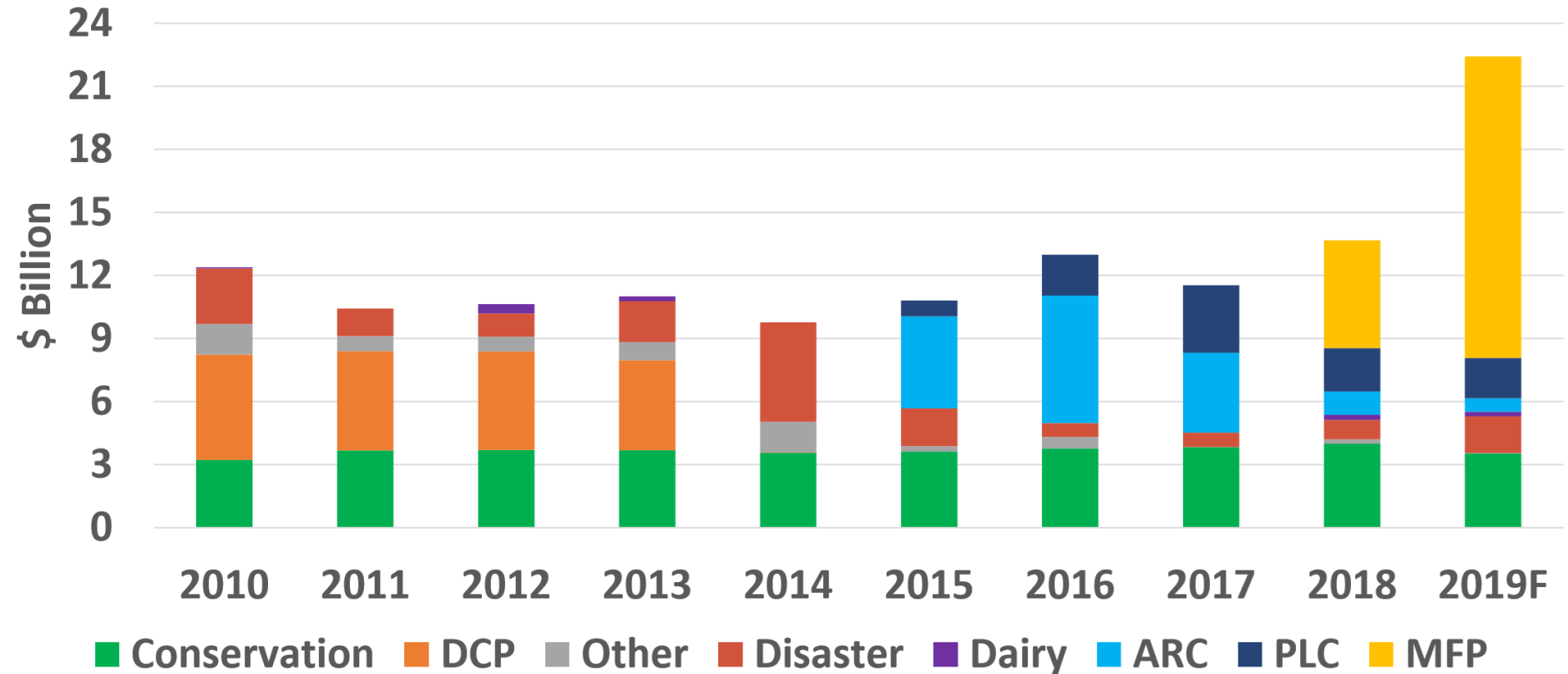


# US Response to Trade Wars

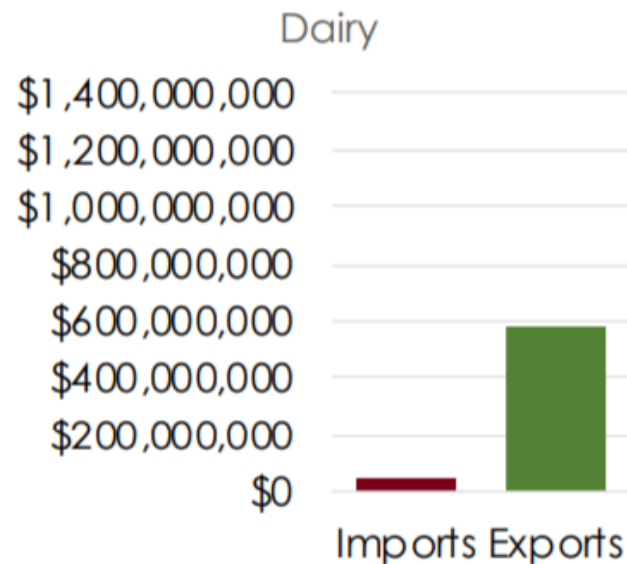
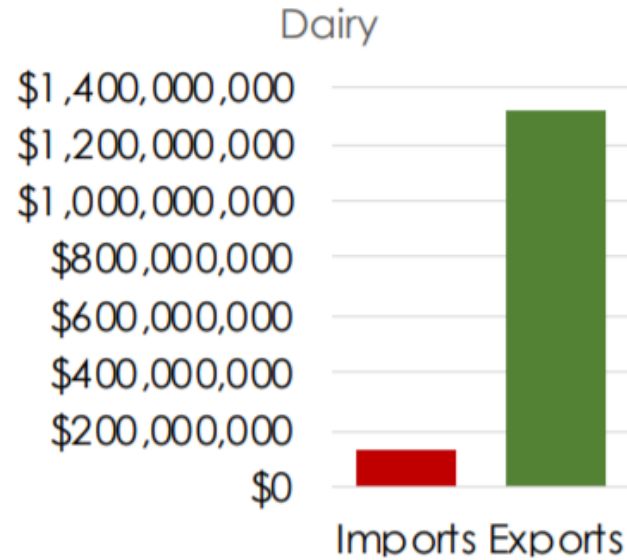
- Market Facilitation Payments:
  - Round 1 in 2018: \$8.59 billion total -- \$180 million to dairy producers
  - Round 2 in 2019: up to \$14.5 billion total -- \$351-371 million to dairy producers
  - Dairy-related payments represents 2.4-2.6% of 2019 MFP; in 2018 dairy received 2.1% of all trade assistance dollars.
- MFP is part of a broader USDA effort to help producers whose commodities have been directly impacted by tariffs. Other USDA programs include:
  - The [Food Purchase and Distribution Program](#) will purchase affected commodities.
  - And the [Trade Promotion Program](#) attempts to restore lost markets and develop new export markets for farm products.
    - \$300 million total—USDEC \$7.8 million

# Direct Payments to US Farmers in 2019

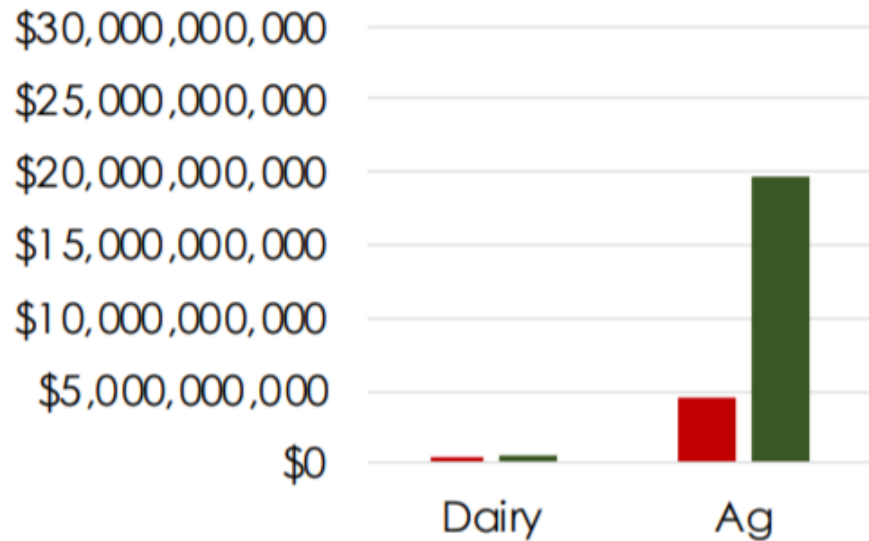
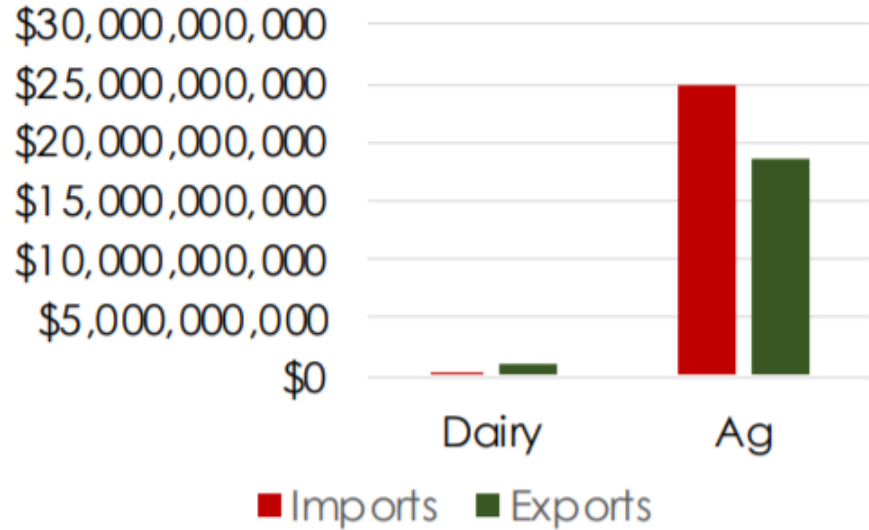
Market Facilitation Program (MFP) Payments > exceeded \$14.3 Billion



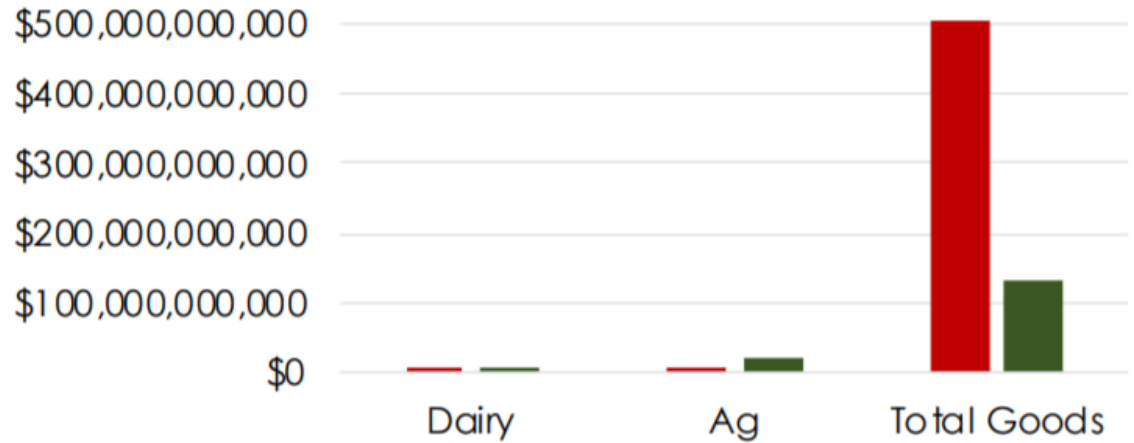
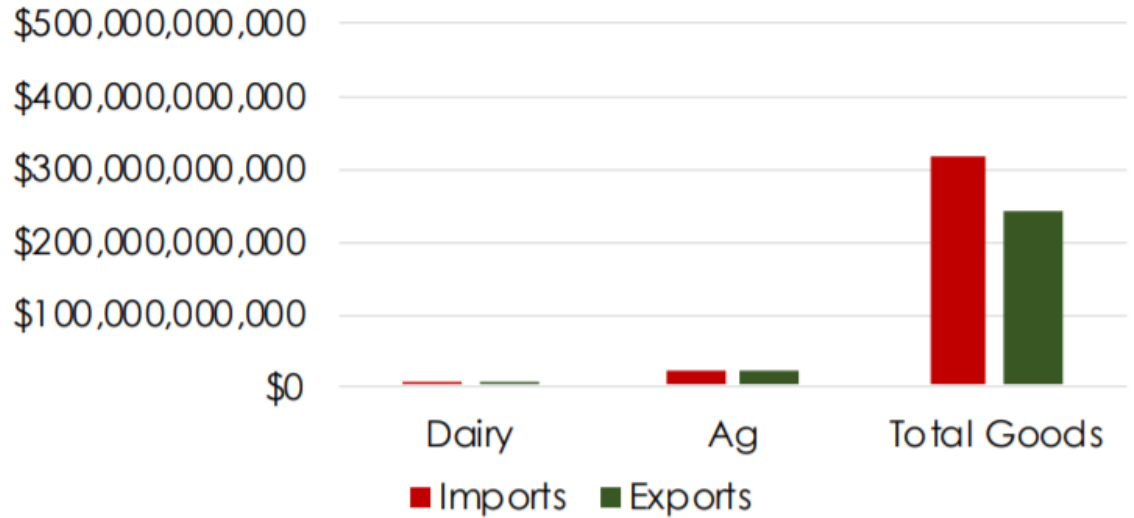
# U.S. Exports to Mexico and China



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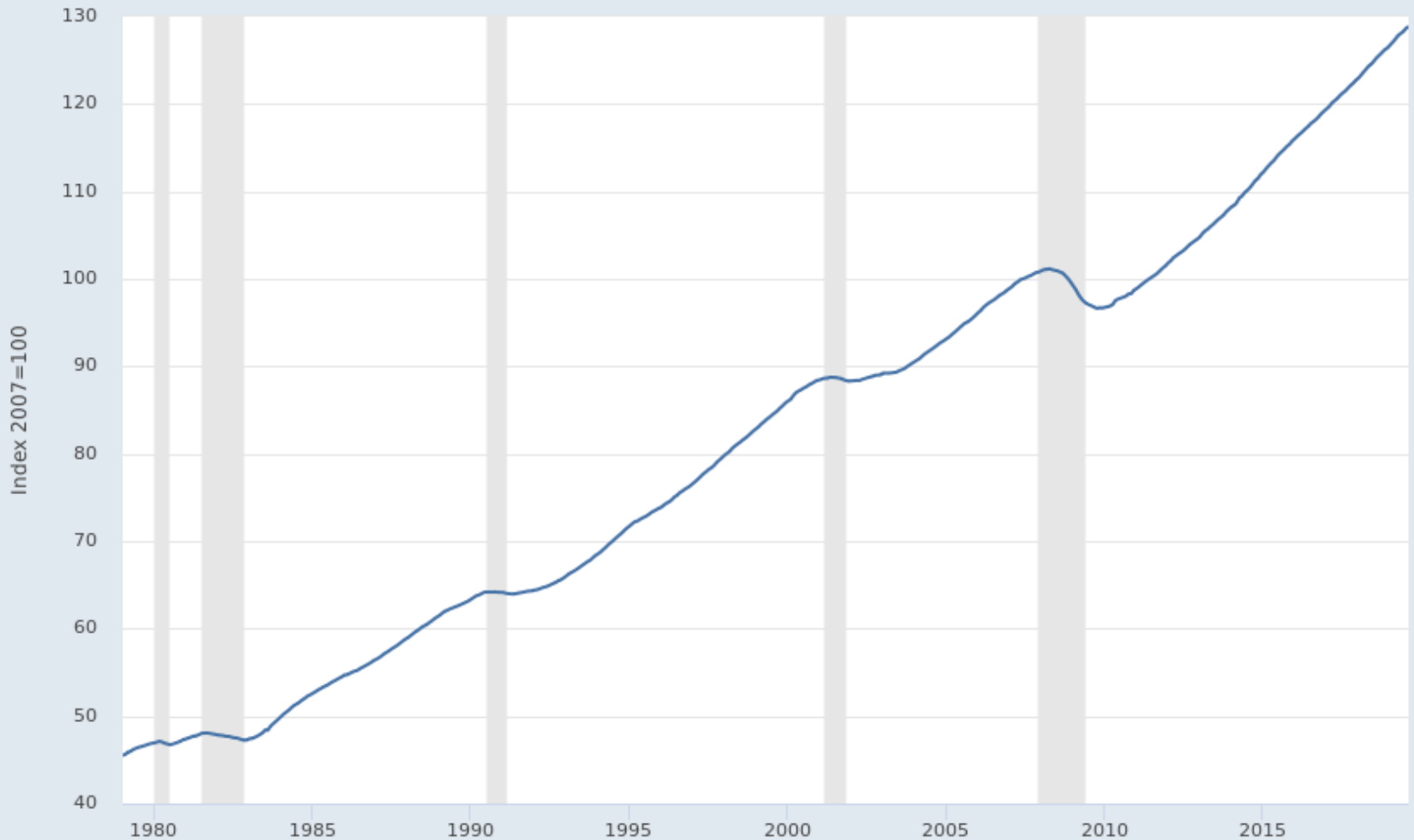


# Domestic Demand needs Income growth

- Where are we in the business cycle?
- When the US experiences a recession the rest of the world often follows?
- Several other economies are struggling
  - China in particular
  - EU, UK--Brexit

# Is the US economy slowing?

**FRED**  — Coincident Economic Activity Index for the United States



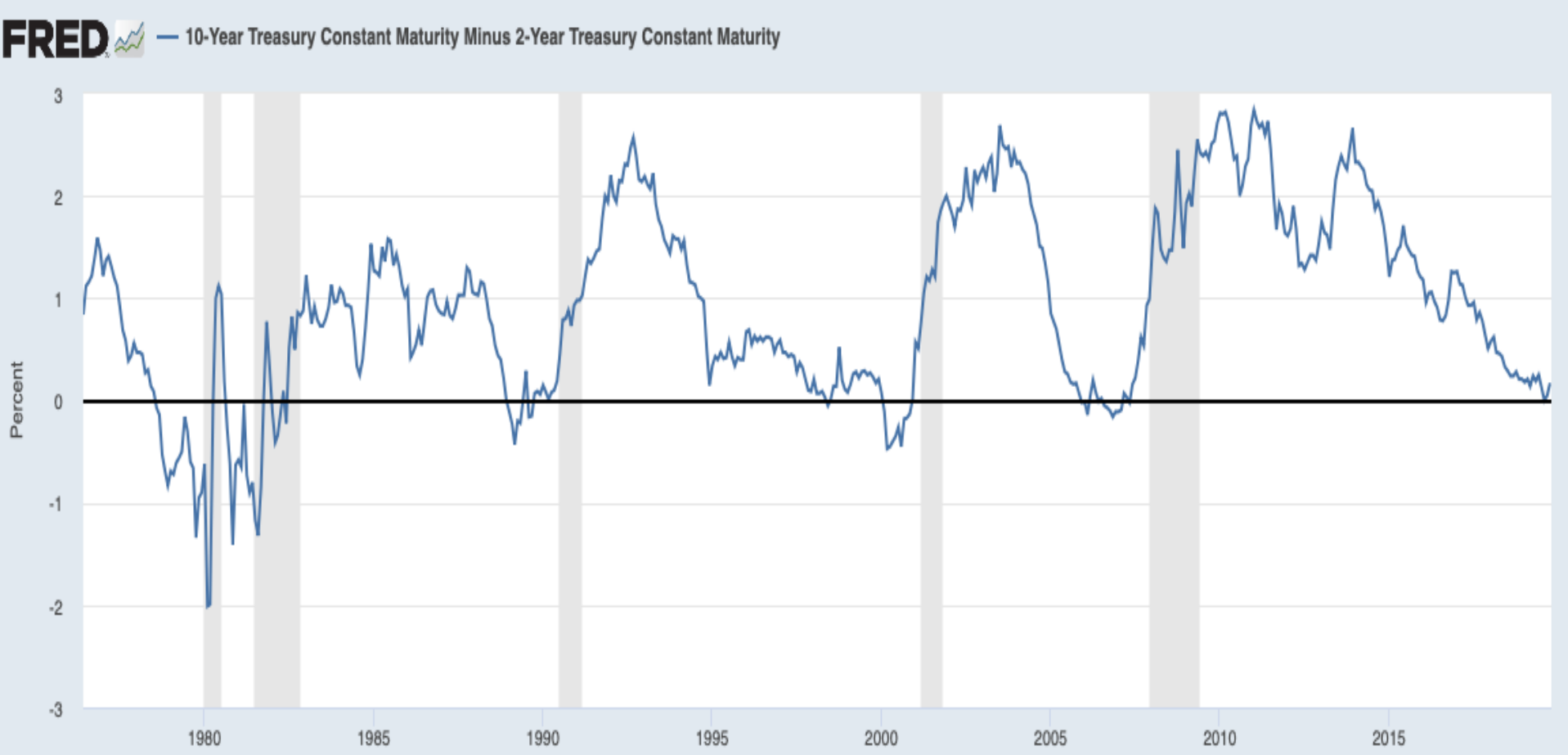
Shaded areas indicate U.S. recessions

Source: Federal Reserve Bank of Philadelphia

[myf.red/g/p2vS](https://myf.red/g/p2vS)

# Comments on the General Economy

## *10 Year Minus 2 Year Treasury Bill Spread*



Shaded areas indicate U.S. recessions

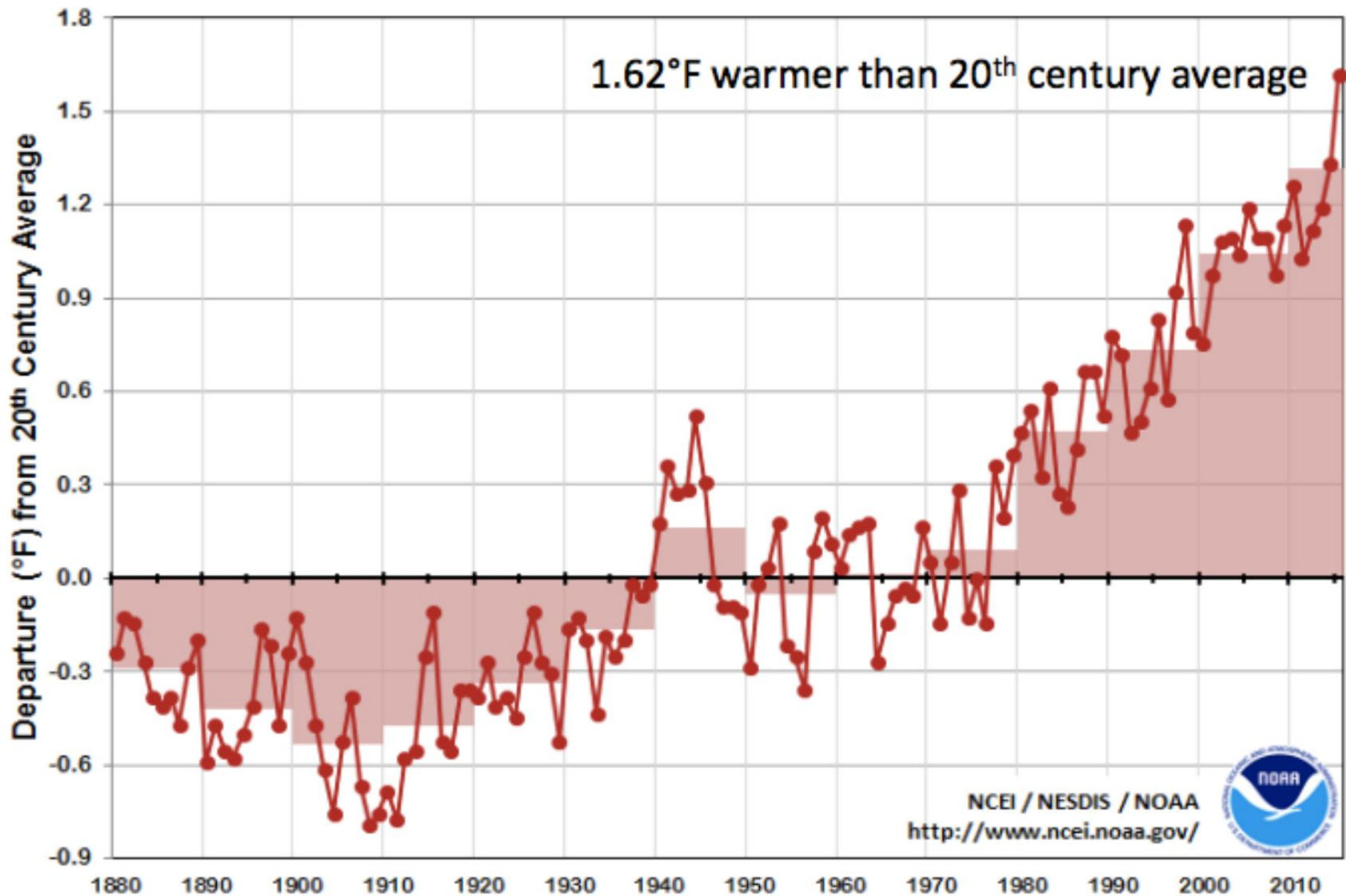
Source: Federal Reserve Bank of St. Louis

fred.stlouisfed.org

# Climate change and US Ag

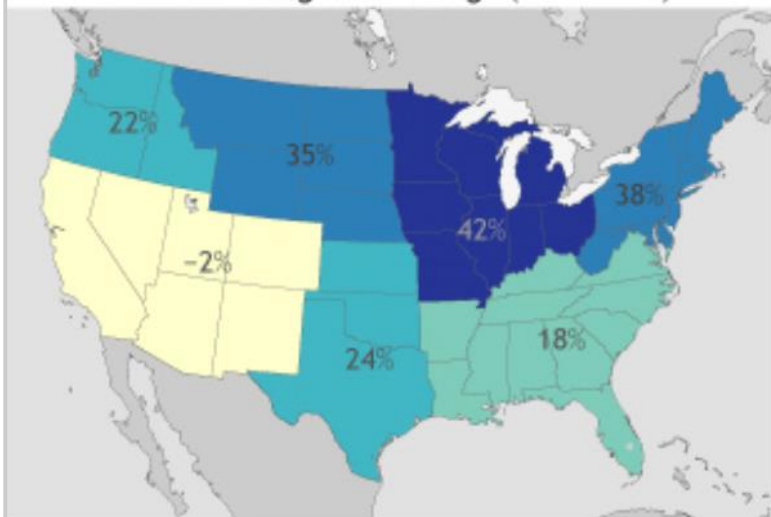
Two key predictions are consistent in climate forecasts

1. Increasing average temperature with larger variations around the average
2. Increasing number of extreme precipitation events

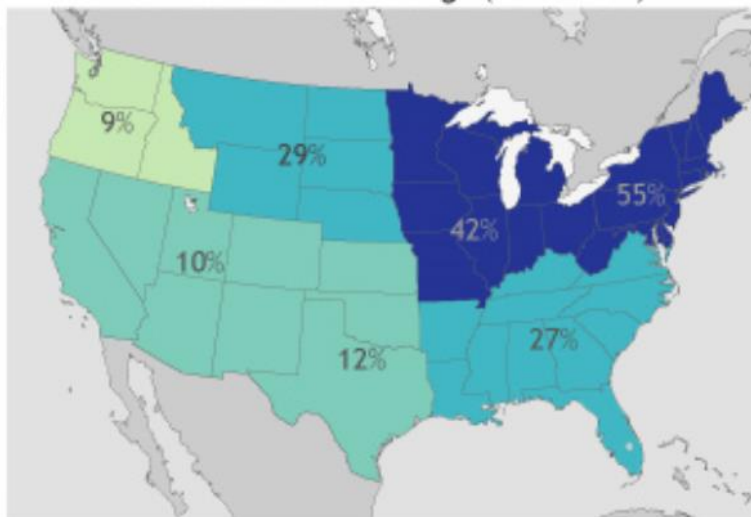


# Change in extreme precipitation across the United States

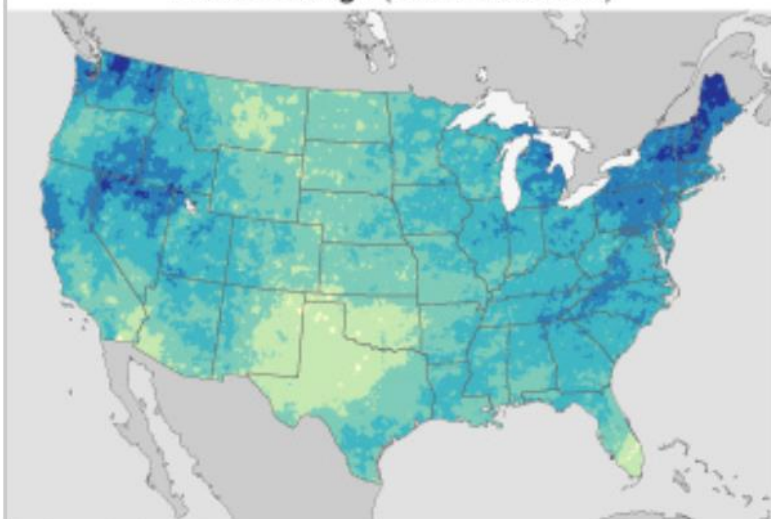
Observed long-term change (1901–2016)



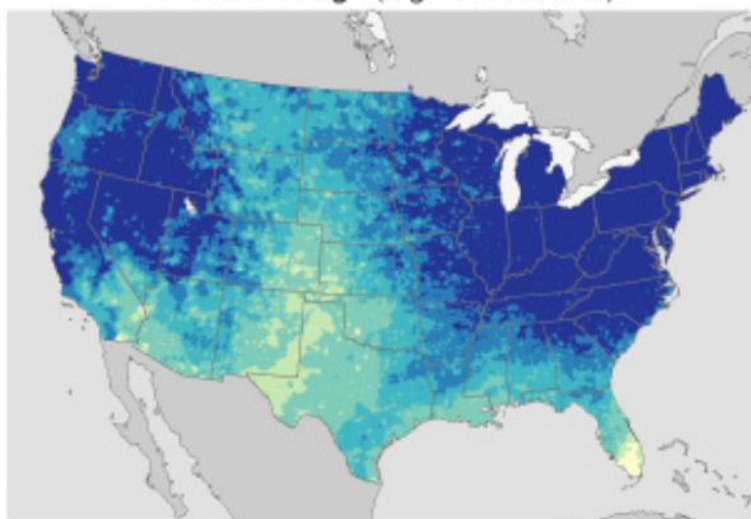
Observed recent change (1958–2016)



Future change (lower emissions)

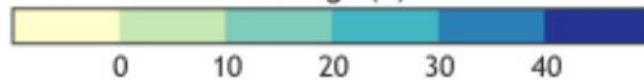


Future change (higher emissions)



by late 21<sup>st</sup> century  
compared to 1986–2016

Change (%)



NOAA Climate.gov  
Data: NCA4

# Climate Change Implications for Agriculture

- Higher temperatures
  - Cooling for livestock
  - Crop varieties
- Extreme precipitation means
  - More issues at planting and harvest
  - More difficult to control erosion and run-off

# Government/Policy Response

- Taxes?
- Investment incentives?
- Ability to take advantage of social response



# Thank You

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