

# 2023 US Dairy Situation & Outlook

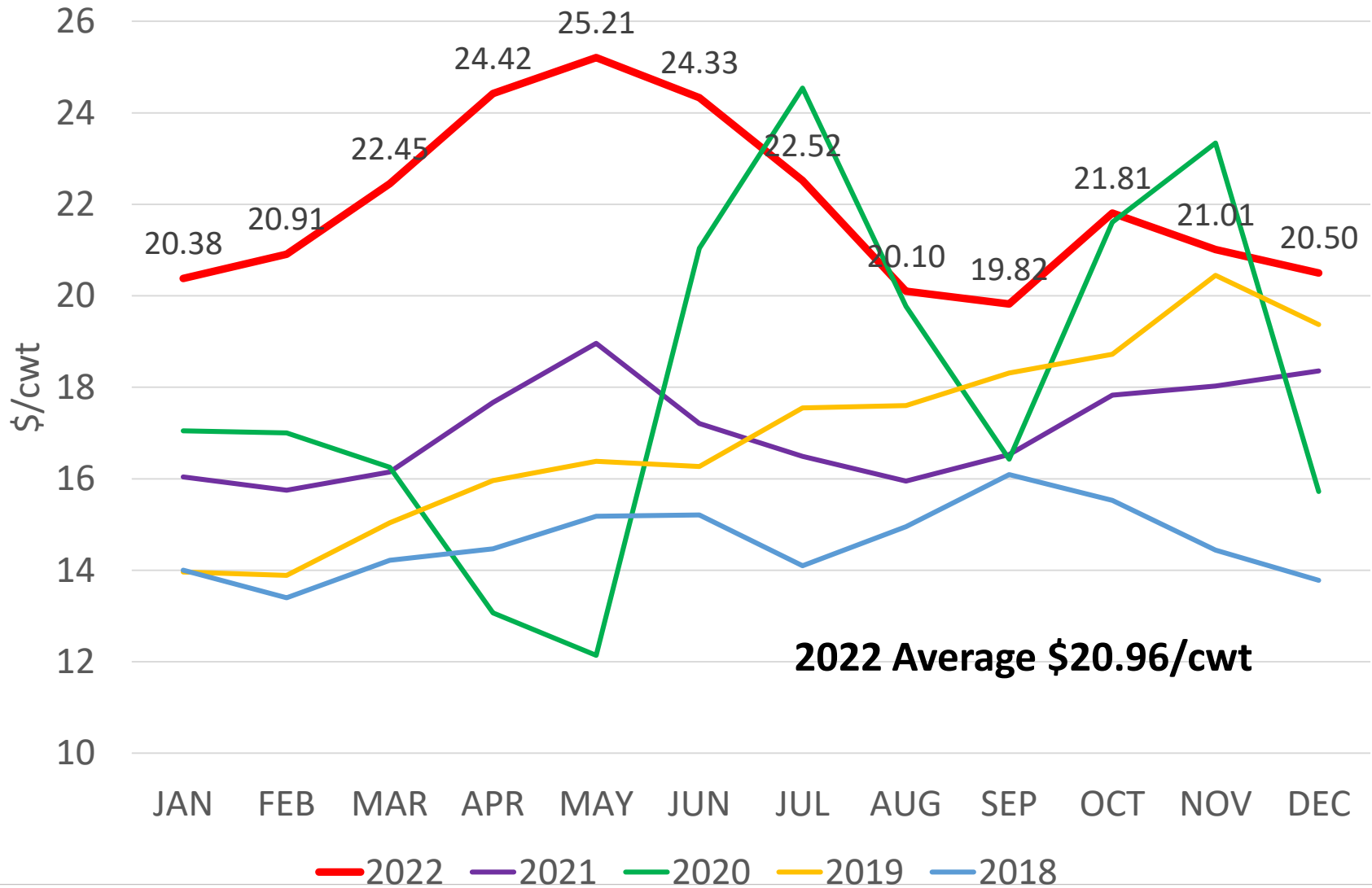
**Christopher A. Wolf**

**E.V. Baker Professor of Agricultural Economics**

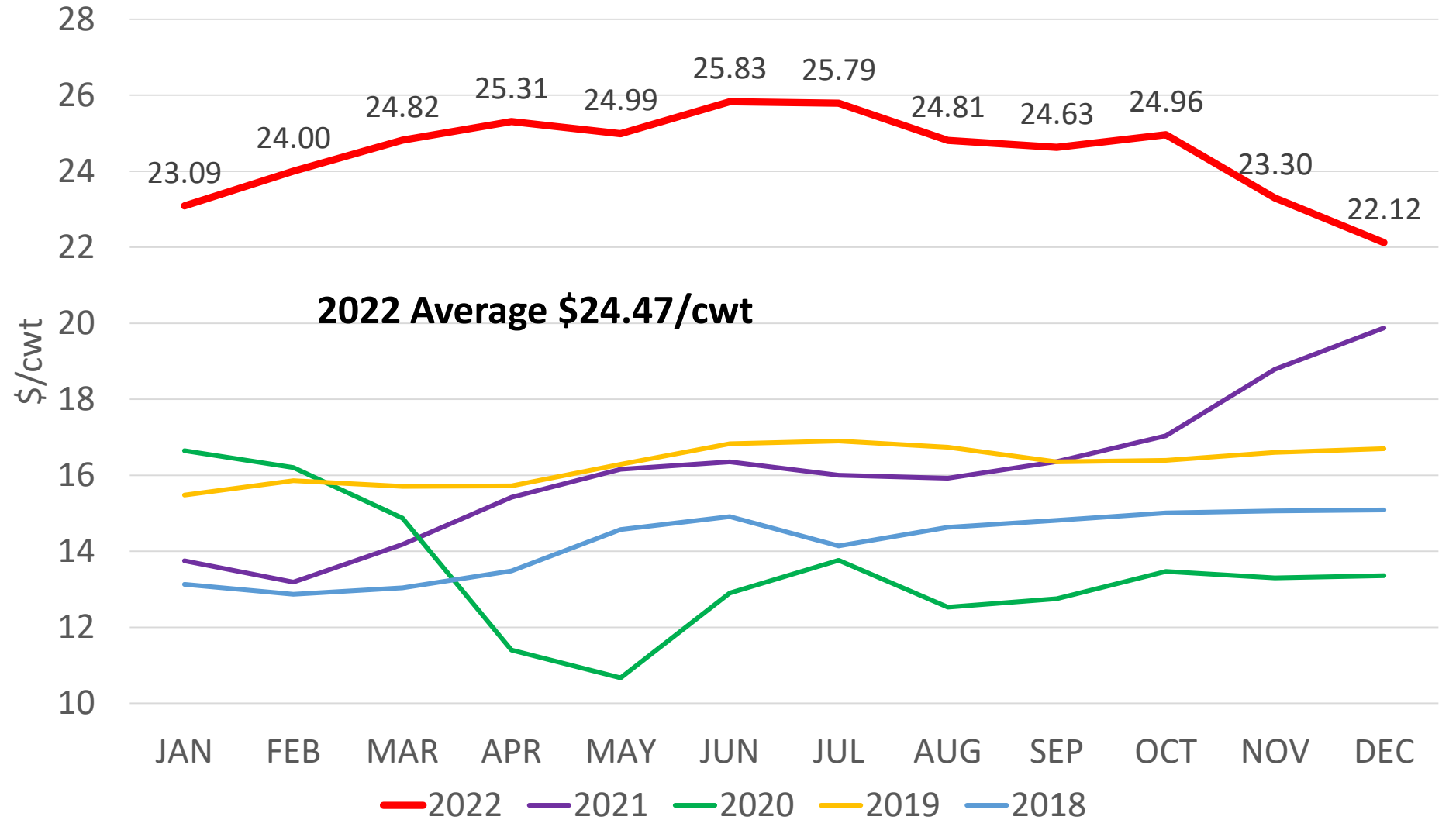
**Dyson School of Applied Economics and Management**

**Cornell University**

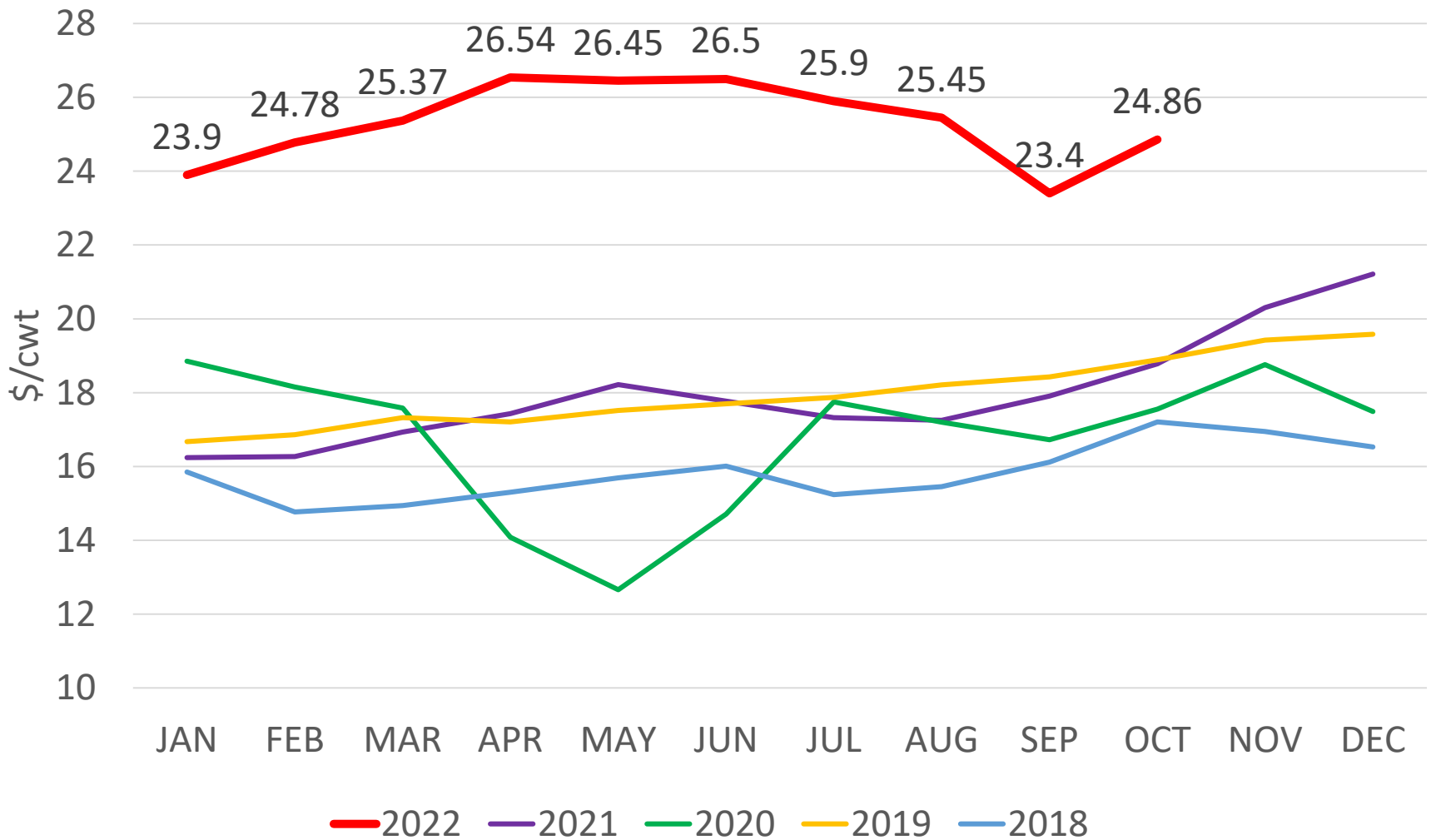
# 2022 Class III Price



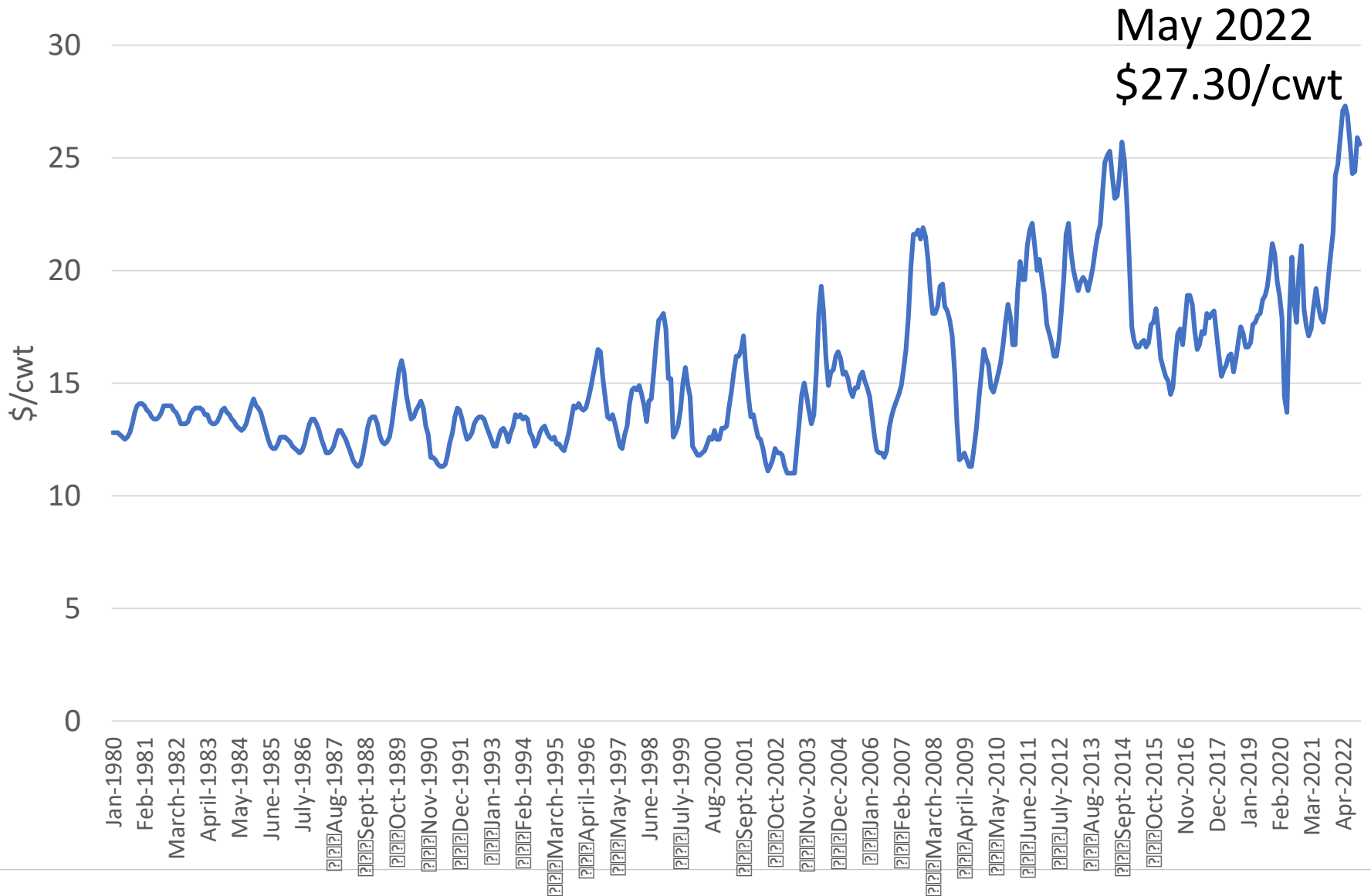
# 2022 Class IV Price



# 2022 NY Mailbox Price

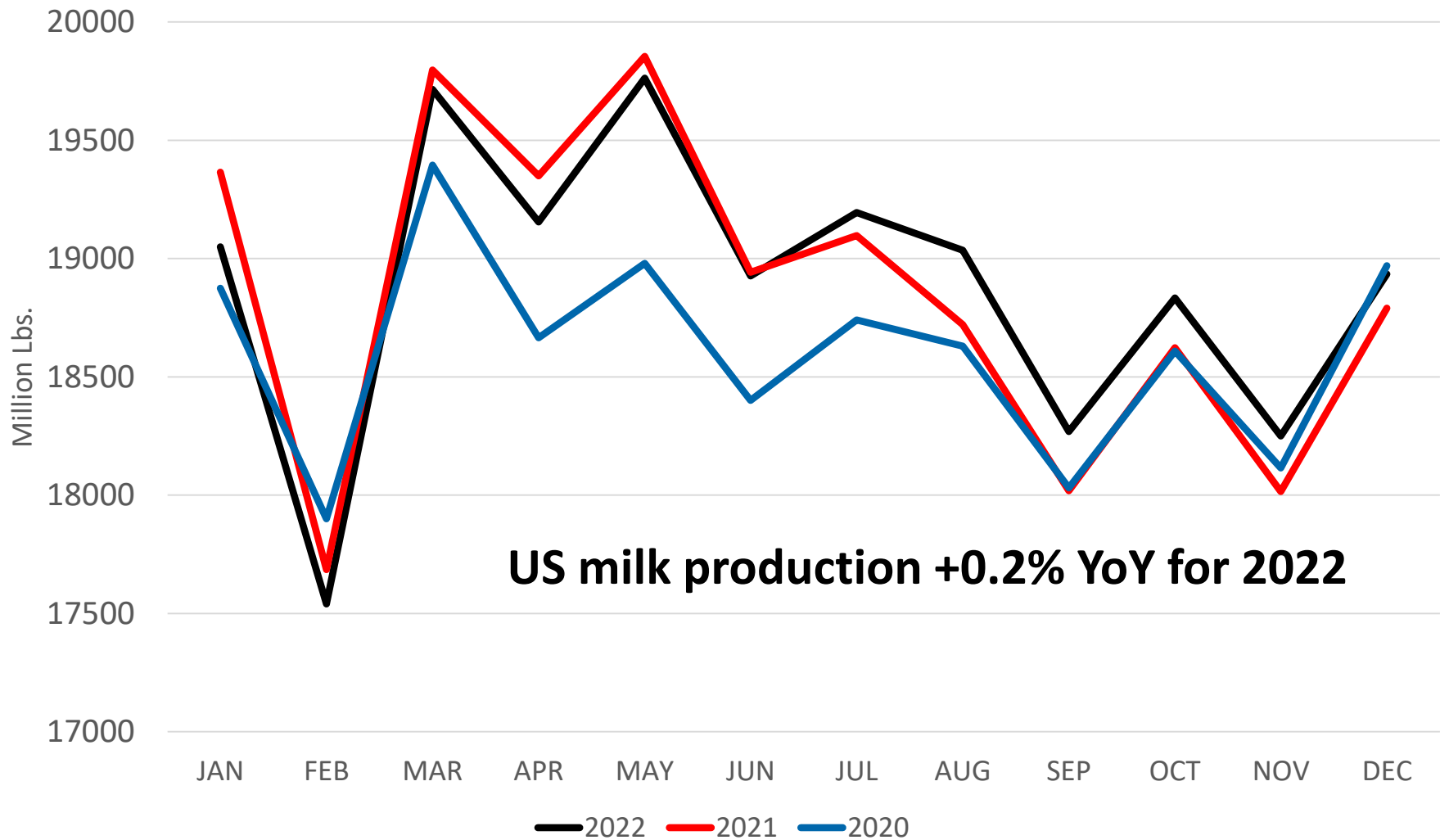


# US All Milk Price

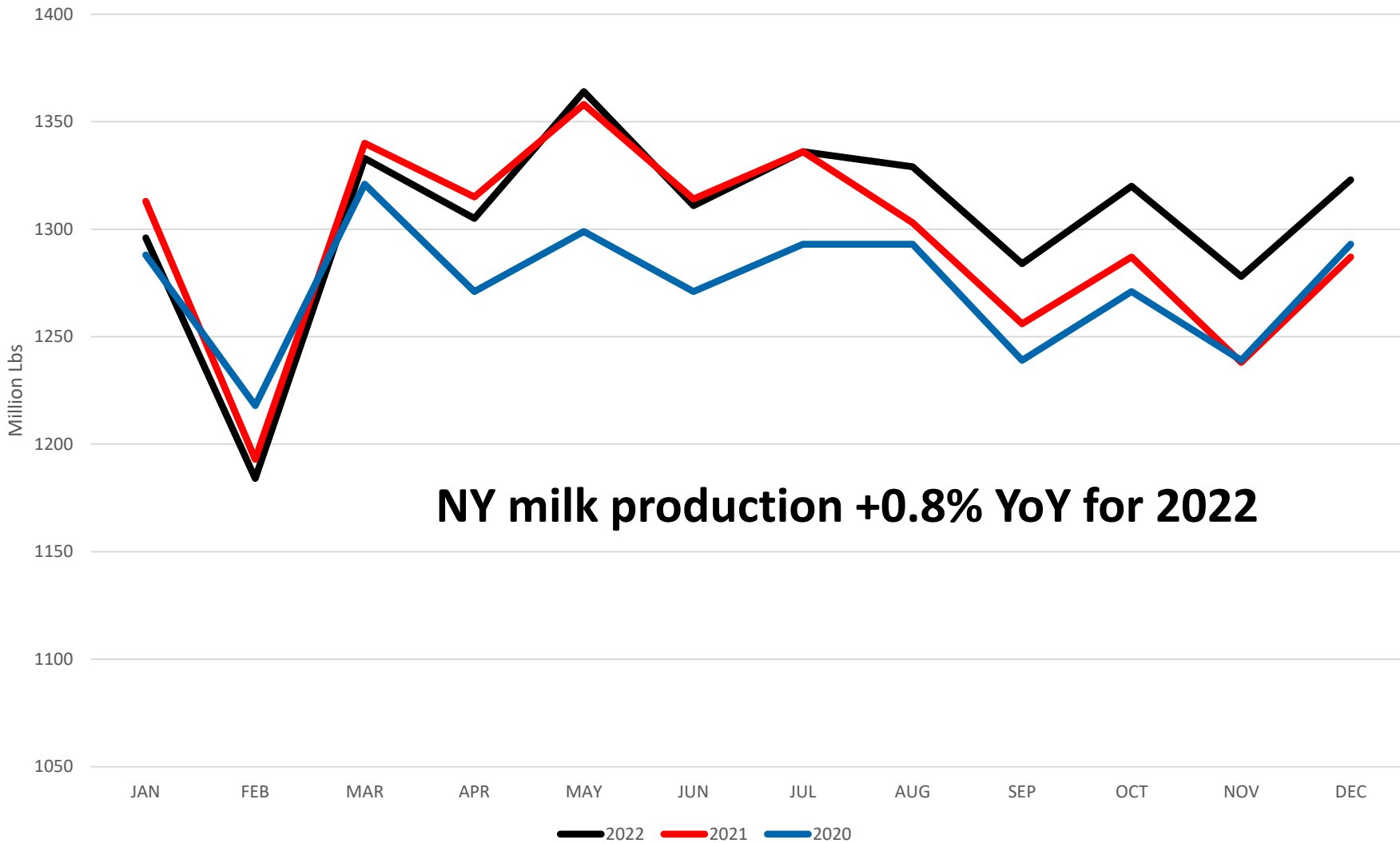


May 2022  
\$27.30/cwt

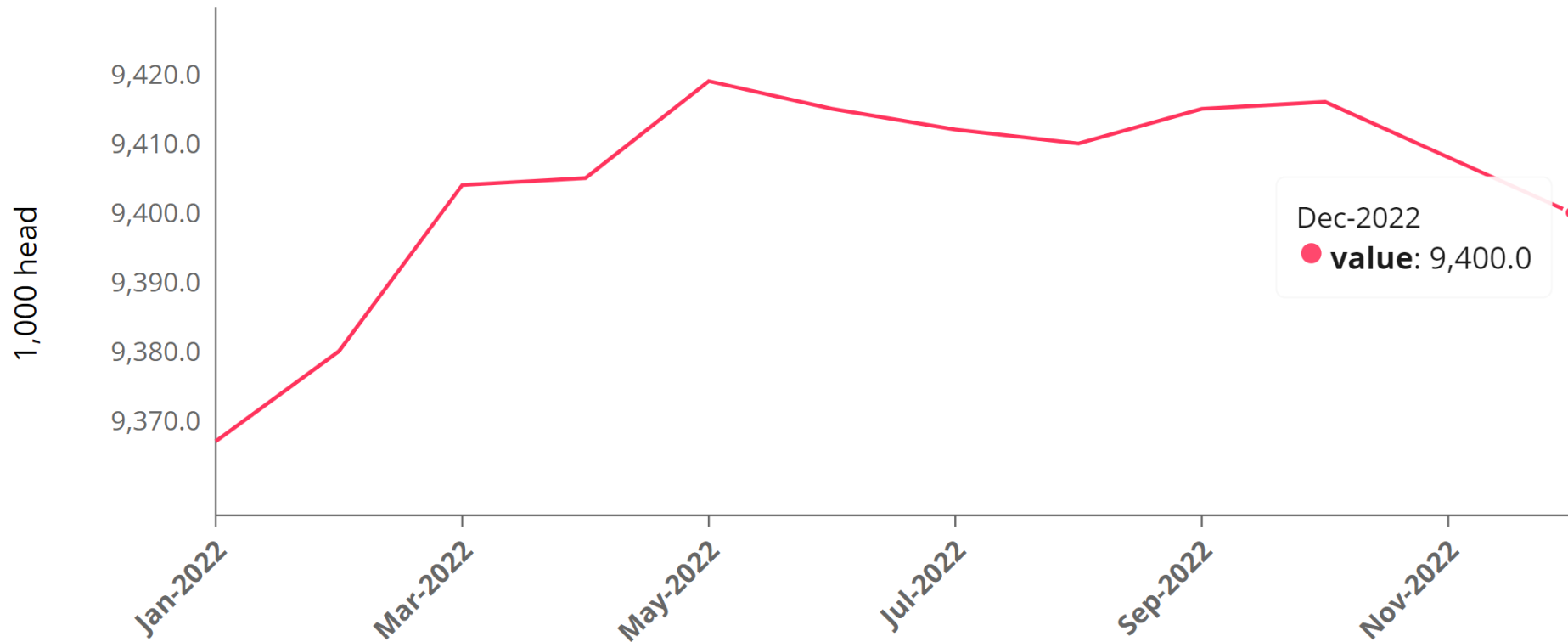
# US Milk Production



# New York Milk Production



# US Milk Cows





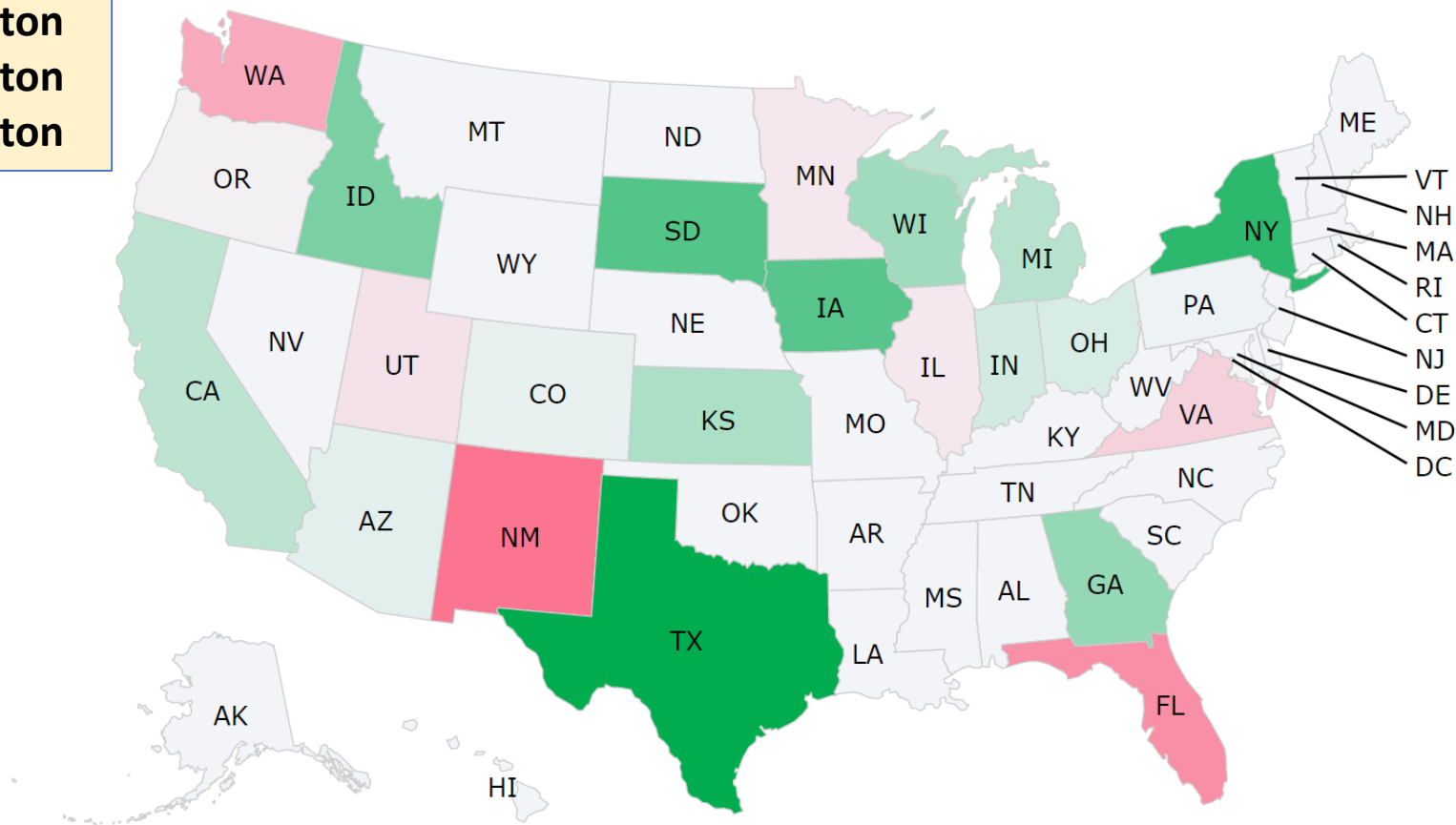
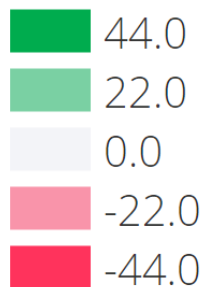
# Milk Production - United States

## U.S. States Map

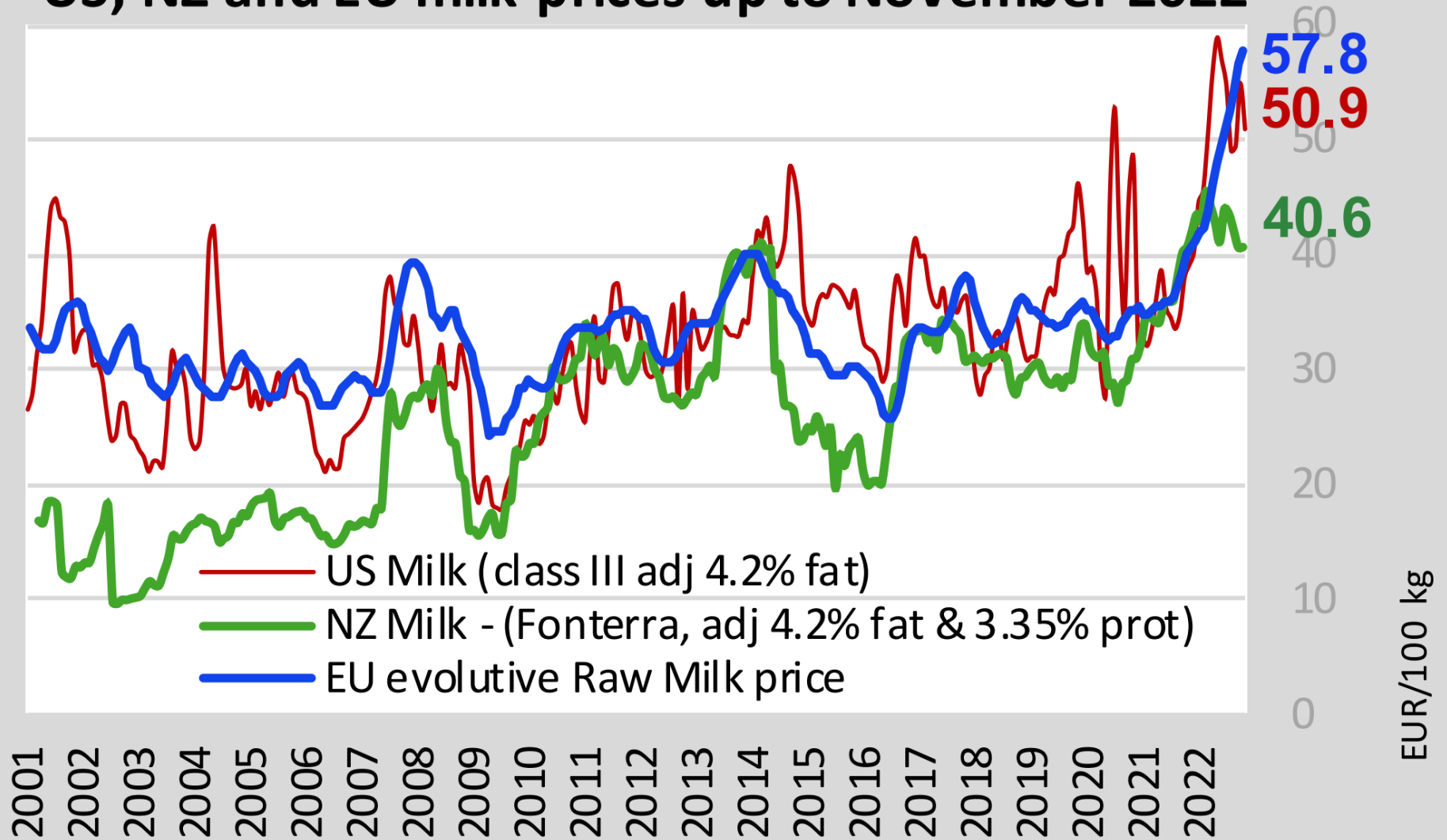
**Supreme Alfalfa Hay  
December 2022**

**CA \$390/ton**  
**NY \$320/ton**  
**TX \$334/ton**  
**WI \$196/ton**

mil lbs

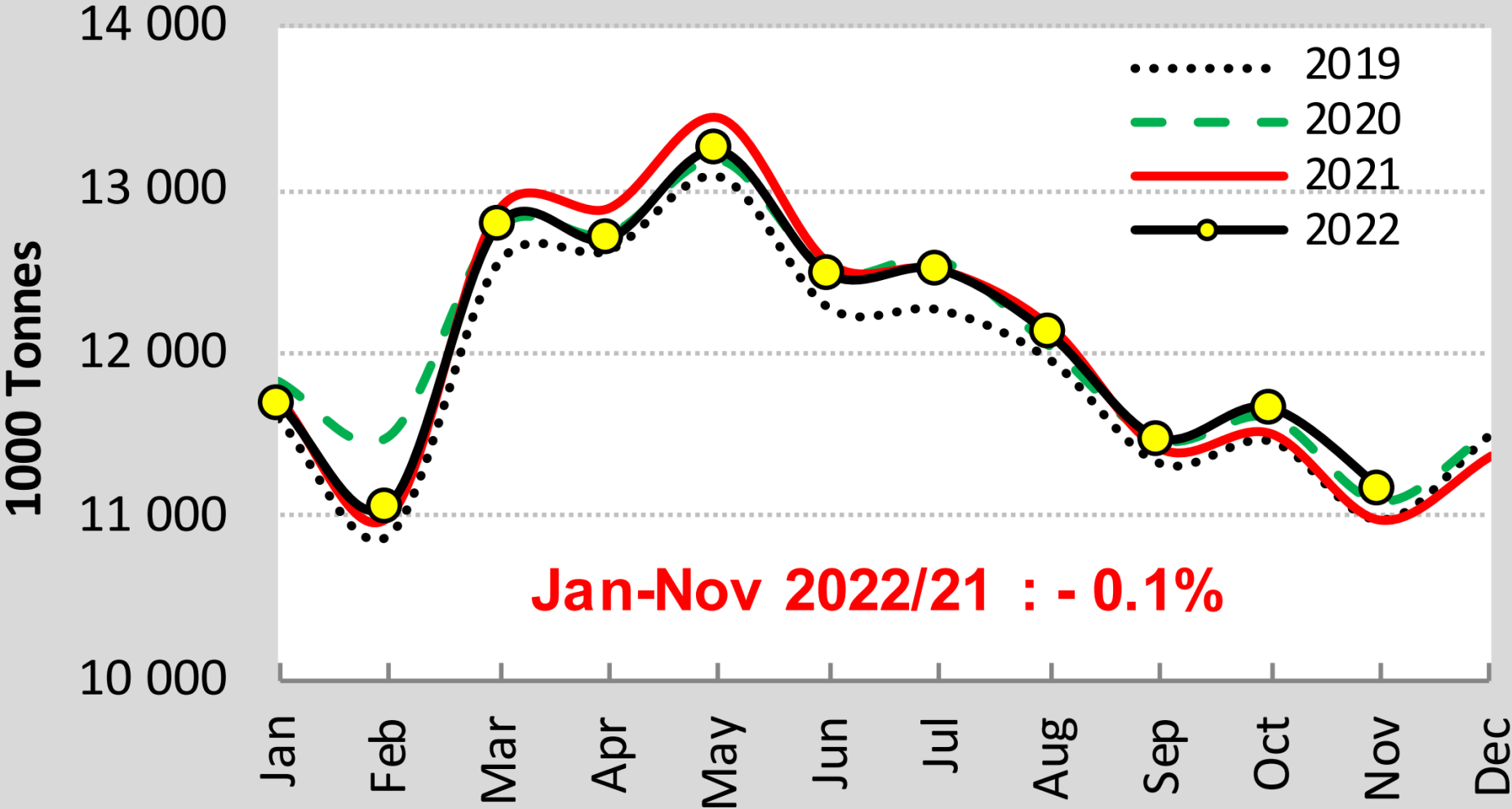


# US, NZ and EU milk prices up to November 2022



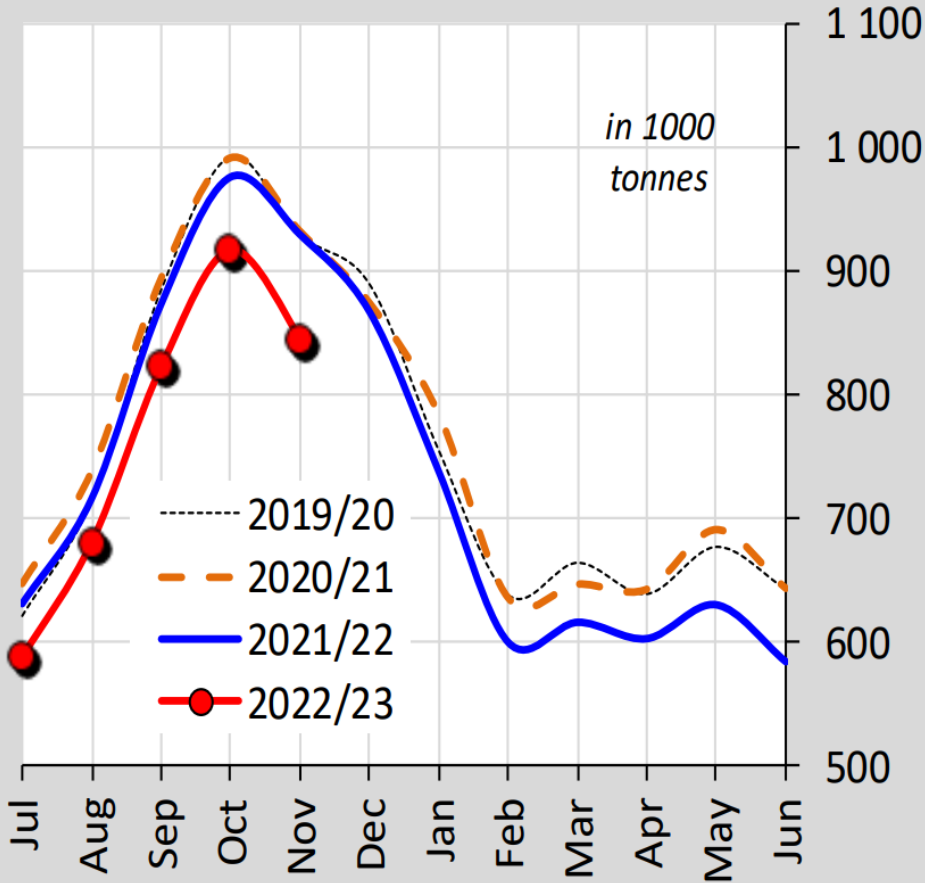
Source : DG AGRI, LTO Nederland

# EU - Cows' milk collected



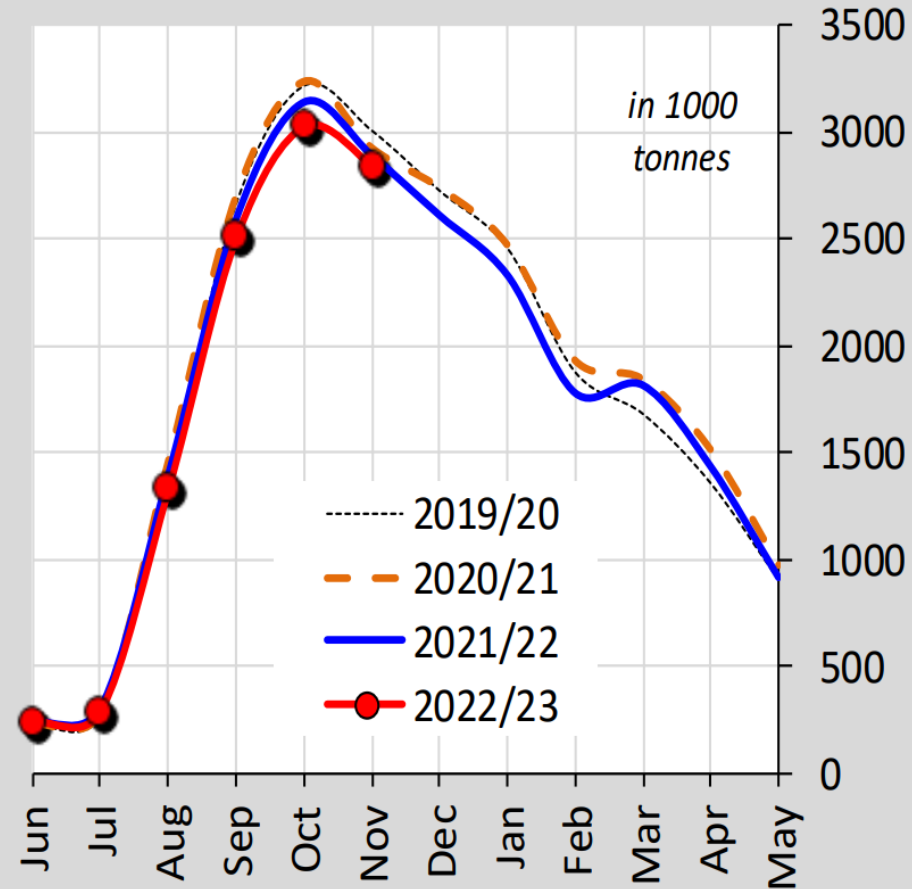
# Australian milk production

Jul-Nov 2022/23 compared to 2021/22 : - 6.7%



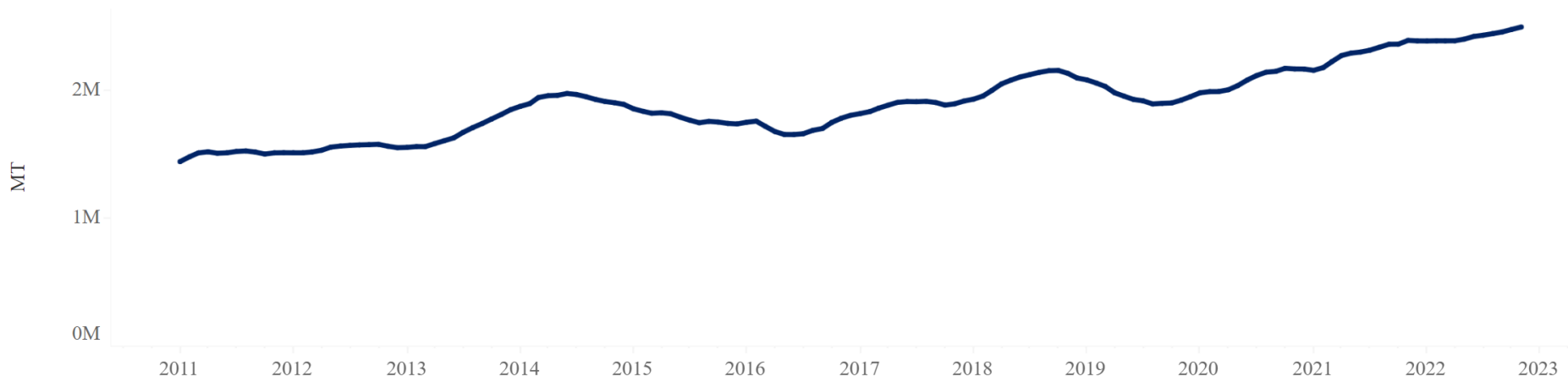
# NZ milk production

Jun-Nov 2022/23 compared to 2021/22 : - 3.1%

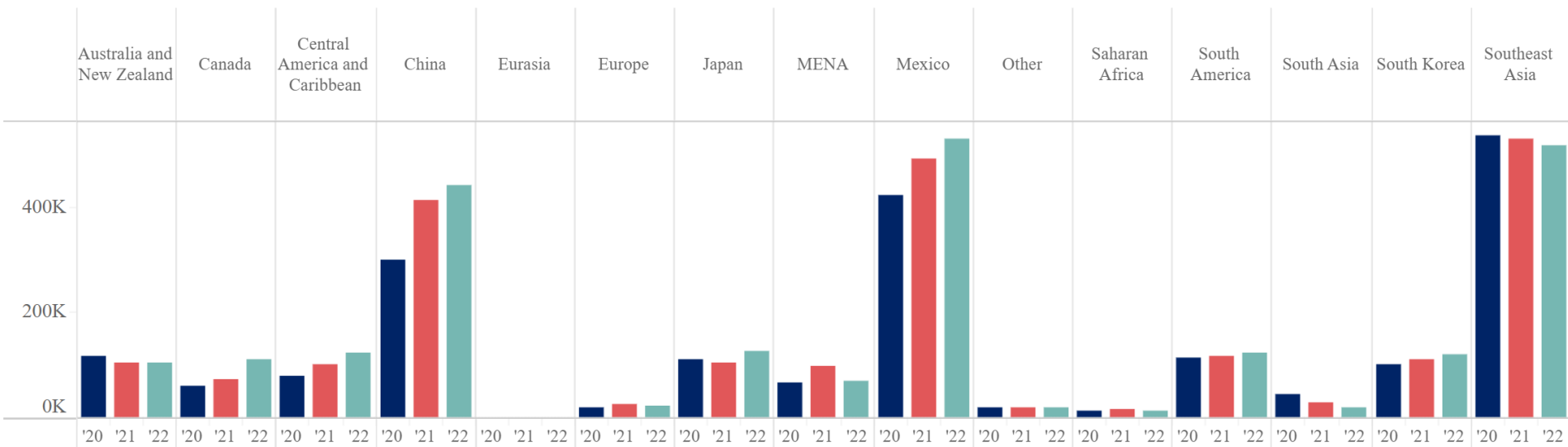


# US Dairy Exports

All Exports by Volume (Rolling 12-Month)



All Exports by Volume by Market, YTD - November



# US Dairy Exports

## Year-to-Date Performance: January - November

Category	2020	2021	2022	'21-'22 % Change	'21-'22 Vol Change	Unit
Total Export Value	\$6,029.3	\$7,096.3	\$8,879.9	25%	\$1,783.6	Million \$
Total Milk Solids	1,914,578	2,122,047	2,216,971	4%	94,924	MT
SMP/NFDM	748,486	822,740	763,930	-7%	-58,811	MT
Dry Whey Products	502,513	573,636	618,632	8%	44,996	MT
<i>Whey (0404.10)</i>	449,495	513,868	560,141	9%	46,273	MT
<i>WPC80+</i>	53,018	59,768	58,491	-2%	-1,277	MT
Cheese	328,590	371,705	415,583	12%	43,878	MT
Lactose	349,356	360,798	414,562	15%	53,764	MT
Butterfat	22,172	52,099	77,036	48%	24,936	MT
MPC	39,371	37,538	42,773	14%	5,235	MT
WMP	35,289	35,021	35,403	1%	382	MT
Infant Formula	29,955	26,094	27,284	5%	1,191	MT
Evap/Cond	9,531	15,118	19,028	26%	3,909	MT
Casein	2,766	2,495	3,337	34%	842	MT
Fluid	122,994	139,558	140,824	1%	1,267	000 L

# US Milk Price Outlook

## • Demand

- US consumer income and spending
- International demand

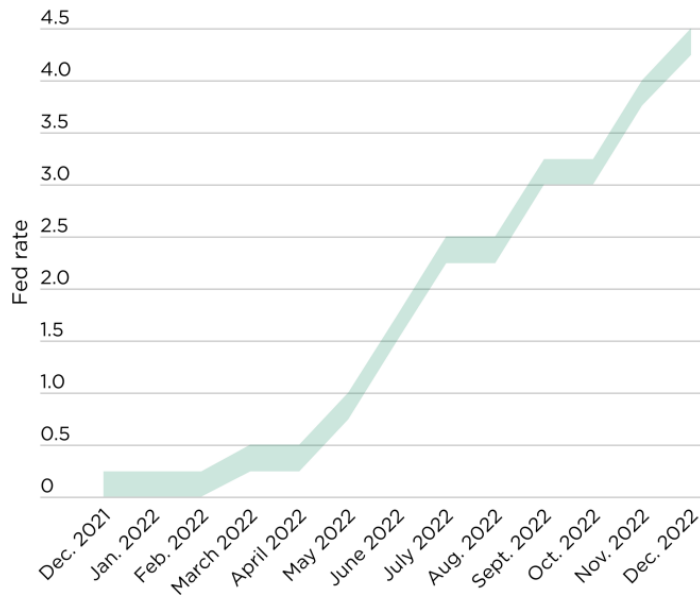
## • Supply

- Feed/fertilizer prices
- Weather
- Stocks

# Interest Rates

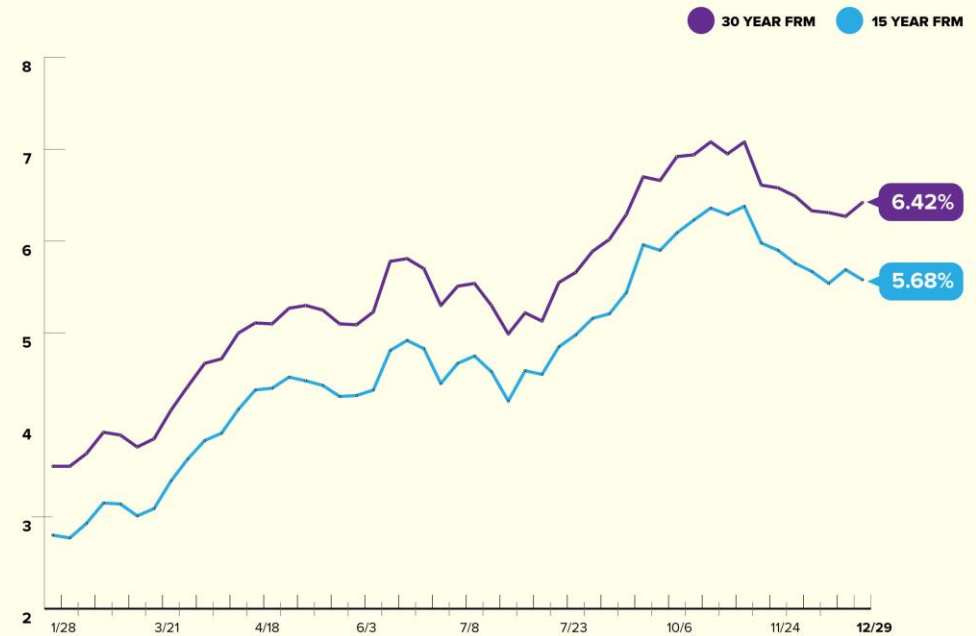
## The last year of Fed rate hikes

The Federal Reserve has been raising its funds rate at a steady clip to combat inflation.



Source: The Federal Reserve Bank of New York

## Mortgage Rate Trends



SOURCE: Freddie Mac

<https://money.com/current-mortgage-rates/>

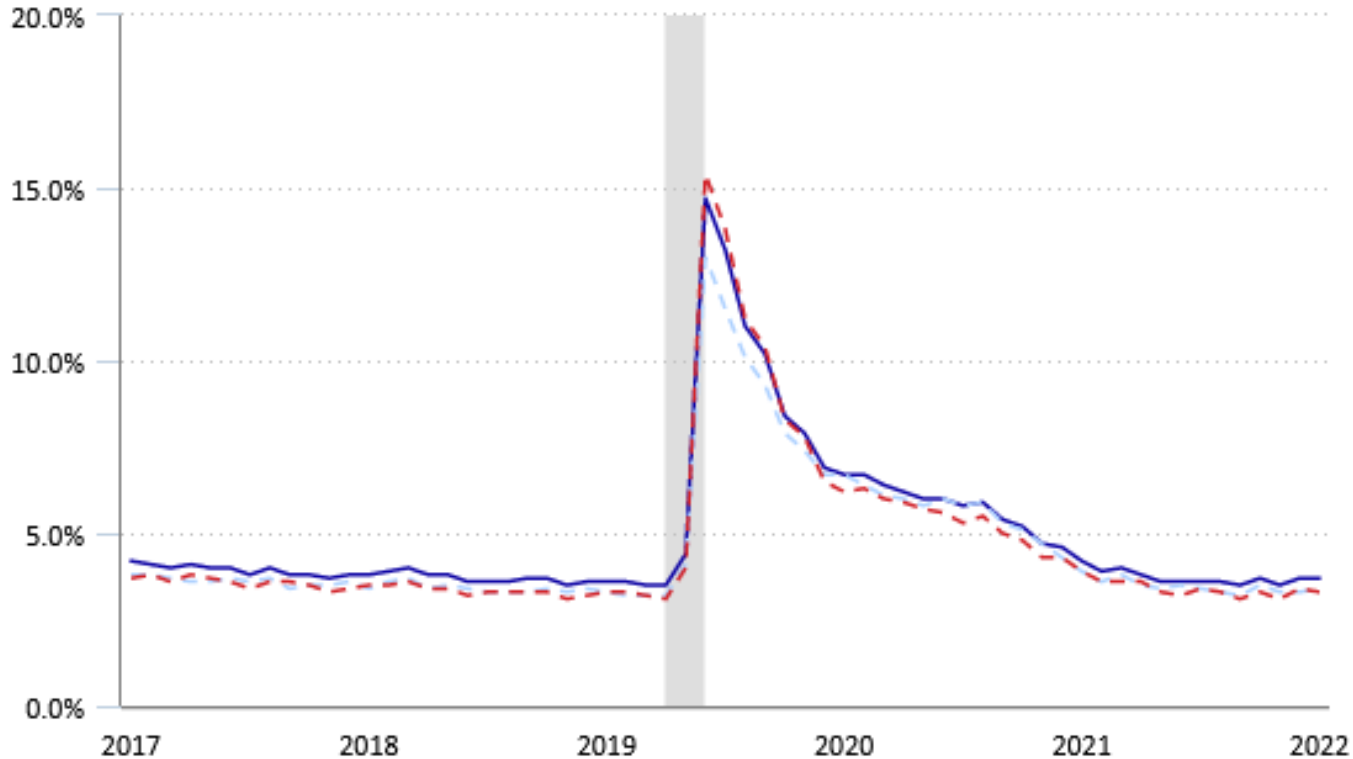




# Unemployment

## Civilian unemployment rate, seasonally adjusted

- Total
- Men, 20 years and over
- - - Women, 20 years and over
- ... 16 to 19 years old
- ... White
- ... Black or African American
- ... Asian
- ... Hispanic or Latino

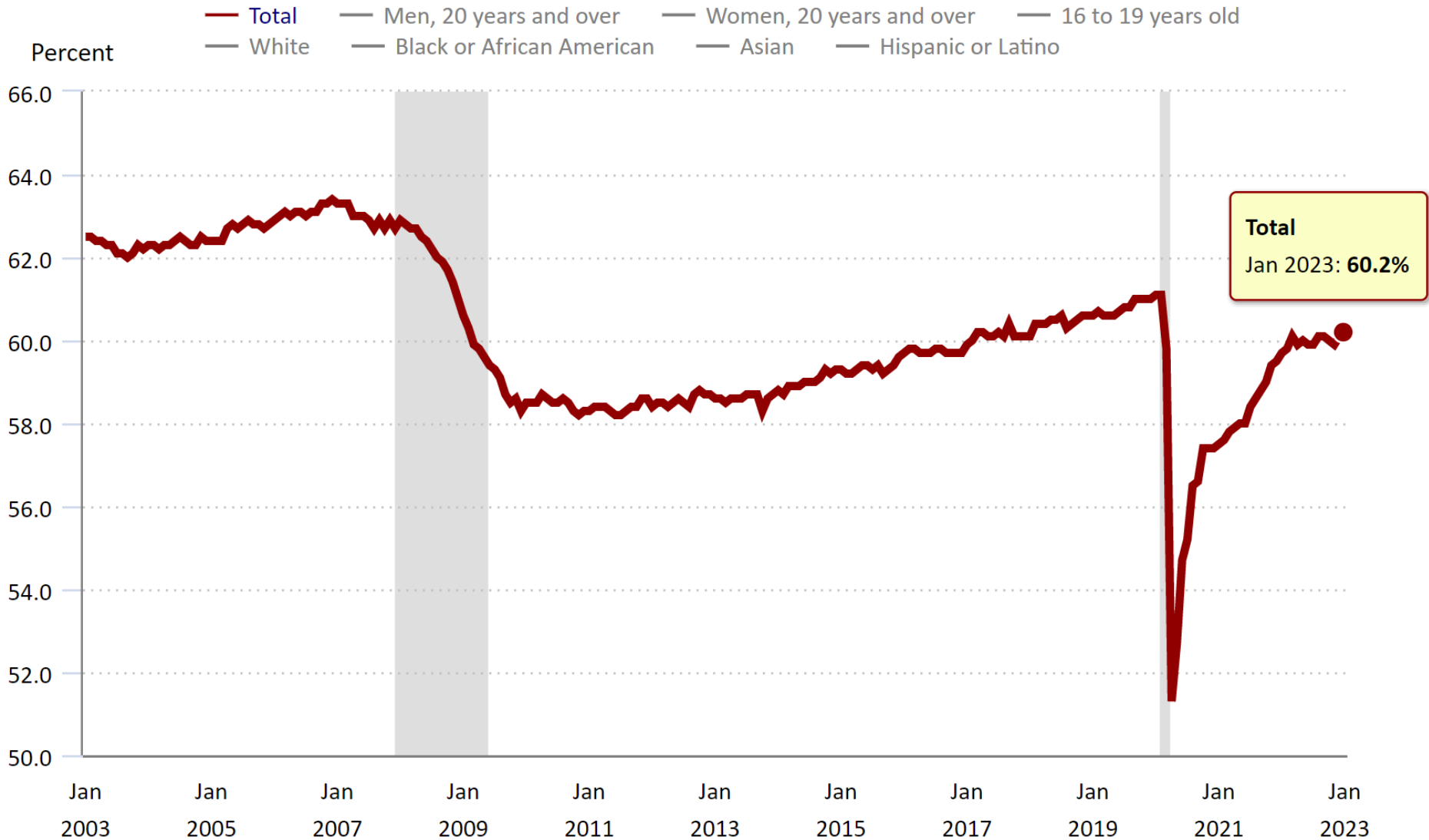


Click legend items to change data display. Hover over chart to view data.  
Shaded area represents a recession as determined by the National Bureau of Economic Research.  
Source: U.S. Bureau of Labor Statistics.



# Employment–population ratio, seasonally adjusted

Click and drag within the chart to zoom in on time periods



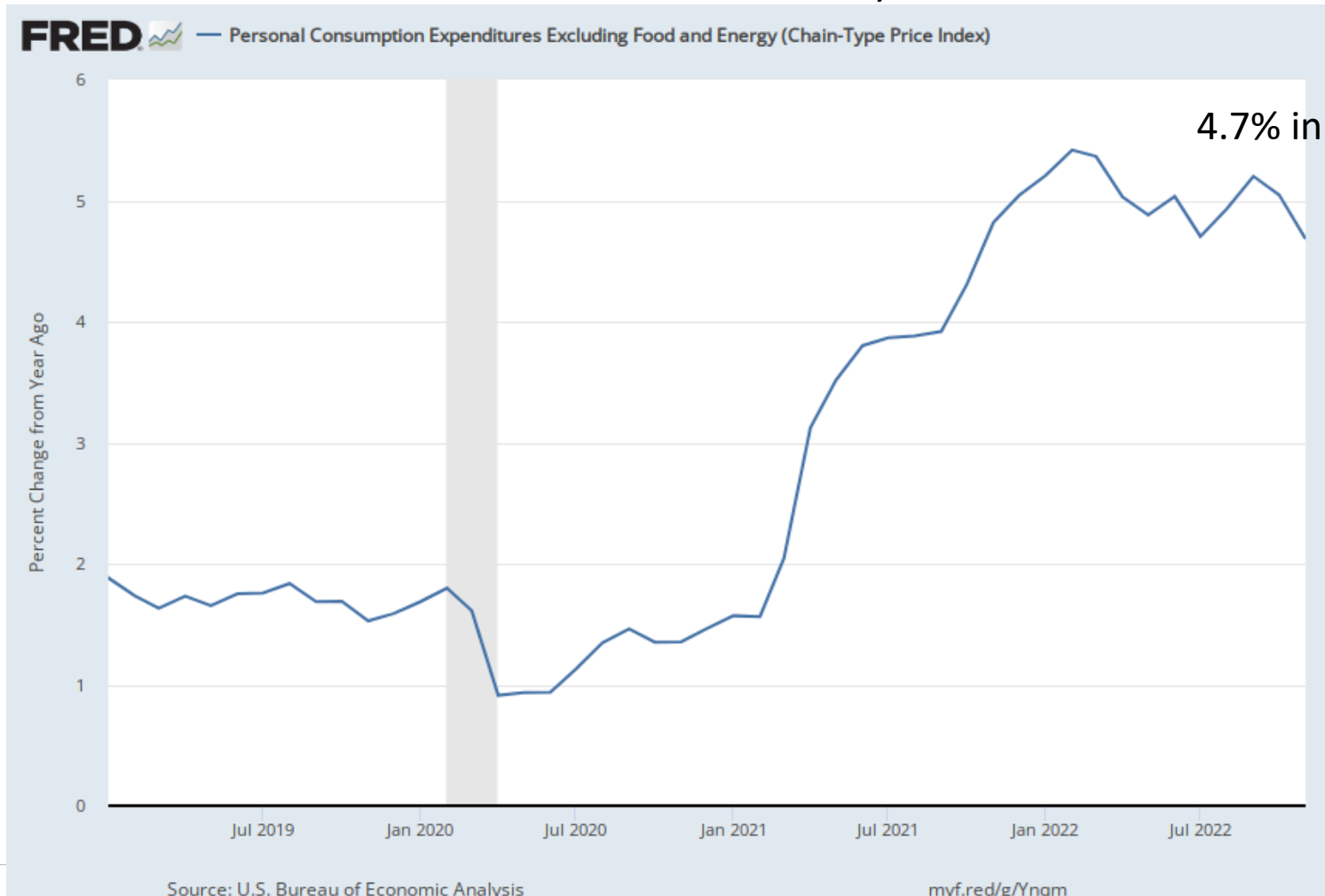
# Inflation



<https://www.nytimes.com/live/2023/01/12/business/december-cpi-inflation-report>

# Core Inflation in Personal Consumption Expenditures

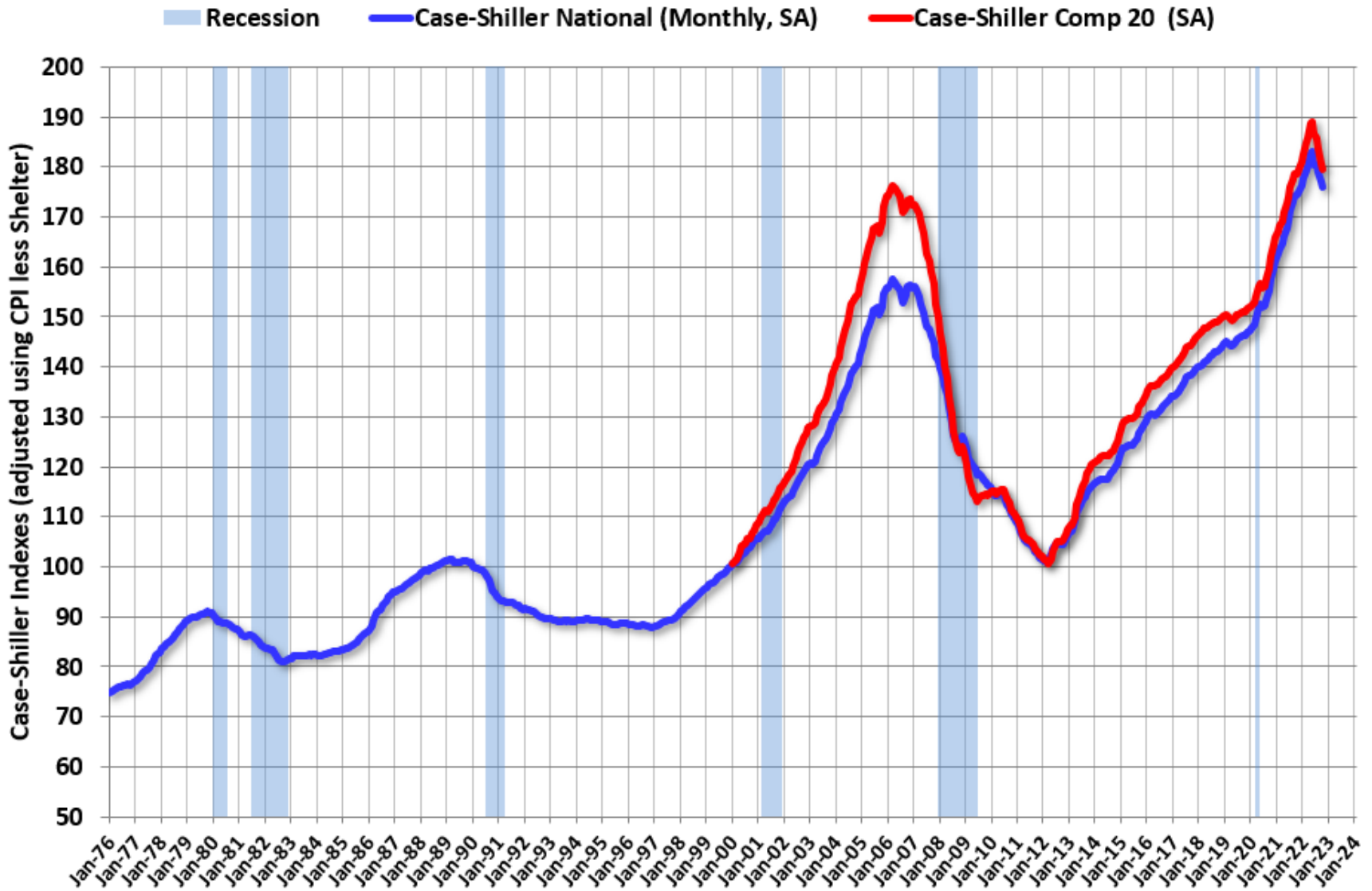
This is the one the Fed watches and which they want to be around 2%



Source: U.S. Bureau of Economic Analysis

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

# Real House Prices

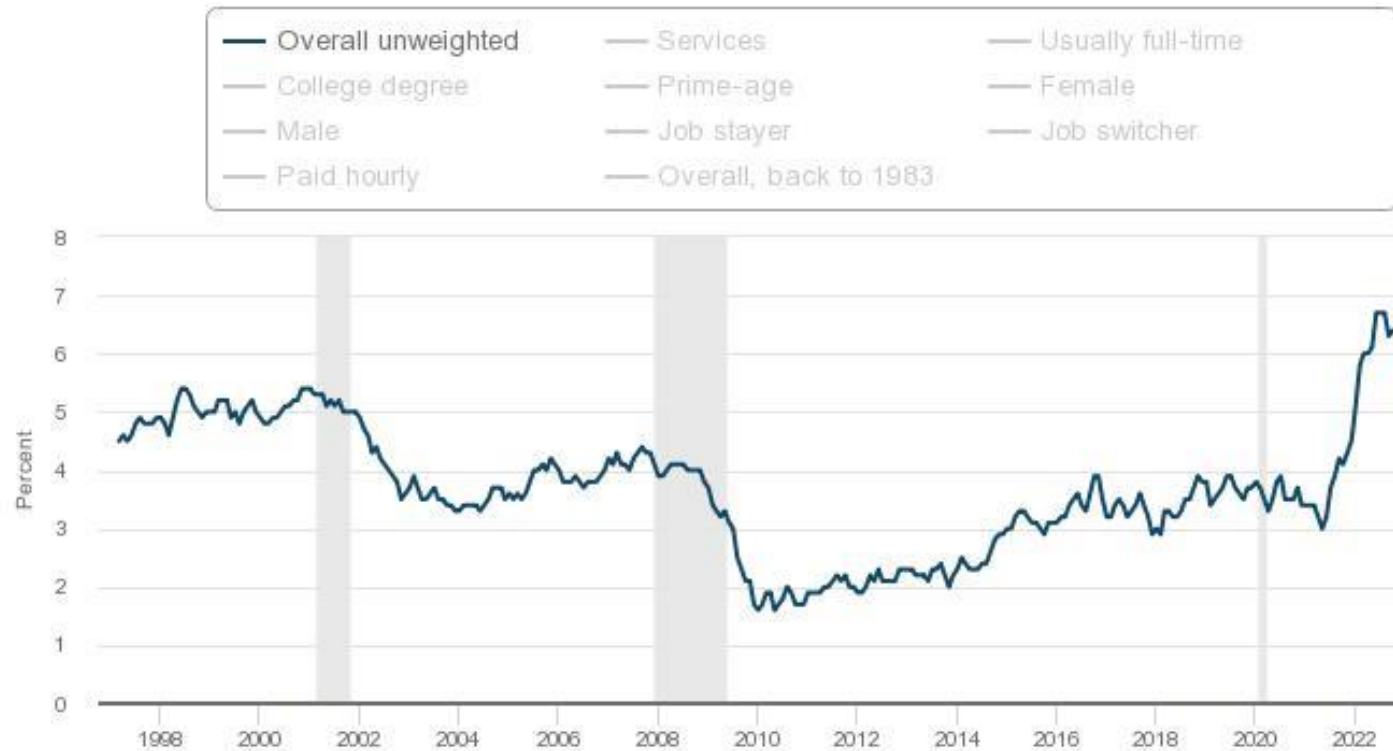


<http://www.calculatedriskblog.com/>

# Wage Growth Continues to be Strong

## Wage Growth Tracker

three-month moving average of median wage growth, hourly data

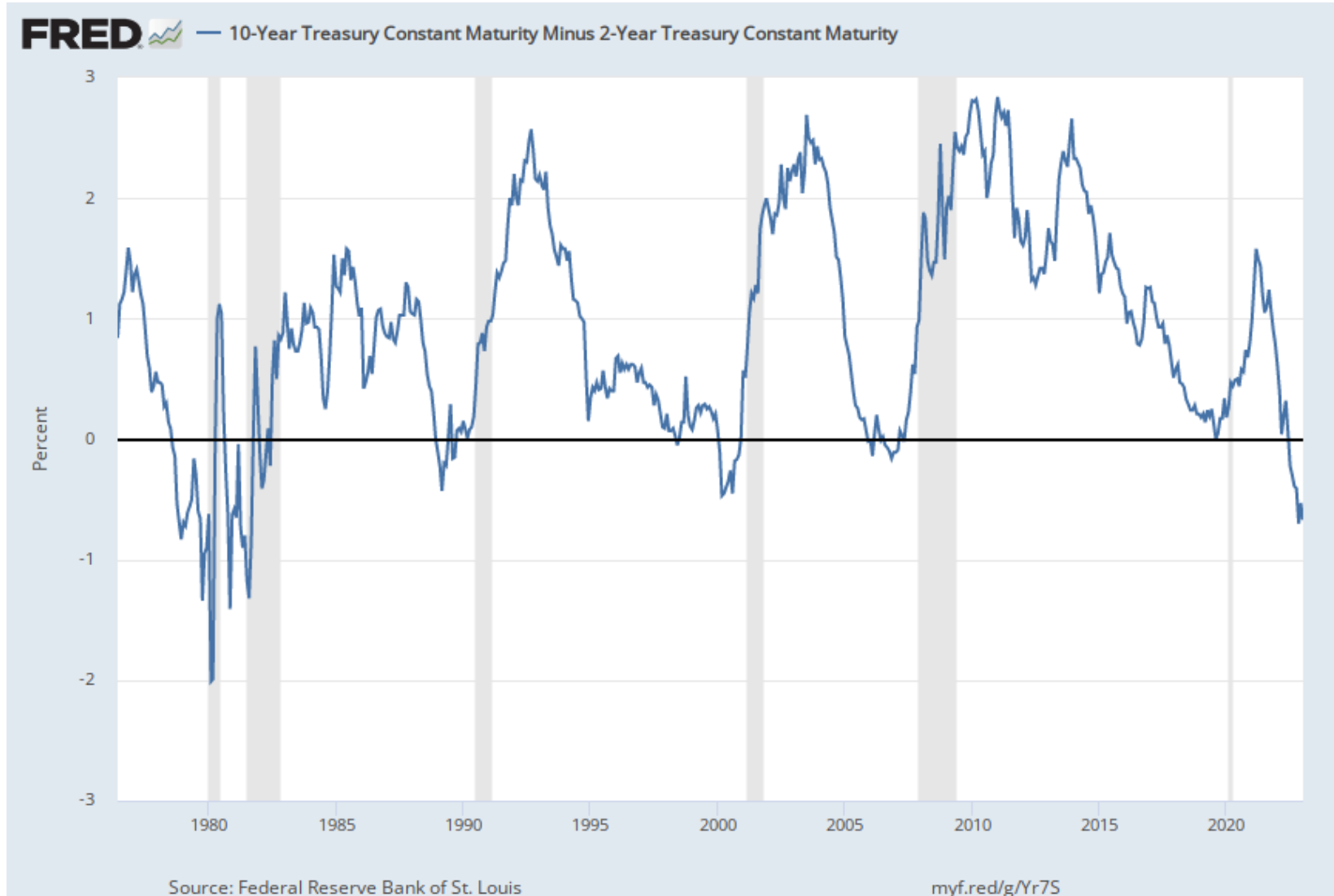


Sources: Current Population Survey, Bureau of Labor Statistics and author's calculations

<https://www.atlantafed.org/chcs/wage-growth-tracker>

Exported on: Tuesday, January 3, 2023

# 10-year bond minus 2-year bond rate

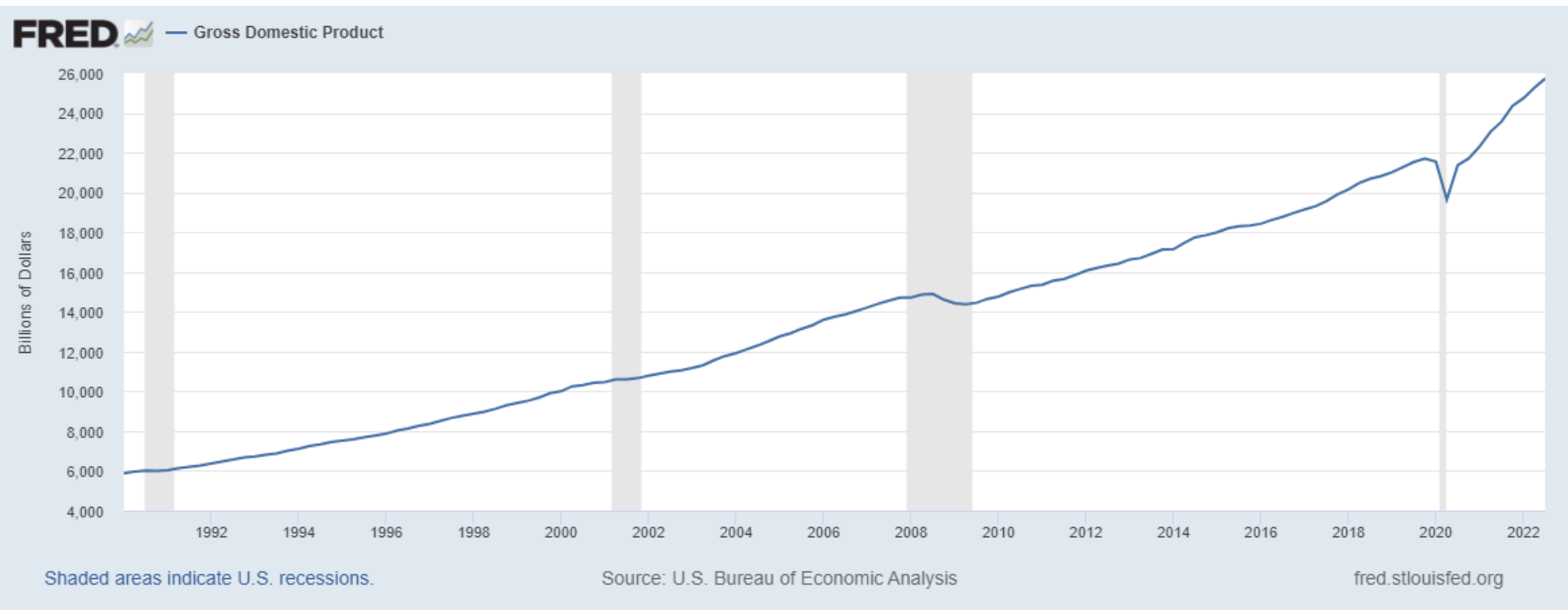


# US Recessions since 1990

Dates	Length	Cause	Peak Unemployment	GDP decline
July '90 – Mar '91	8 mos	Oil prices, inflation triggered interest increase	7.8%	-1.4%
Mar '01 – Nov '01	8 mos	Tech bubble	6.3%	-0.3%
Dec '07 – Jul '09	18 mos	Housing mortgage crisis	10.0%	-5.1%
Feb '20 – Apr '20	2 mos	COVID	14.7%	-19.2%



# Recessions-less eating out



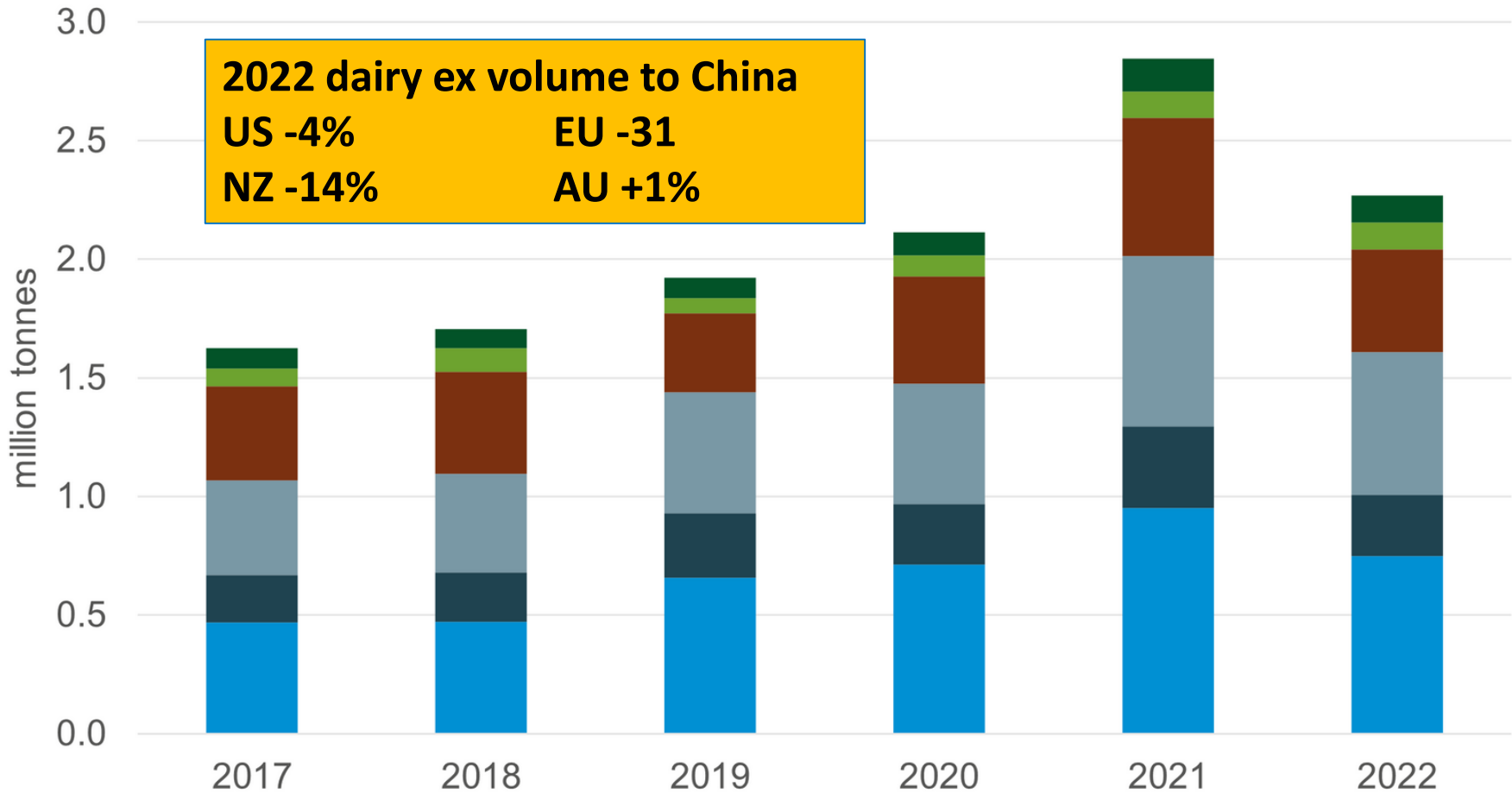
# Consumption Patterns Since 1990

Dairy Product	Non-recession years % change per capita	Recession years % change per capita
Fluid milk	-1.7	-0.9
Cheese	1.5	0.3
Butter	1.4	0.7
Yogurt	4.4	4.9

China	2022				
MMT	Fluid	WMP	SMP	Cheese	Butter
Production	40,350	1,050	25	20	13
Imports	1,050	750	350	155	140
Consumption	41,400	1,800	375	175	153
% imported	2.5	41.7	93.3	88.6	91.5

# Chinese dairy product imports, year to date (Jan-Sep)

- Milk and cream
- SMP
- WMP
- Whey products
- Butter and butteroil
- Cheese and curd

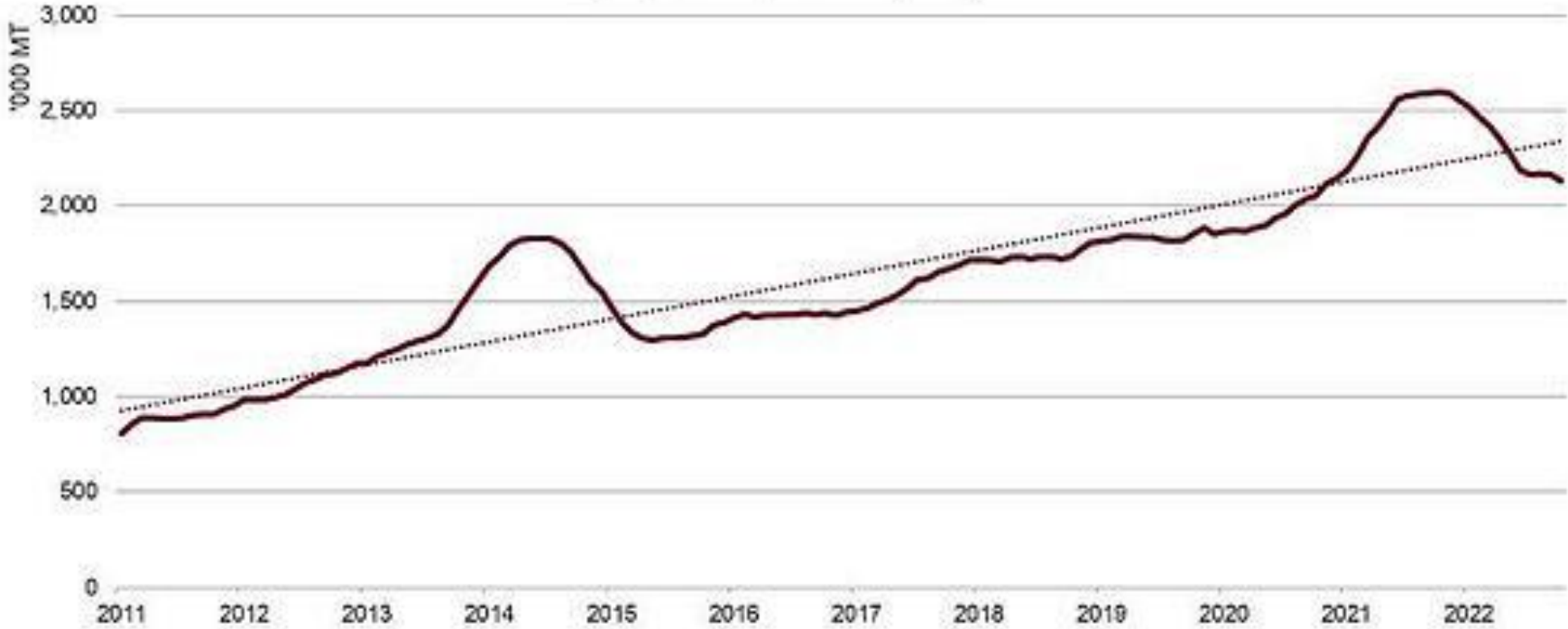


**2022 dairy ex volume to China**  
**US -4%**                      **EU -31**  
**NZ -14%**                    **AU +1%**

Source: compiled by Trade Data Monitor LLC

# Global Dairy Trade to China

(Rolling 12 Months, Milk Solids Equivalent)



Source: USDEC

# Dutch Natural Gas Price

Natural Gas EU Dutch TTF (EUR/MWh) 58.11 +0.22 (+0.38%)

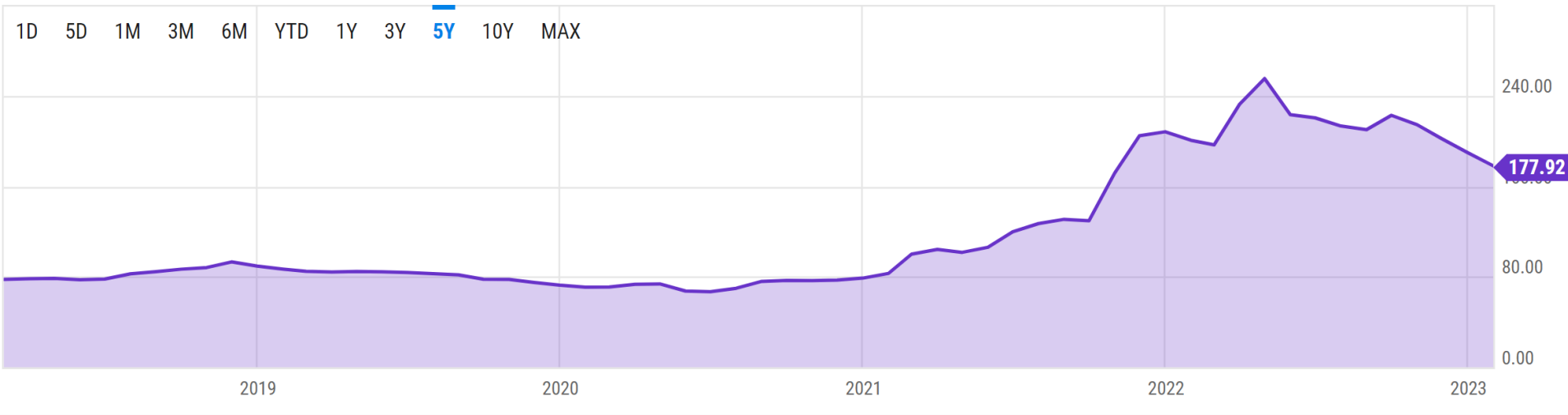


Mar May Jul Sep Nov 2023

1D 1W 1M 6M 1Y 5Y 10Y All



# Fertilizer Price Index



# Weather

- **El Nino**: Warmer waters cause the Pacific jet stream to move south of its neutral position. With this shift, areas in the northern U.S. and Canada are dryer and warmer than usual. But in the U.S. Gulf Coast and Southeast, these periods are wetter than usual and have increased flooding.
- **La Nina** is the colder counterpart of El Niño, as part of the broader El Niño–Southern Oscillation (ENSO) climate pattern.
- Affects crops/pasture around the globe.
- 2023 is projected to be the third consecutive year of La Nina.

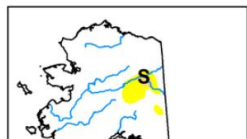
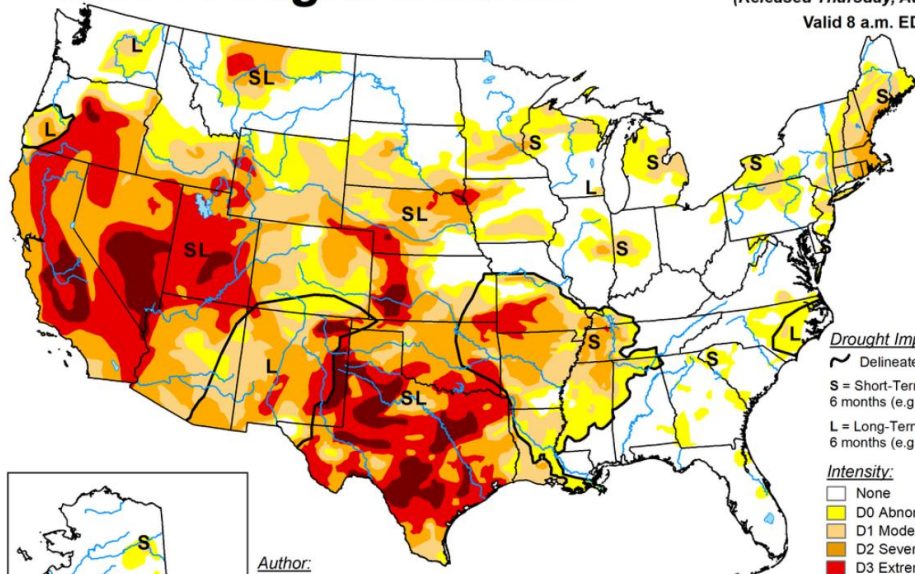


# La Nina Implications

- Dryer/drought
  - Brazil
  - Argentina
  - Texas/Central Plains
  - Africa
  - New Zealand
- Storms
  - Colder/stormier in Northern US
  - More Atlantic Hurricanes
- More precipitation
  - Australia
  - Southeastern Asia (rice)

# U.S. Drought Monitor

August 2, 2022  
(Released Thursday, Aug. 4, 2022)  
Valid 8 a.m. EDT



*Author:*  
Curtis Riganti  
National Drought Mitigation Center

### Drought Impact Types:

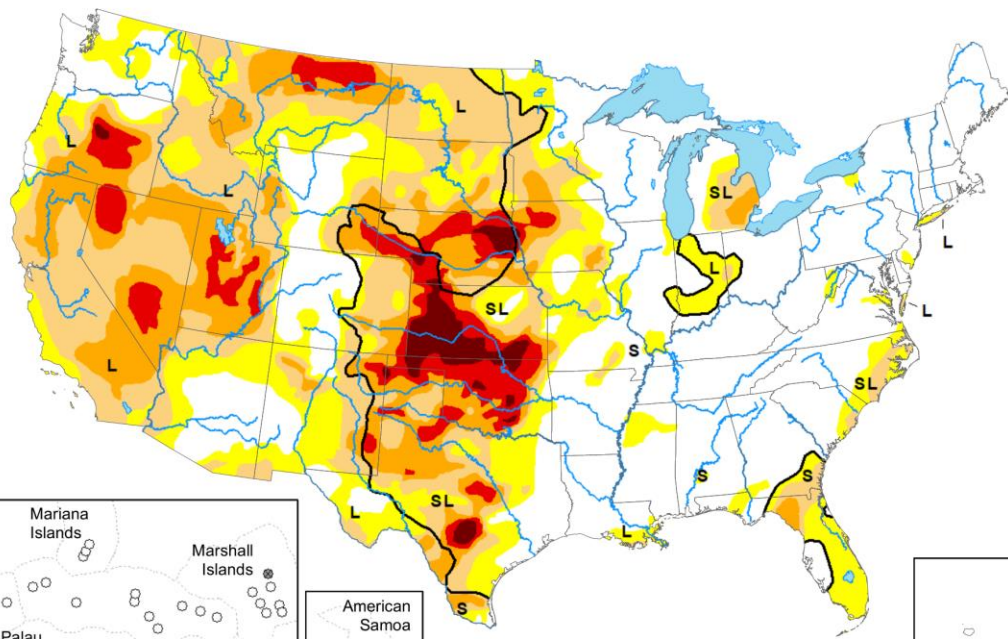
- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

### Intensity:

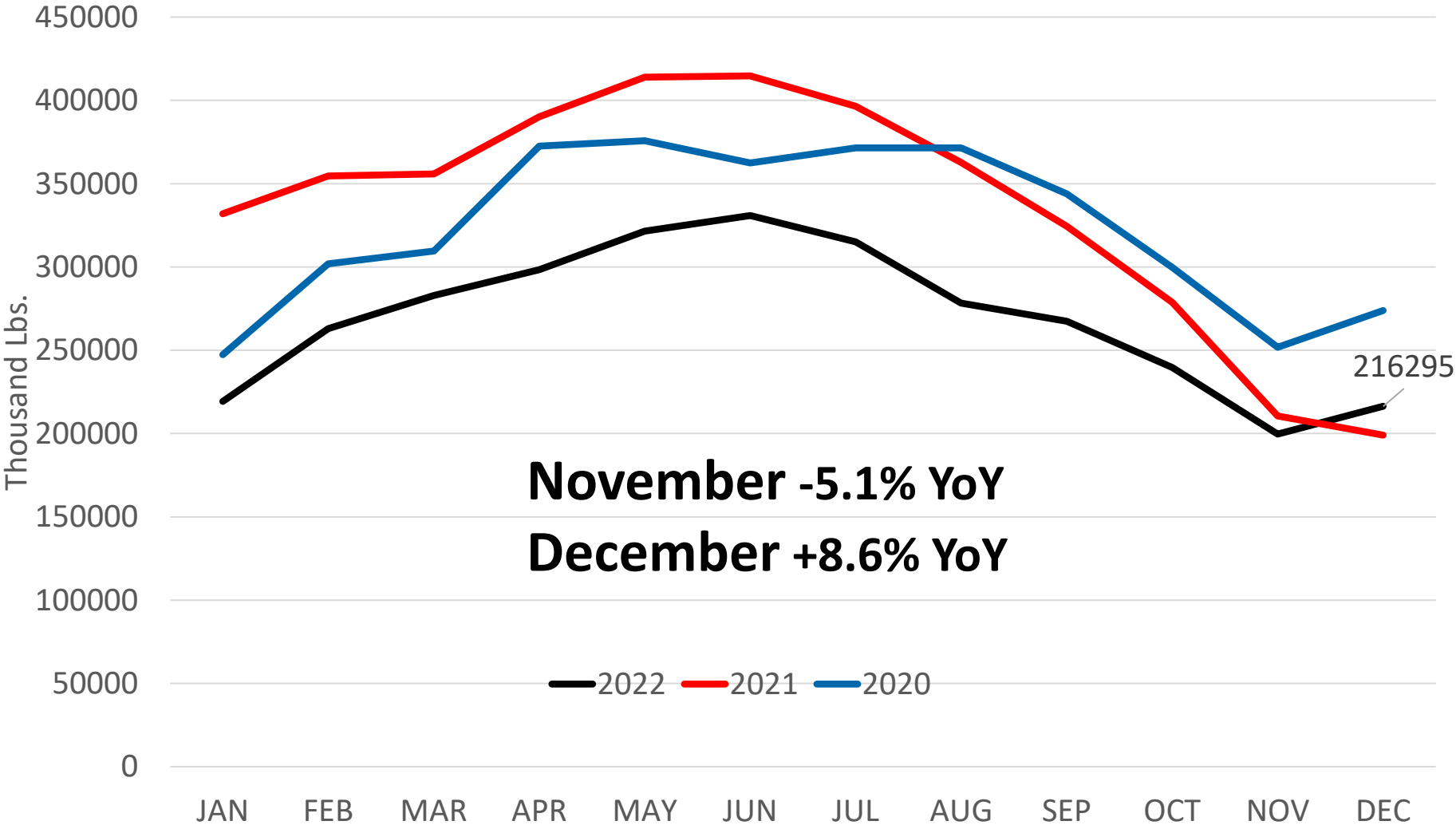
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

**Map released: February 2, 2023**

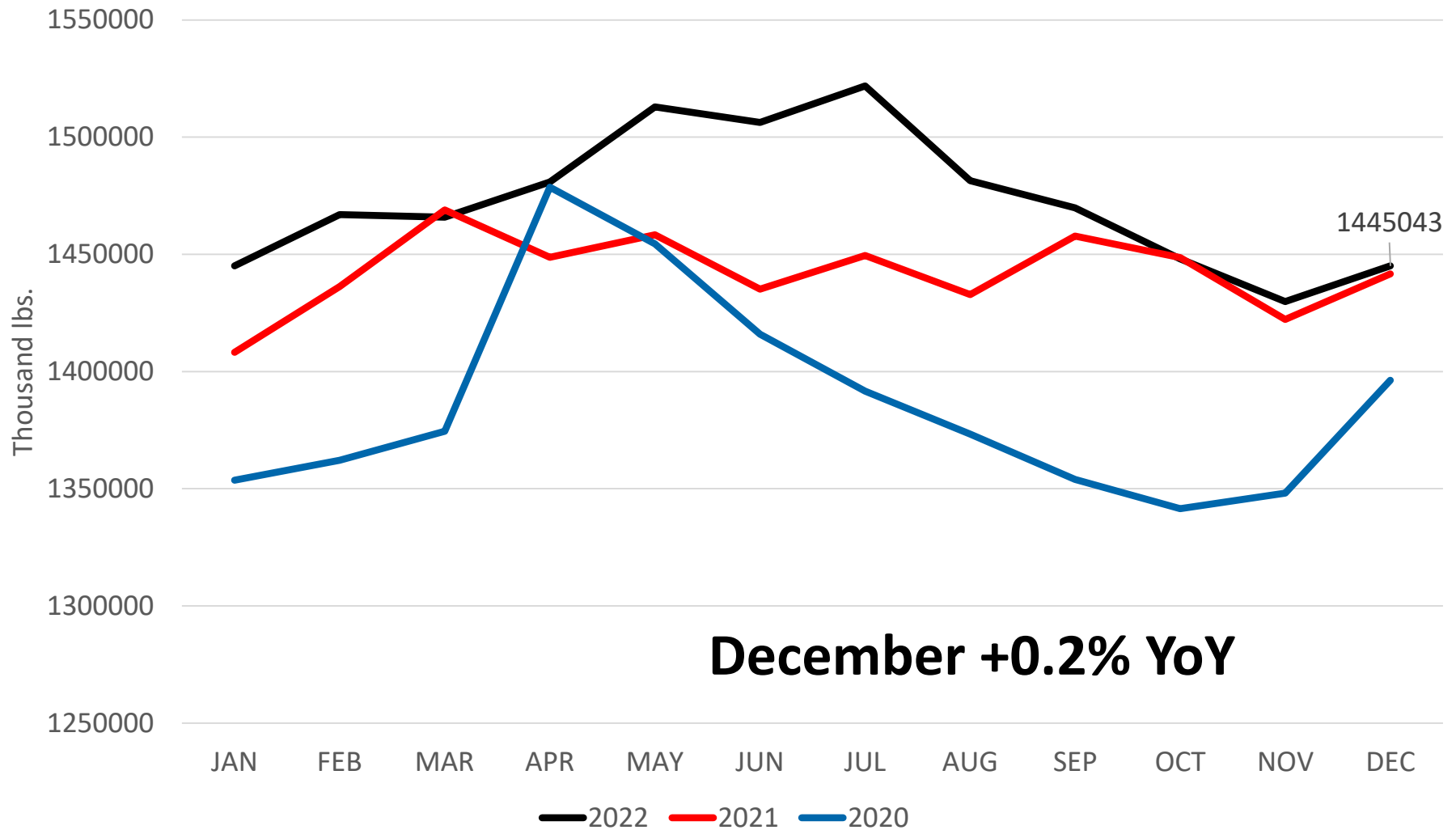
**Data valid: January 31, 2023**



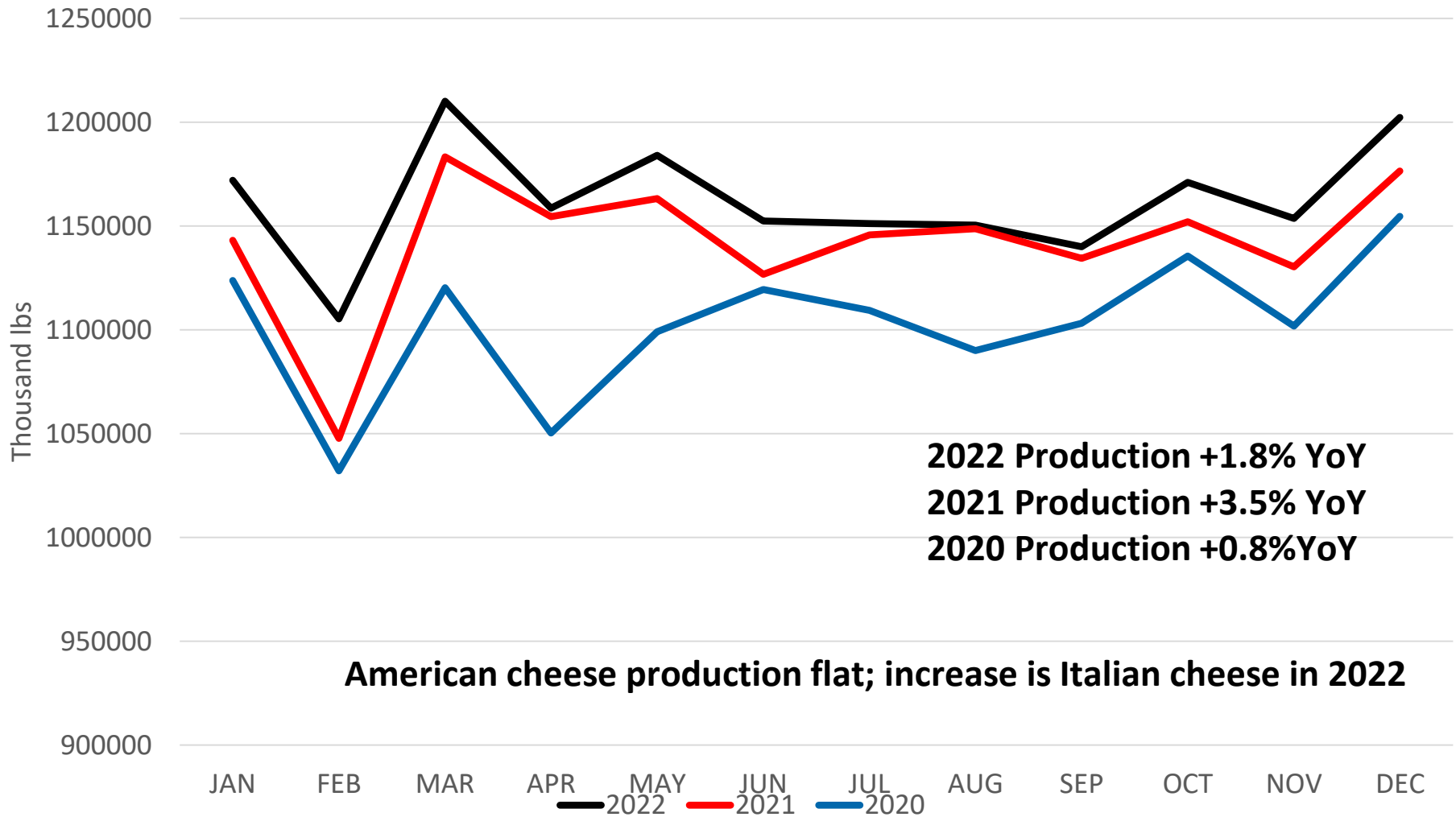
# Butter Stocks



# Natural Cheese Stocks



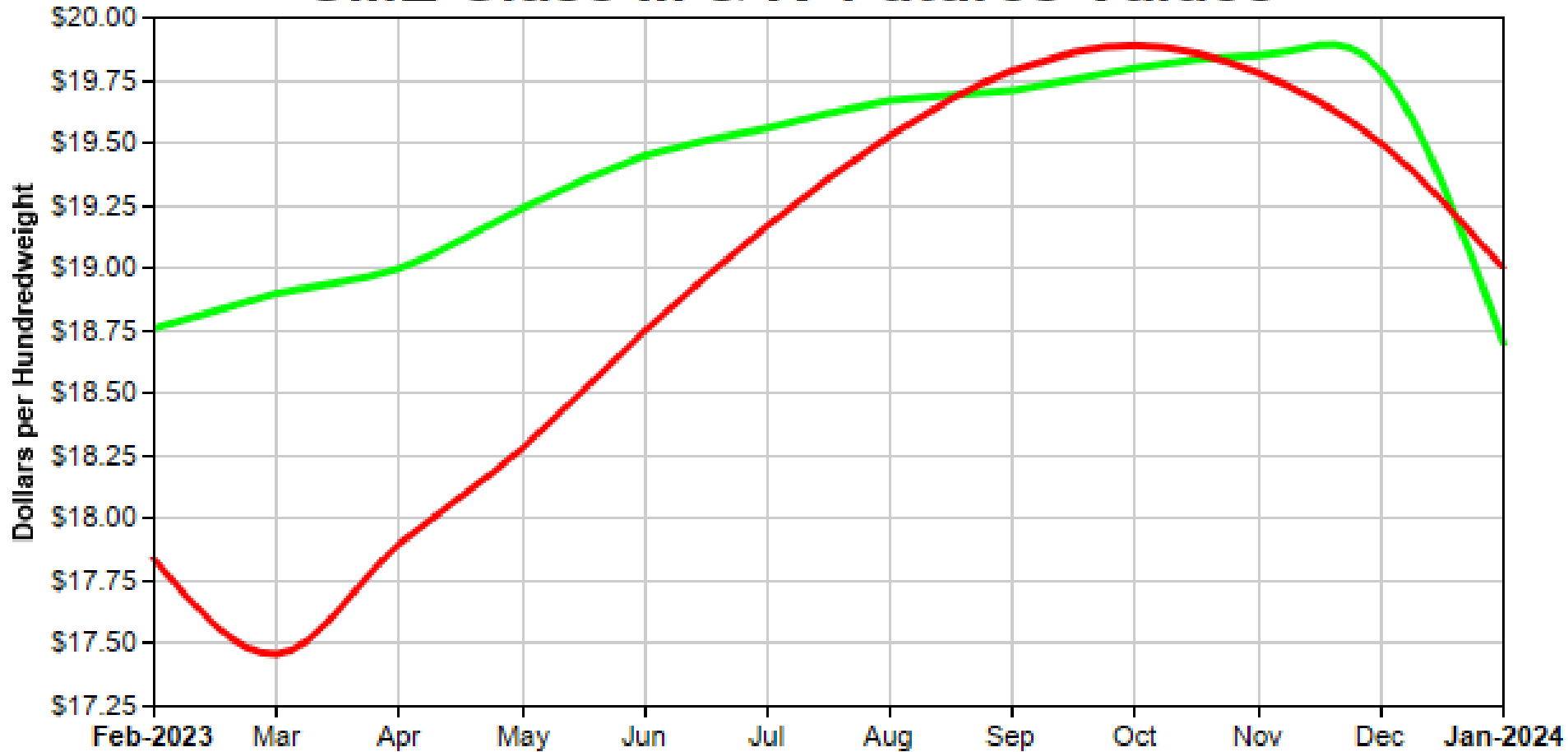
# Cheese Production



# 2023 Milk Production Forecast

- **New Zealand:** milk production to be flat to slightly lower due to La Nina and high input costs
- **EU:** After an EU-wide drought in 2022, the EU27 dairy herd is forecast to drop below 20 million head in 2023. This will lead to a continued decrease in milk production and deliveries for factory use despite higher farm gate milk prices.
- **US:** The milk production projection for 2023 is increased by 0.3 billion pounds, with higher expected cow numbers and slightly faster growth of yield per cow.

# CME Class III & IV Futures Values

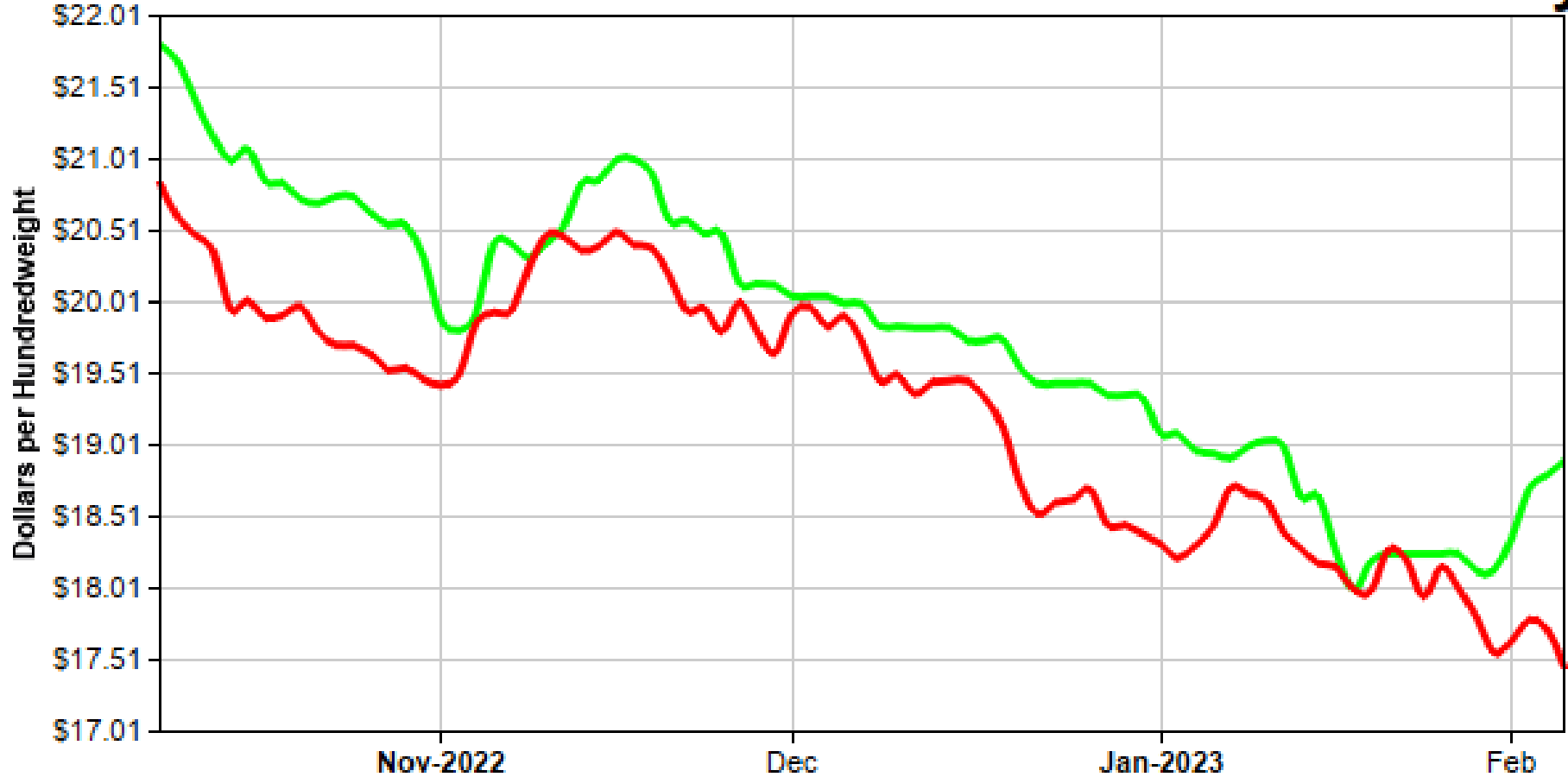


■ Class III Futures

■ Class IV Futures

*Updated 2/6/23*

# Mar-23 CME Milk Contract Prices Over Past 120 Days



■ Class III Futures

■ Class IV Futures

*Updated 2/6/23*



# USDA Prices

## January WASDE

Commodity	2022	2023 Forecast
Corn	\$6.77/bu	\$6.70/bu
Soybeans	\$14.88/bu	\$14.20/bu
All Milk	\$25.55/cwt	\$21.60/cwt

# CORN FUTURES (DEC 2023) · 1D · CBOT



O595'2 H597'2 L592'0 C594'4 -1'4 (-0.25%)

Vol 12.548K

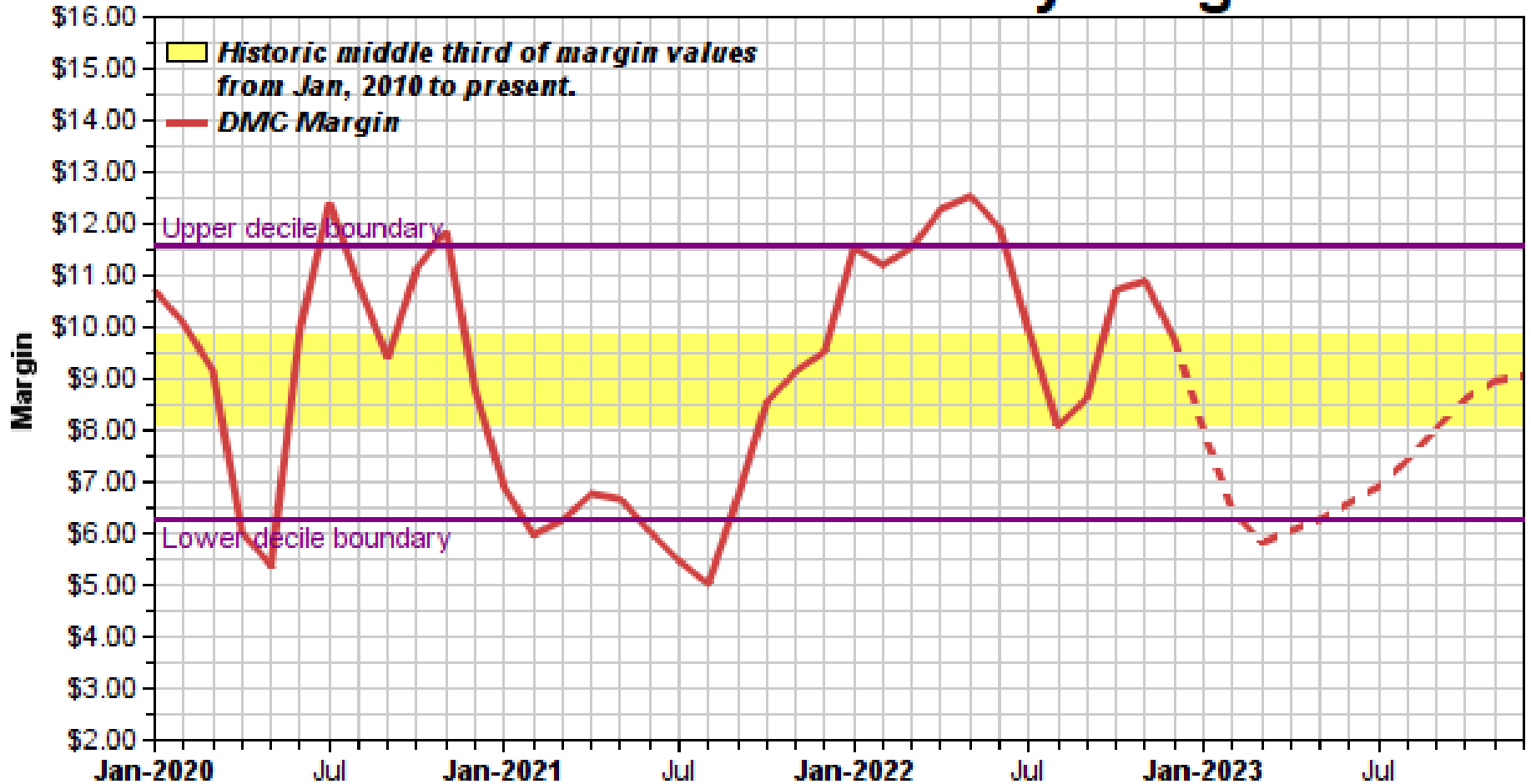


CME Group

powered by TradingView



# Actual and Forecast Dairy Margin



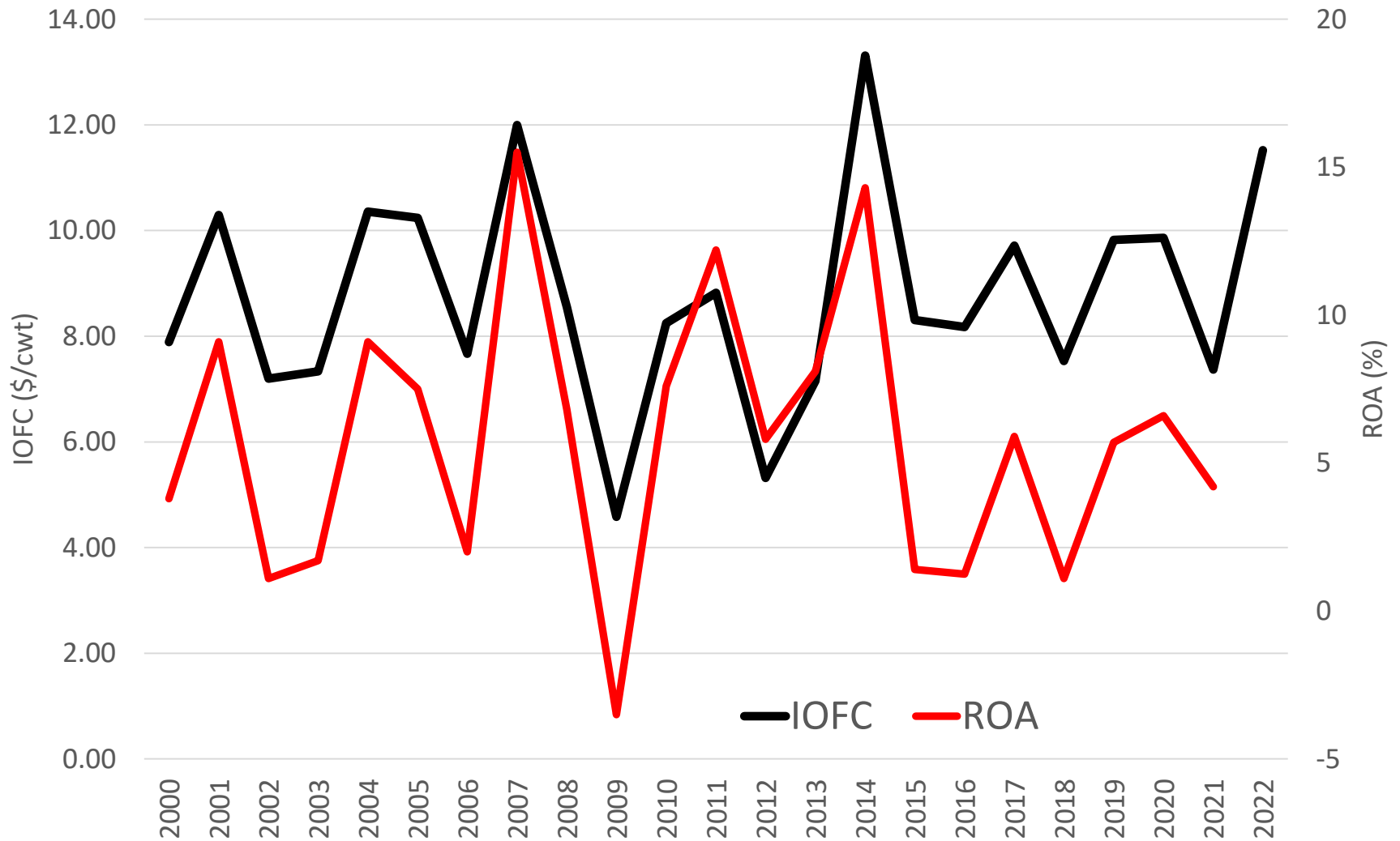
Updated 2/6/23

# DMC Forecast

February 6, 2023

MONTH	ALL MILK PRICE FORECAST (\$/CWT)	CORN PRICE FORECAST (\$/BU)	PREMIUM/SUPREME ALFALFA HAY PRICE FORECAST (\$/TON)	SOYBEAN MEAL PRICE FORECAST (\$/TON)	FEED COST FORECAST (\$/CWT)	DMC MARGIN FORECAST (\$/CWT)
Jan	\$23.16	\$6.58	\$332	\$462.85	\$15.02	\$8.14
Feb	\$21.46	\$6.40	\$331	\$507.79	\$15.13	\$6.33
Mar	\$20.82	\$6.34	\$308	\$513.90	\$14.79	\$6.03
Apr	\$20.91	\$6.29	\$293	\$509.28	\$14.51	\$6.40
May	\$20.94	\$6.26	\$292	\$502.00	\$14.41	\$6.53
Jun	\$21.10	\$6.22	\$285	\$495.84	\$14.23	\$6.87
Jul	\$21.37	\$6.16	\$282	\$490.47	\$14.07	\$7.30
Aug	\$21.75	\$6.03	\$280	\$475.33	\$13.80	\$7.95
Sep	\$22.23	\$5.87	\$278	\$454.43	\$13.45	\$8.78
Oct	\$22.62	\$5.74	\$276	\$435.52	\$13.15	\$9.47
Nov	\$23.01	\$5.65	\$287	\$429.05	\$13.14	\$9.87
Dec	\$23.00	\$5.56	\$280	\$426.21	\$12.94	\$10.06
2023	\$21.86	\$6.09	\$293.82	\$475.22	\$14.05	\$7.81

# IOFC and ROA NY farms



# Dairy Policy

- Farm Bill
- Federal Milk Marketing Orders
- Other related areas
  - Environment, labor, energy, trade

# Thank You

Chris Wolf

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