



Western WI Ag Lenders Conference

2023 Dairy Outlook

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Outline

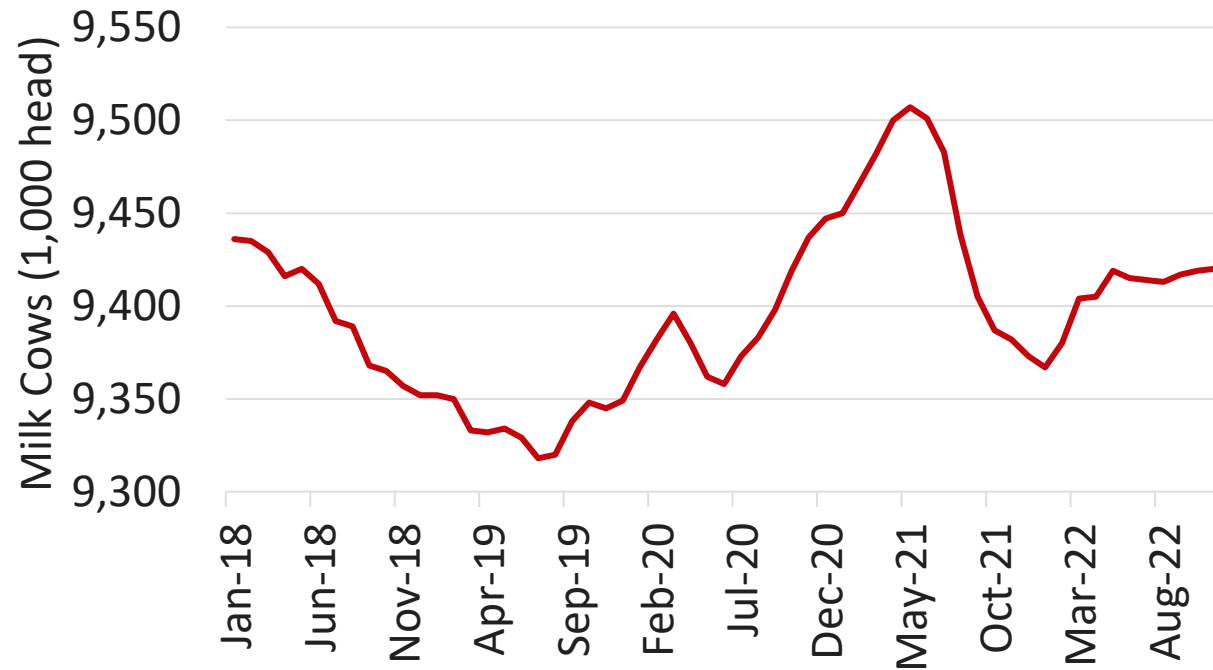
- Milk production year in review
- Dairy utilization and stocks
- World view
- Additional Economic Factors
- Farm level



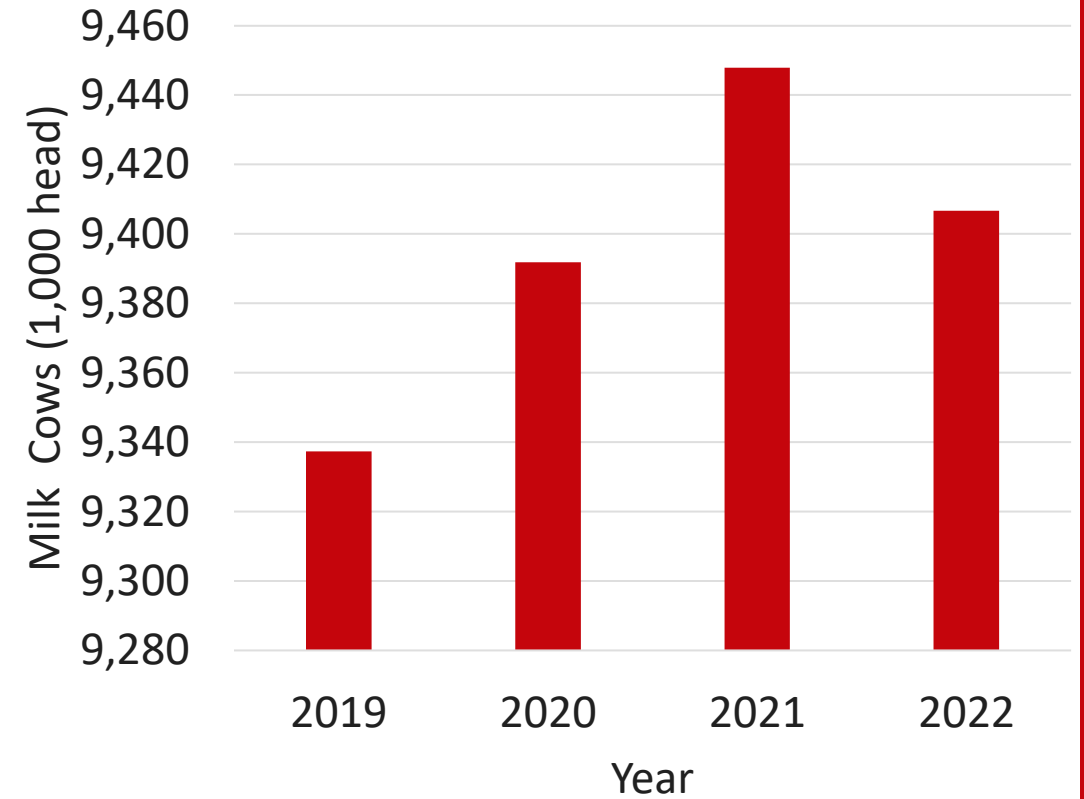
National Dairy Herd Cow Numbers



Number of US Milk Cows, 2018-2022



Ave Milk Cows Per Year

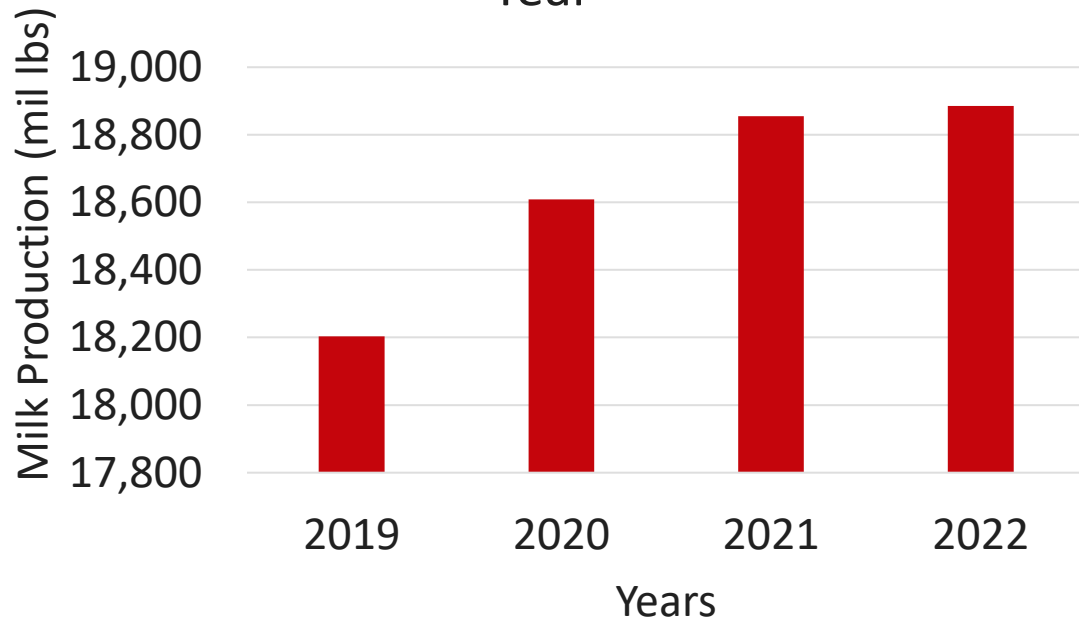




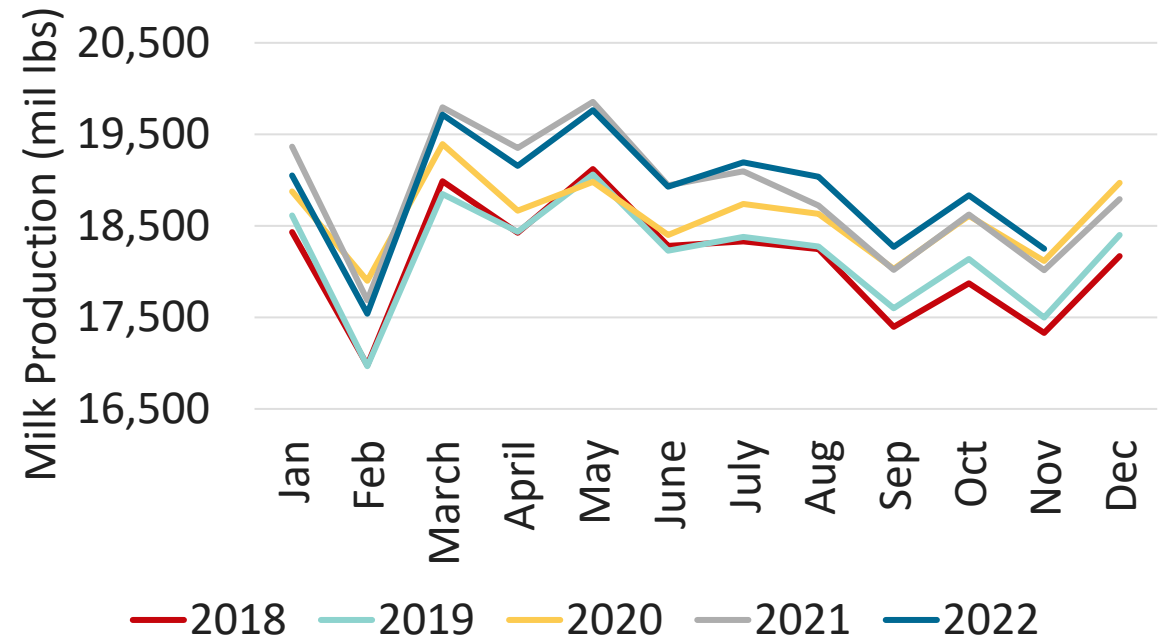
National Herd Milk Production



US Ave Monthly Milk Production By Year



Ave US Milk Production

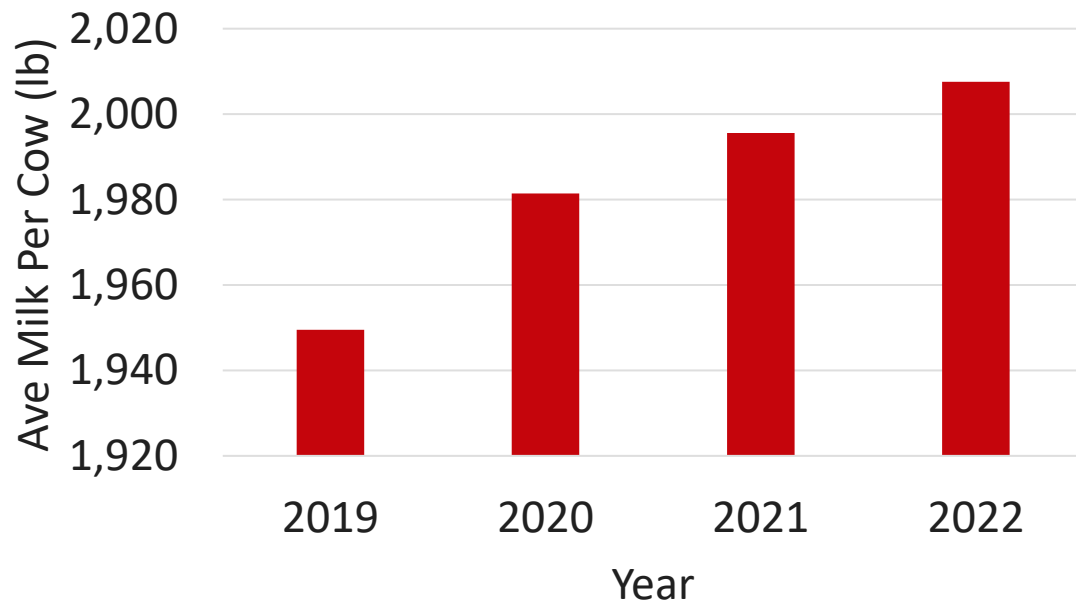




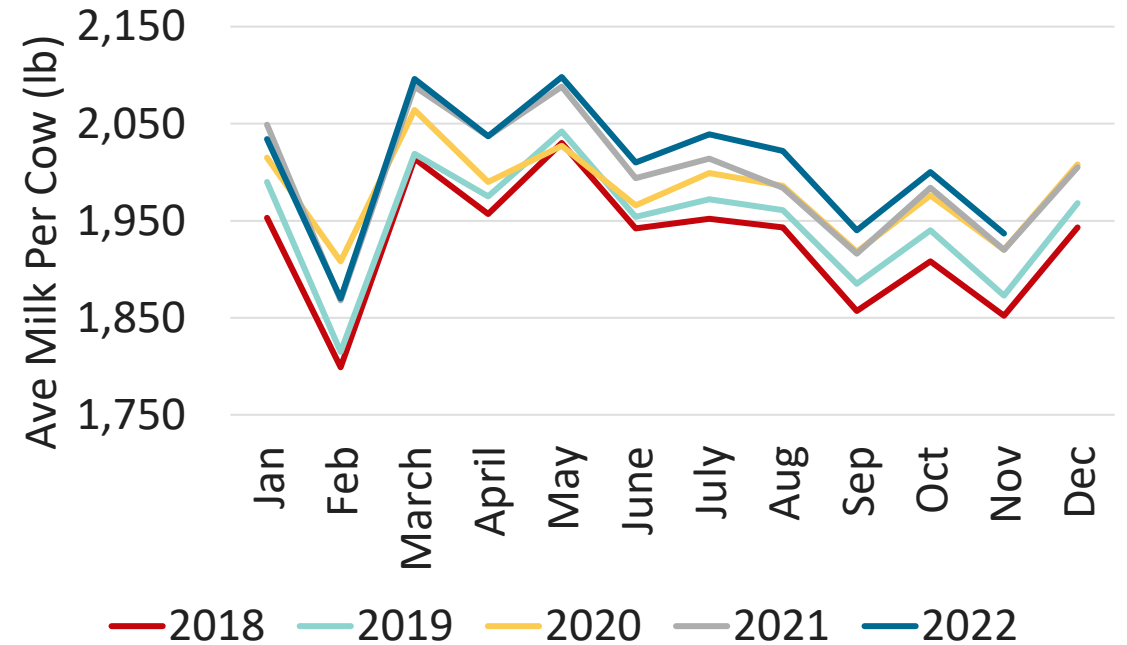
National Dairy Herd Production Per Cow



US Ave Milk Production Per Cow Per Year

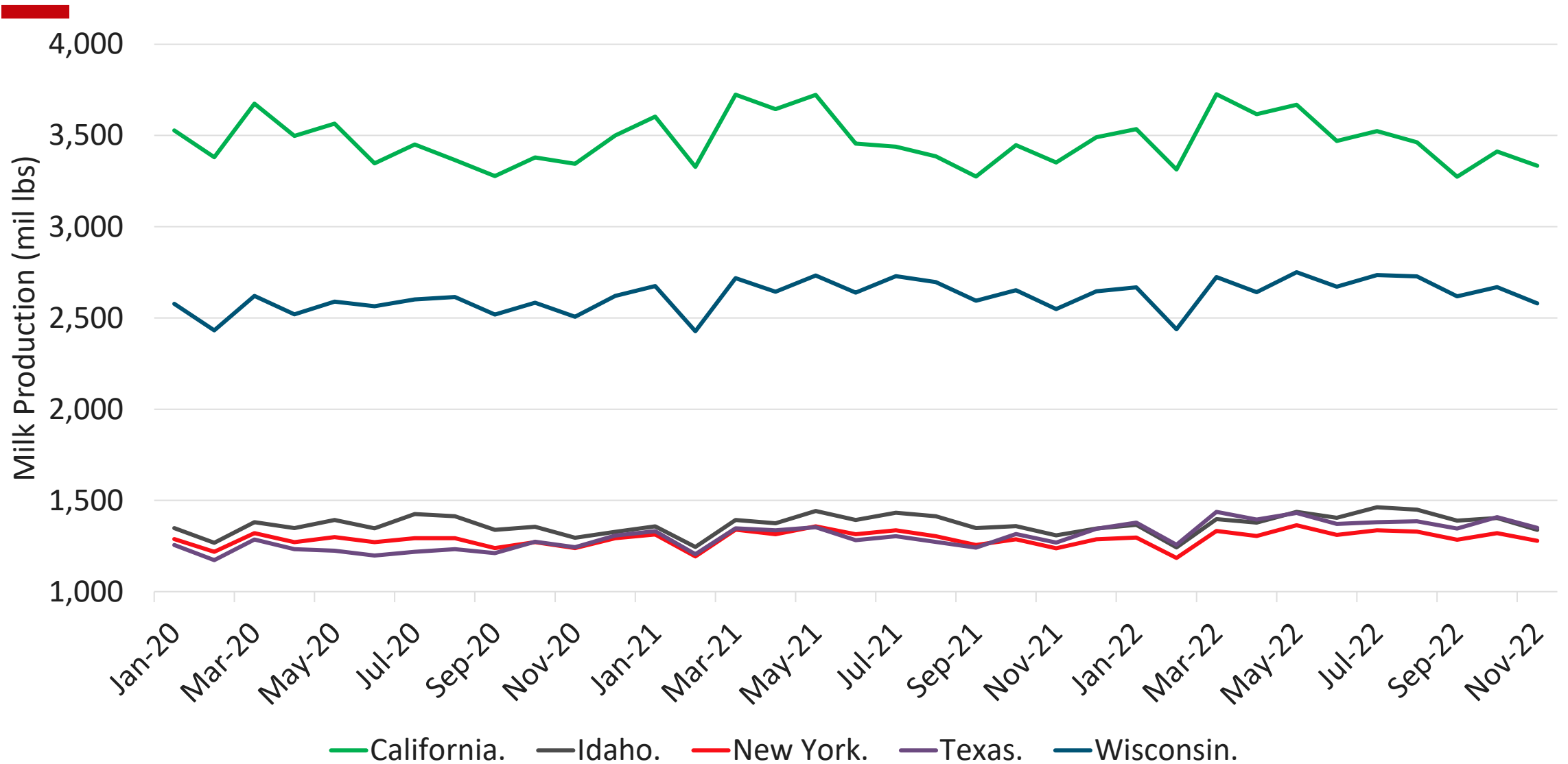


US Average Milk Production Per Cow





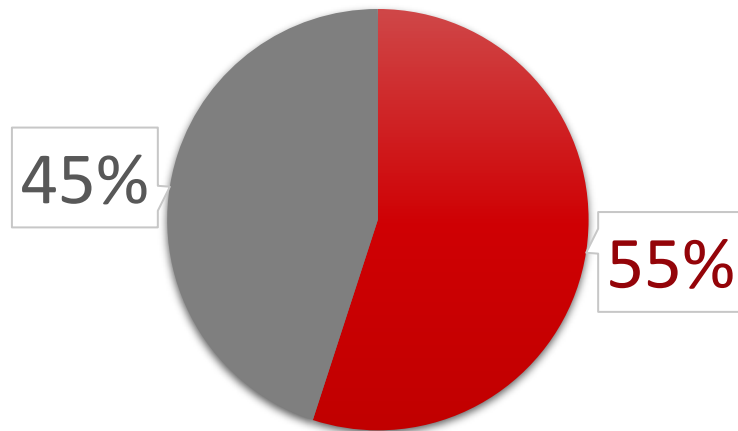
Top 5 Milk Producing States



Top 5 Milk Producing States Percent of Total US Production

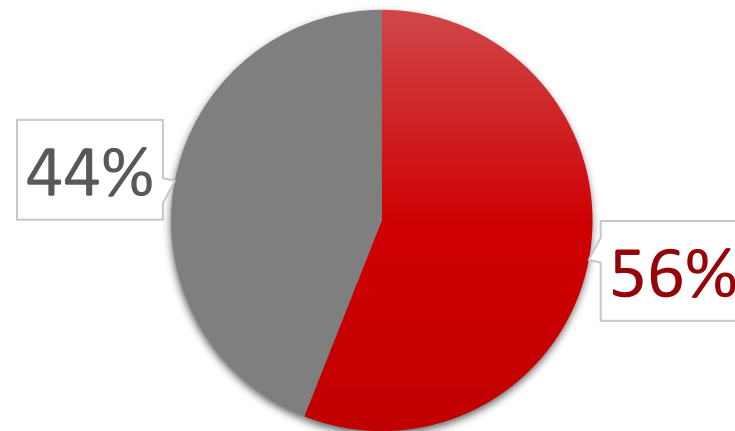


2018-2019



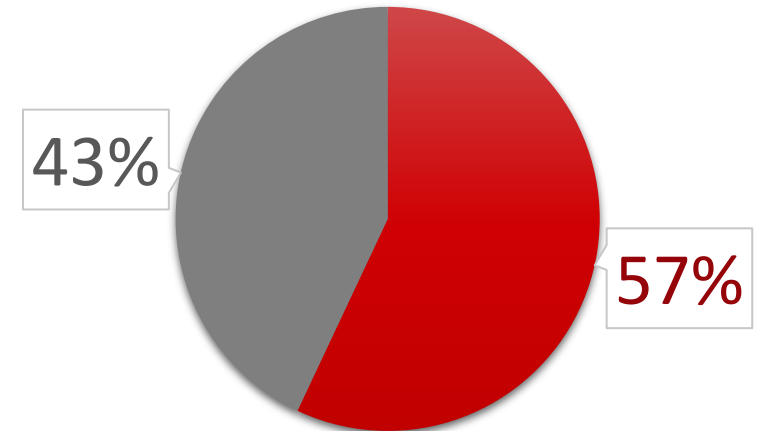
■ Top 5 Milk Producing States
■ Rest of US Milk Production

2020-2021



■ Top 5 Milk Producing States
■ Rest of US Milk Production

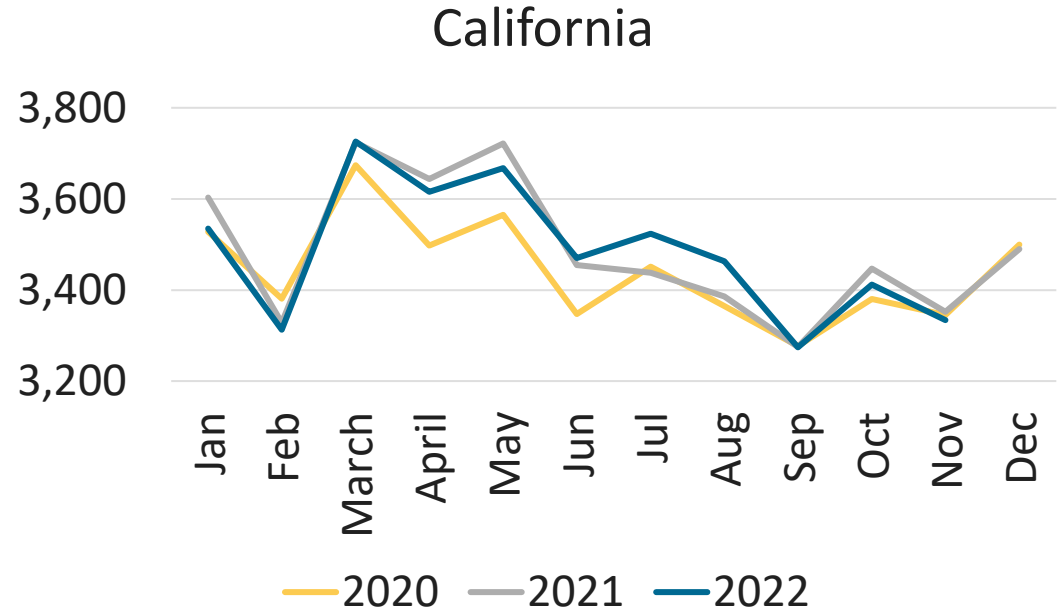
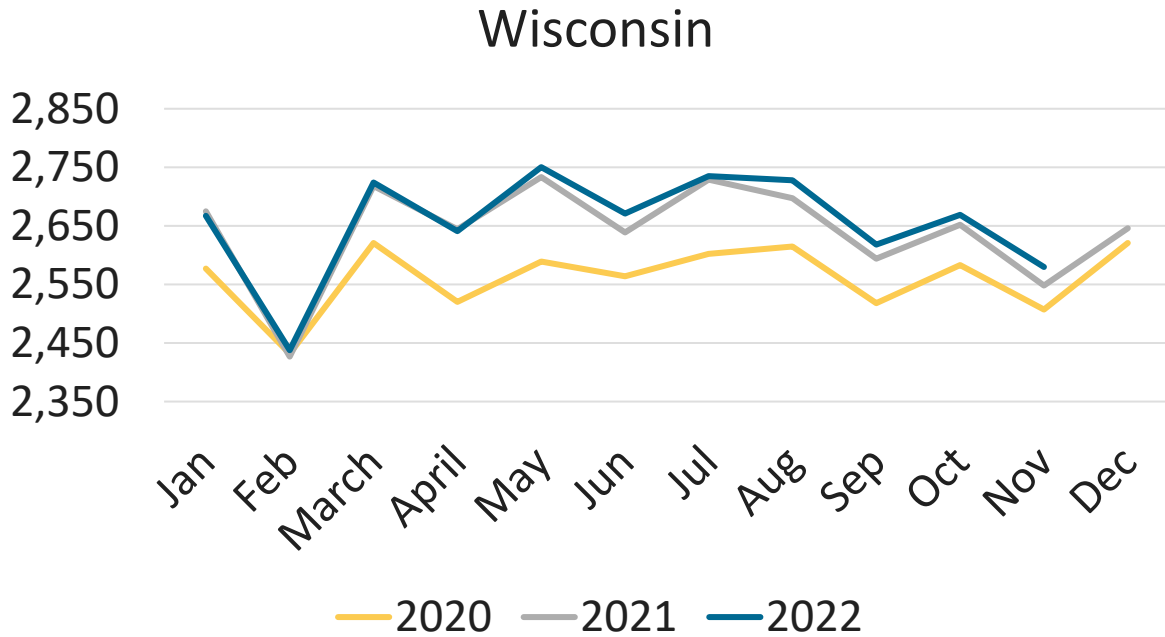
2022



■ Top 5 Milk Producing States
■ Rest of US Milk Production

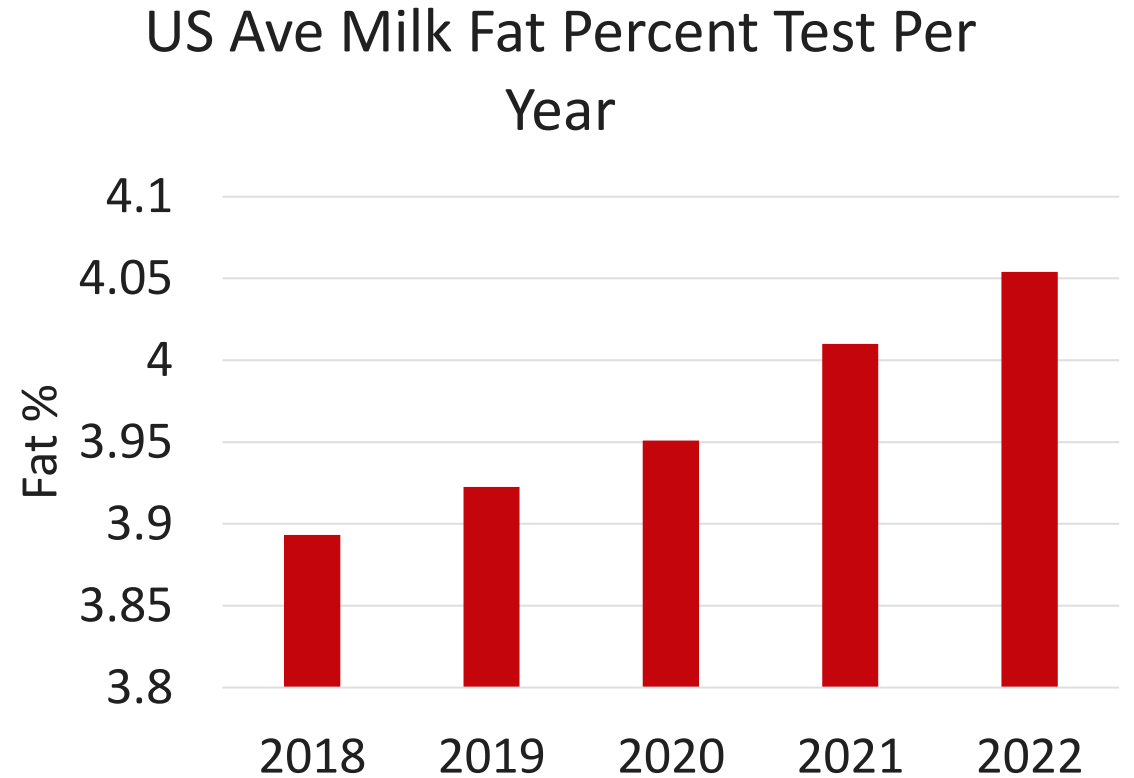
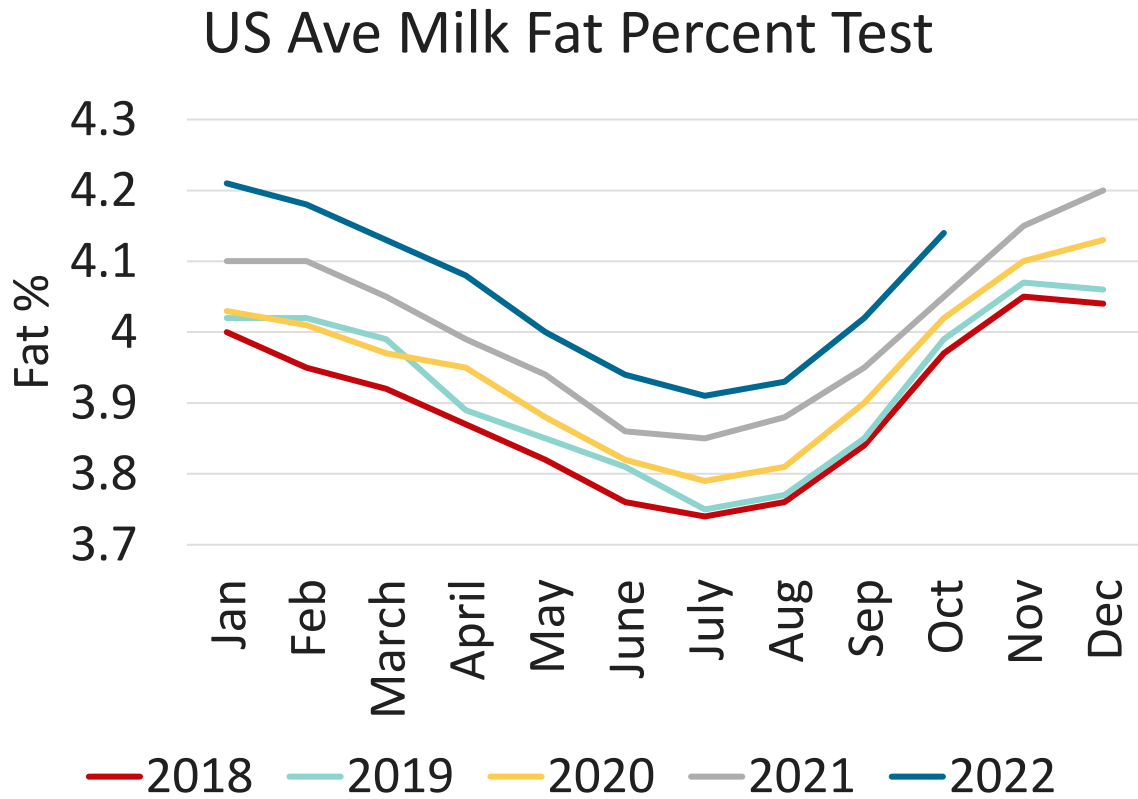


Milk Production Per State By Year (million lbs)





Components, Fat

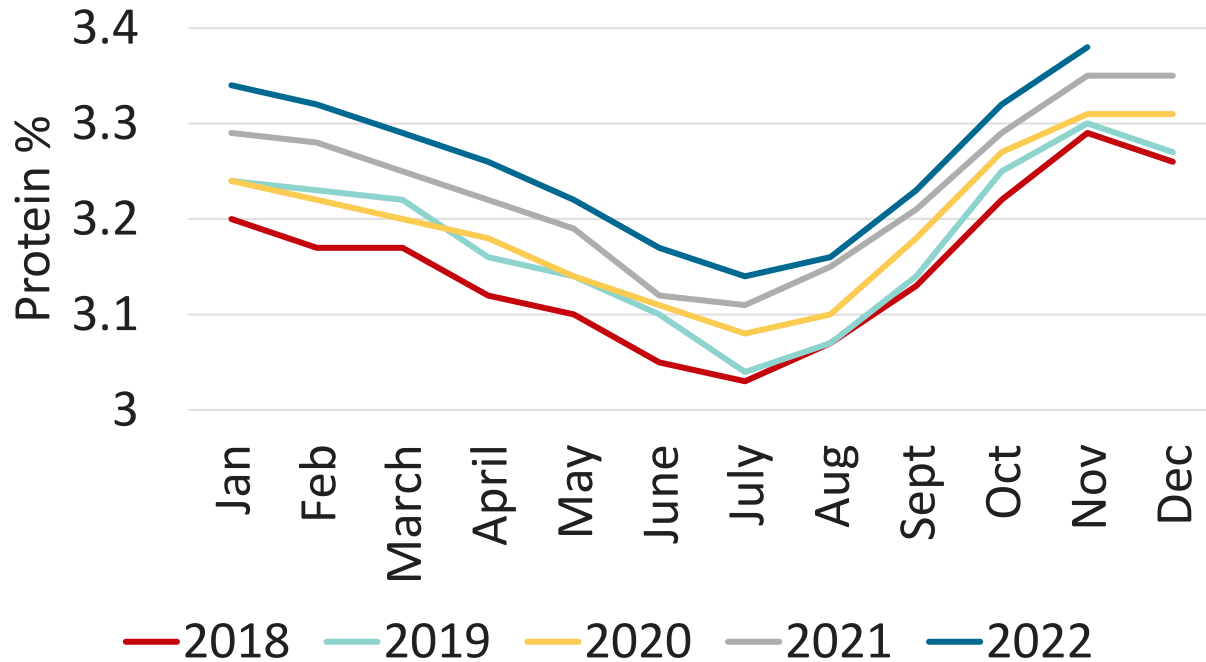




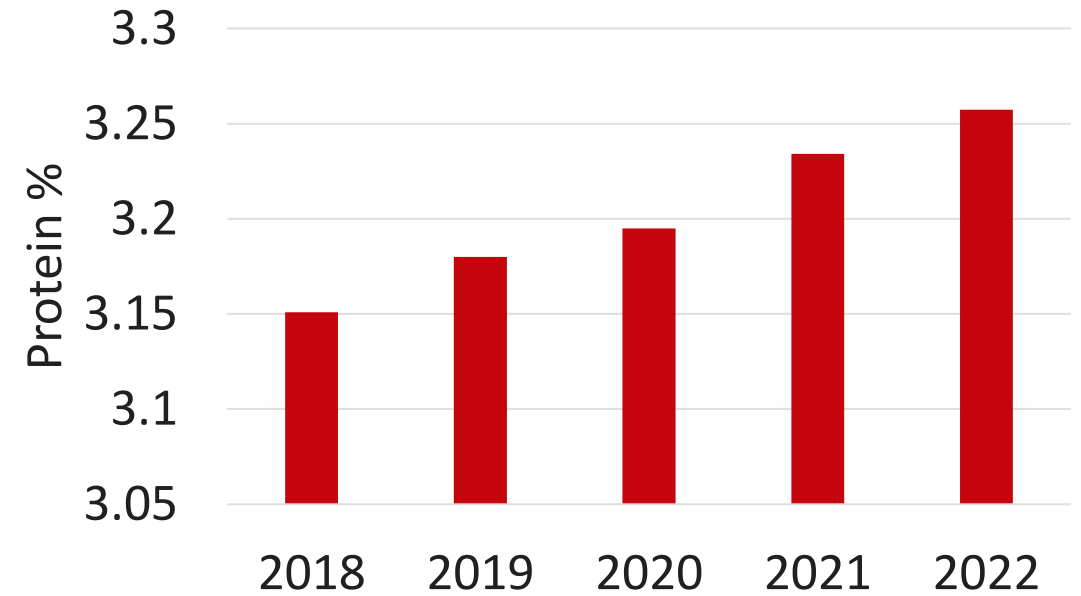
Components, Protein



US Ave Milk Protein Percent Test



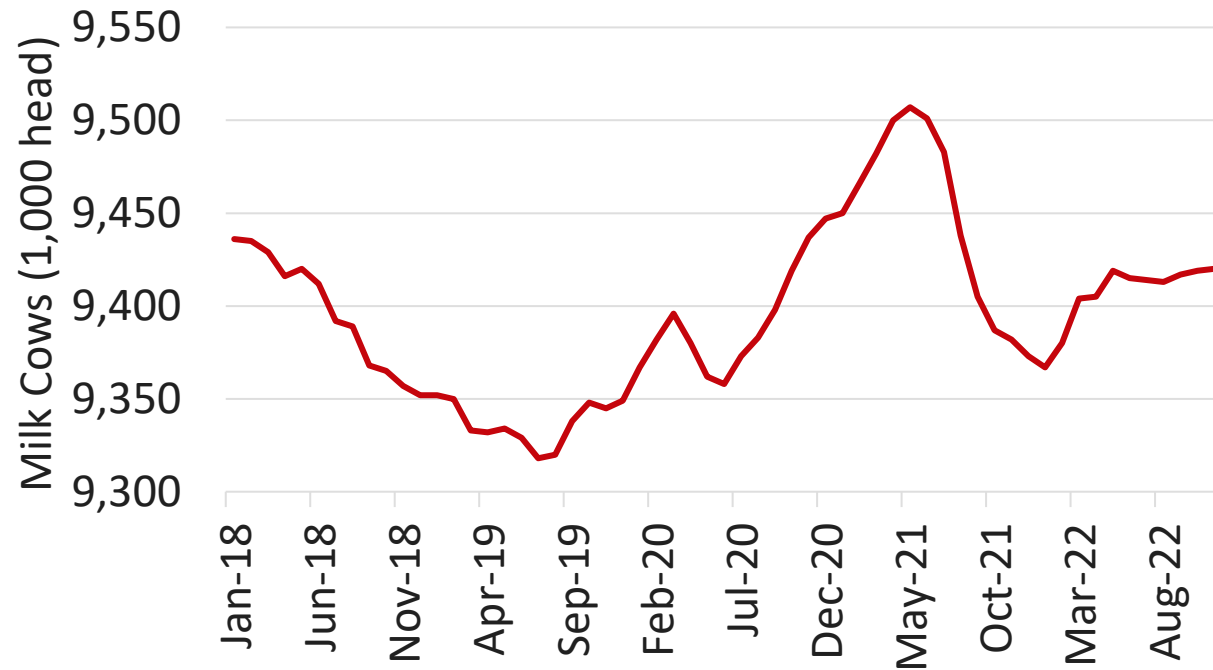
US Ave Milk Protein Percent Test Per Year



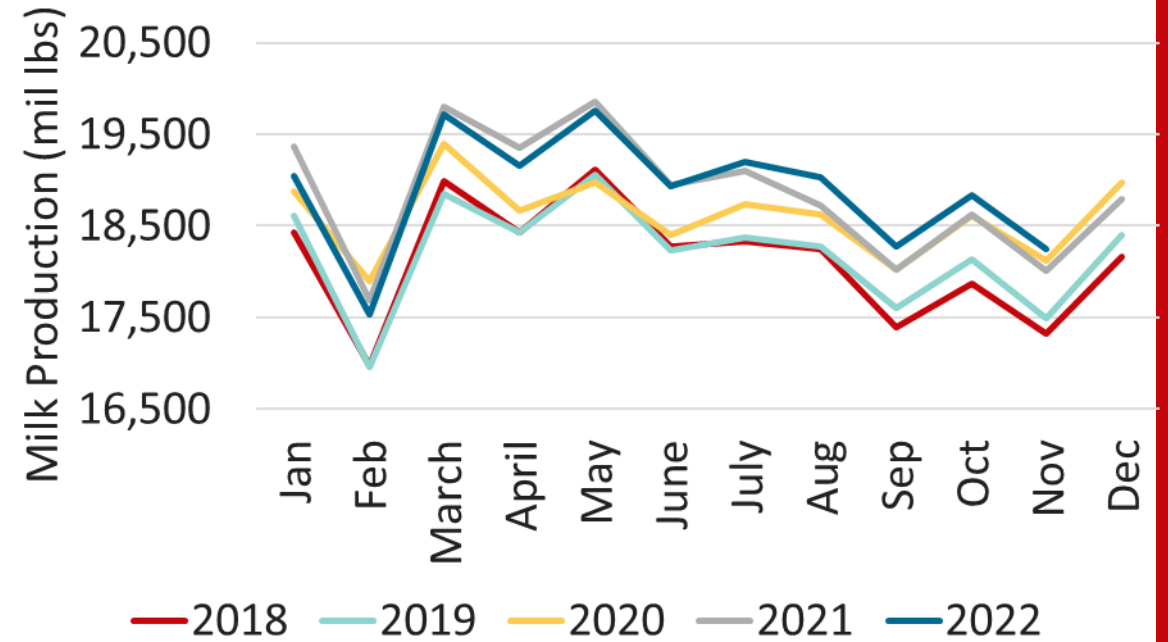


Story of Rebuilding...

Number of US Milk Cows, 2018-2022

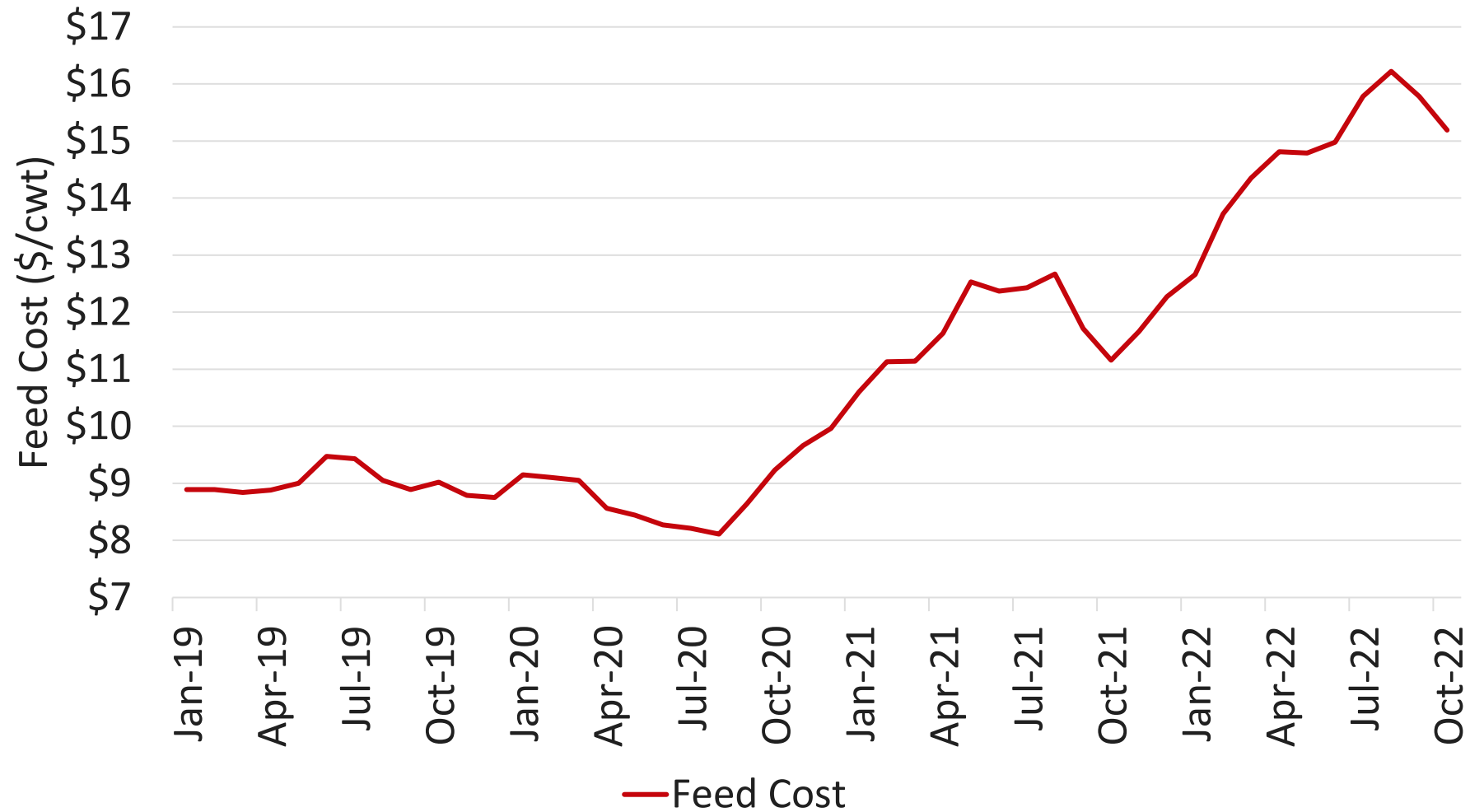


Ave US Milk Production





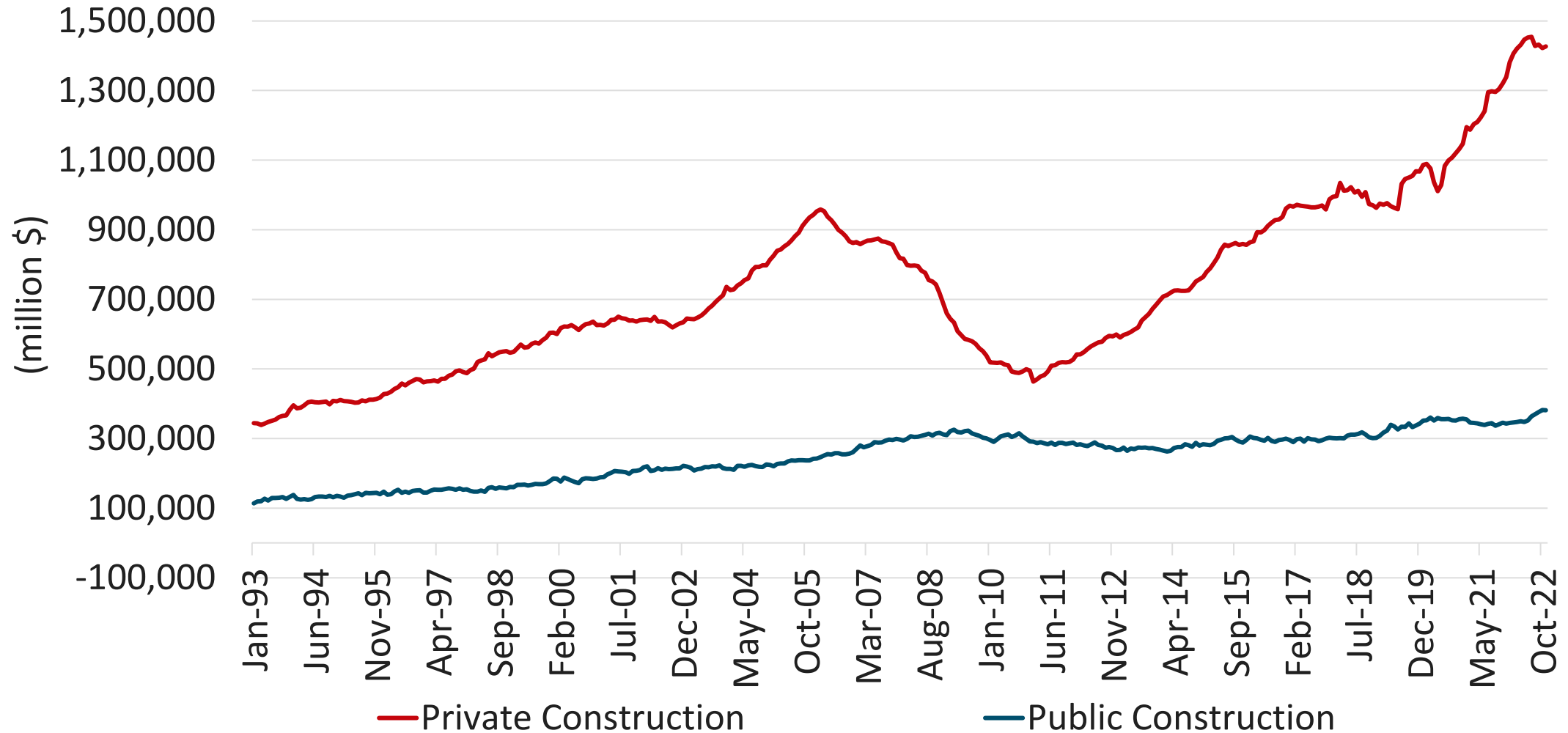
Limiting Factors... Feed Cost





Limiting Factors... Cost of Expansion

Value of Construction Put in Place

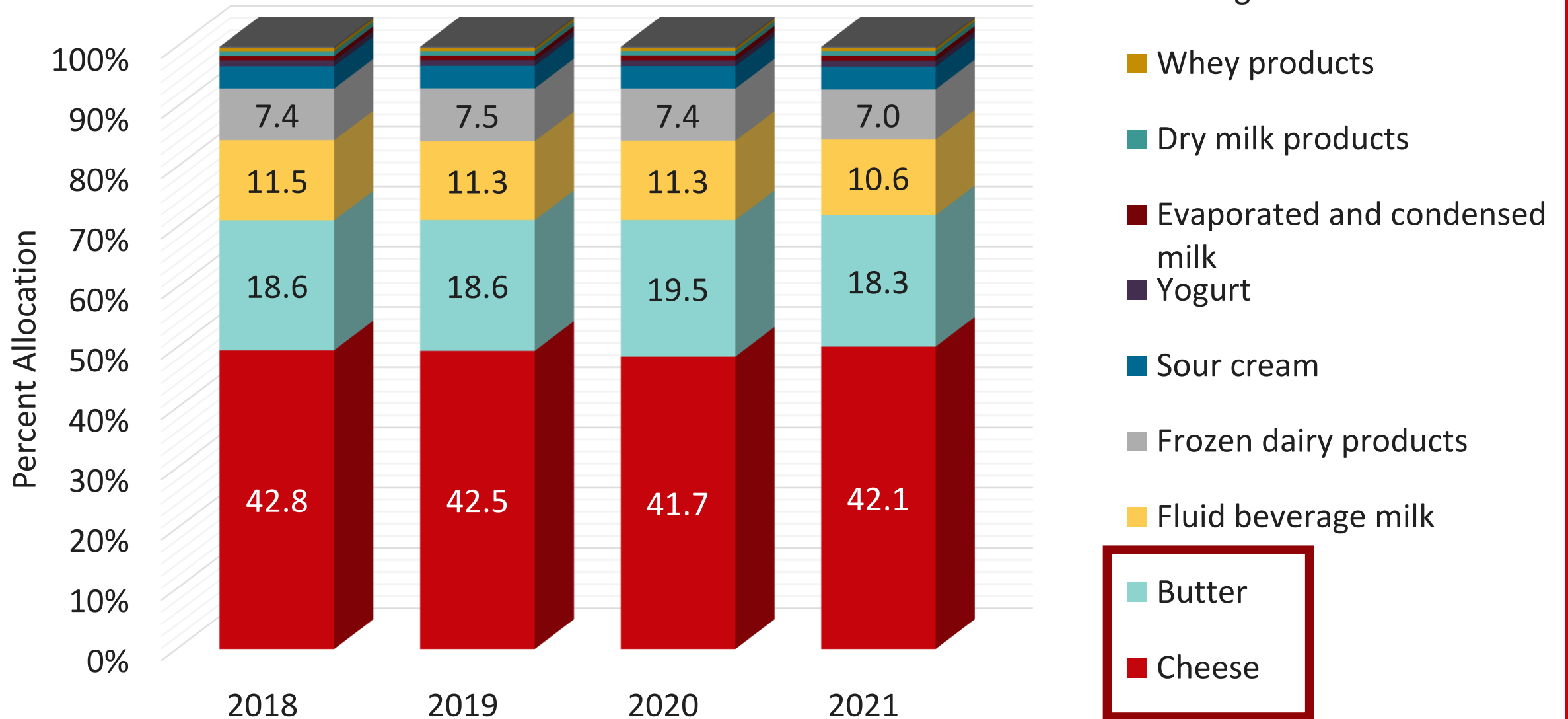




Where are these components going?

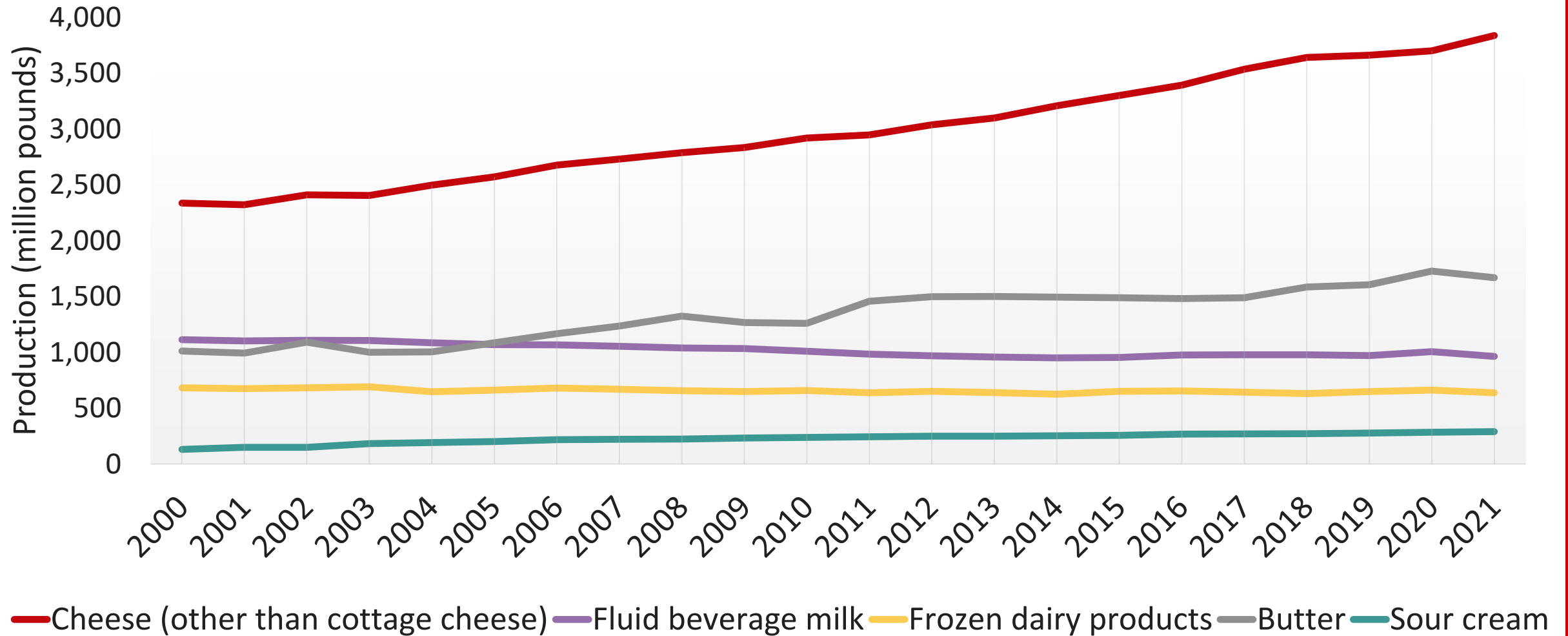


Dairy Industry Allocation of Milk Fat



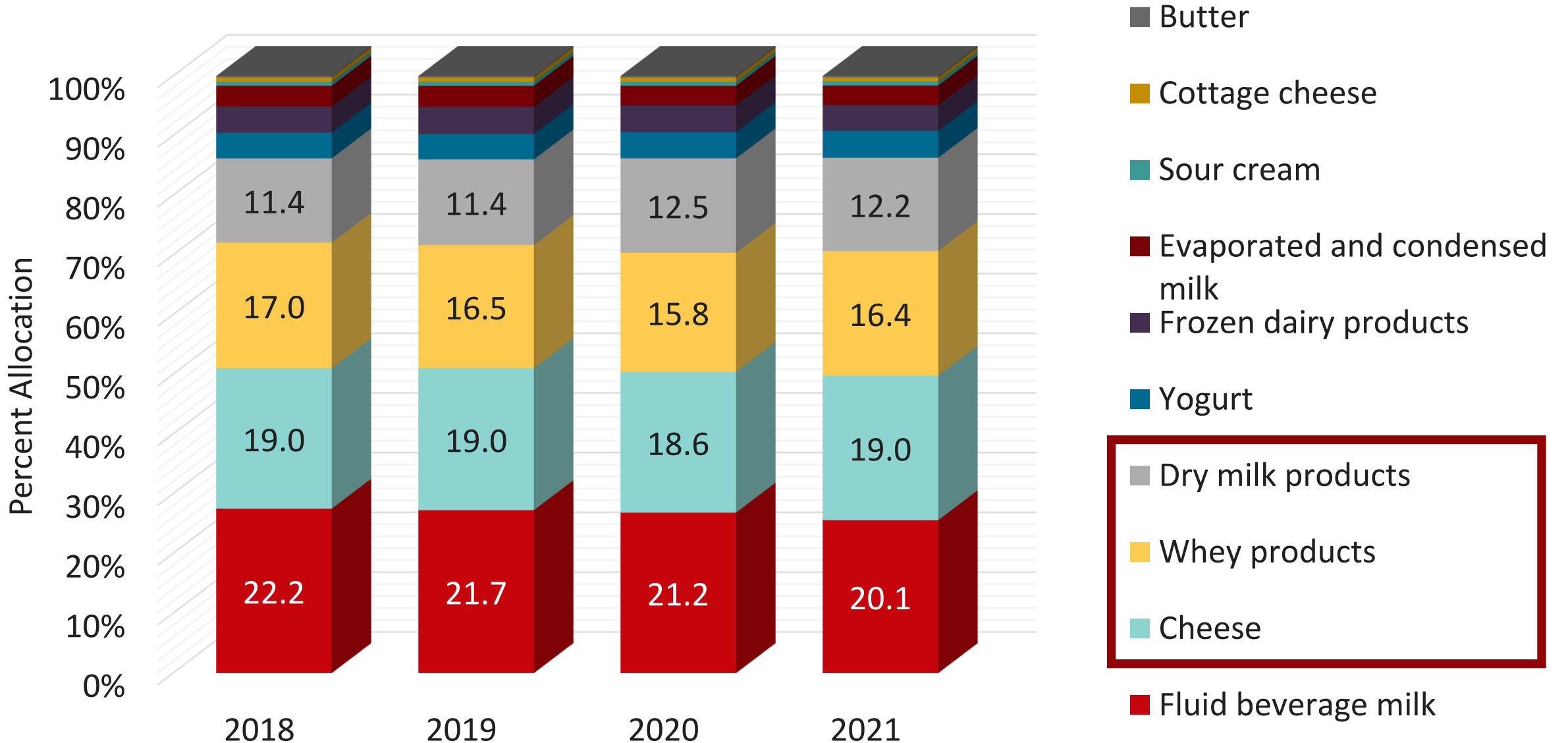


Dairy Industry Allocation of Milk Fat, Top 5



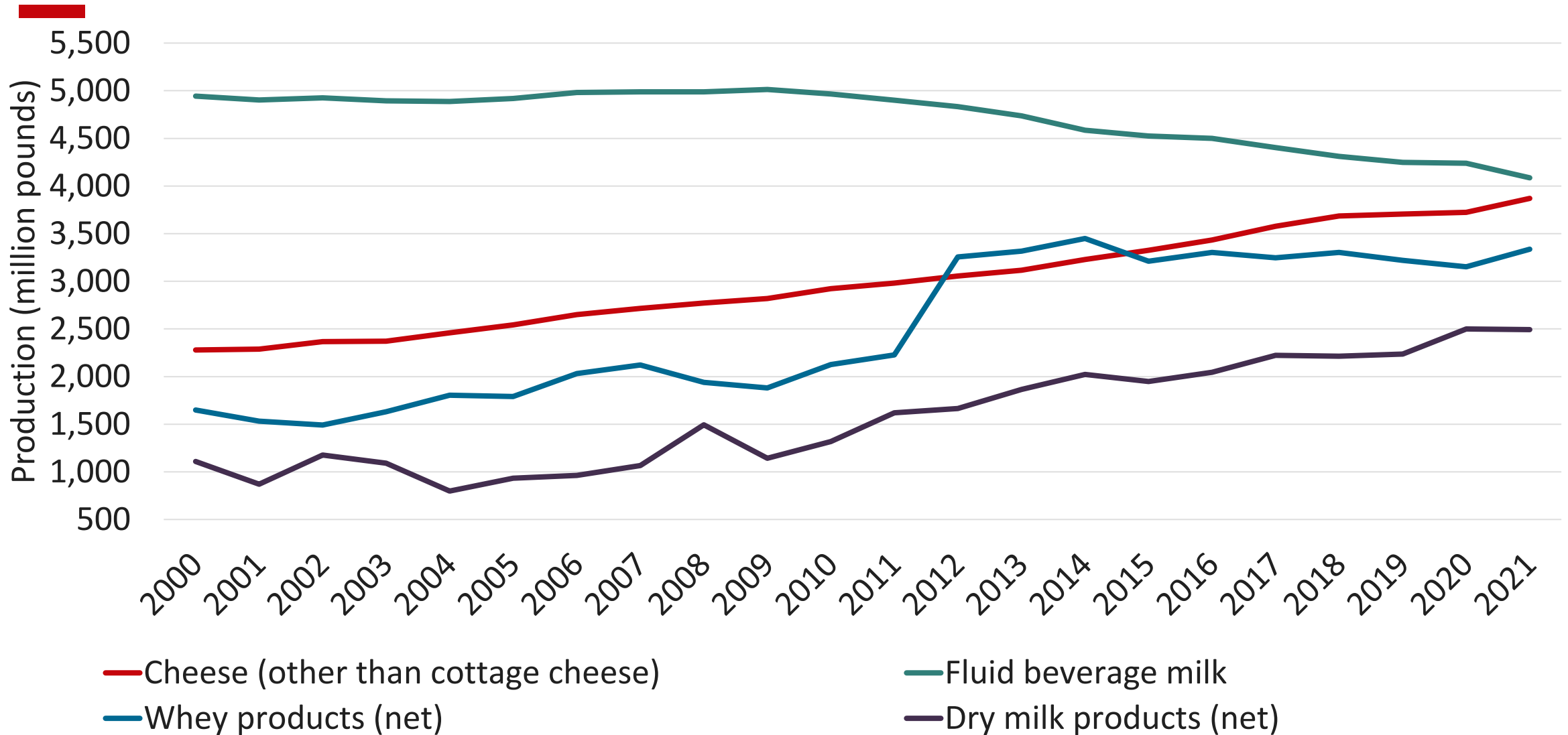


Dairy Industry Allocation of Skim-Solids





Dairy Industry Allocation of Skim-Solids, Top 4

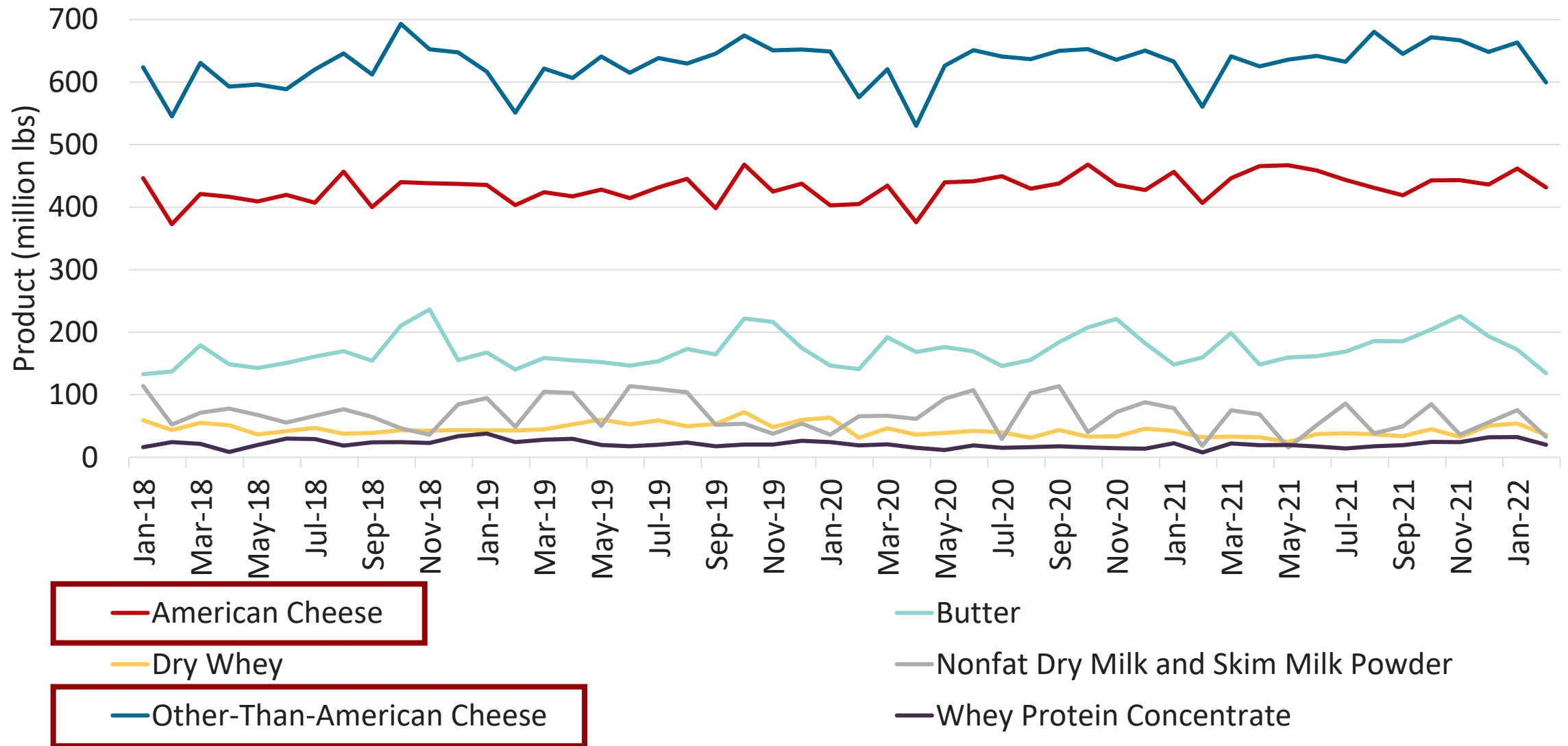




What happens to these products?

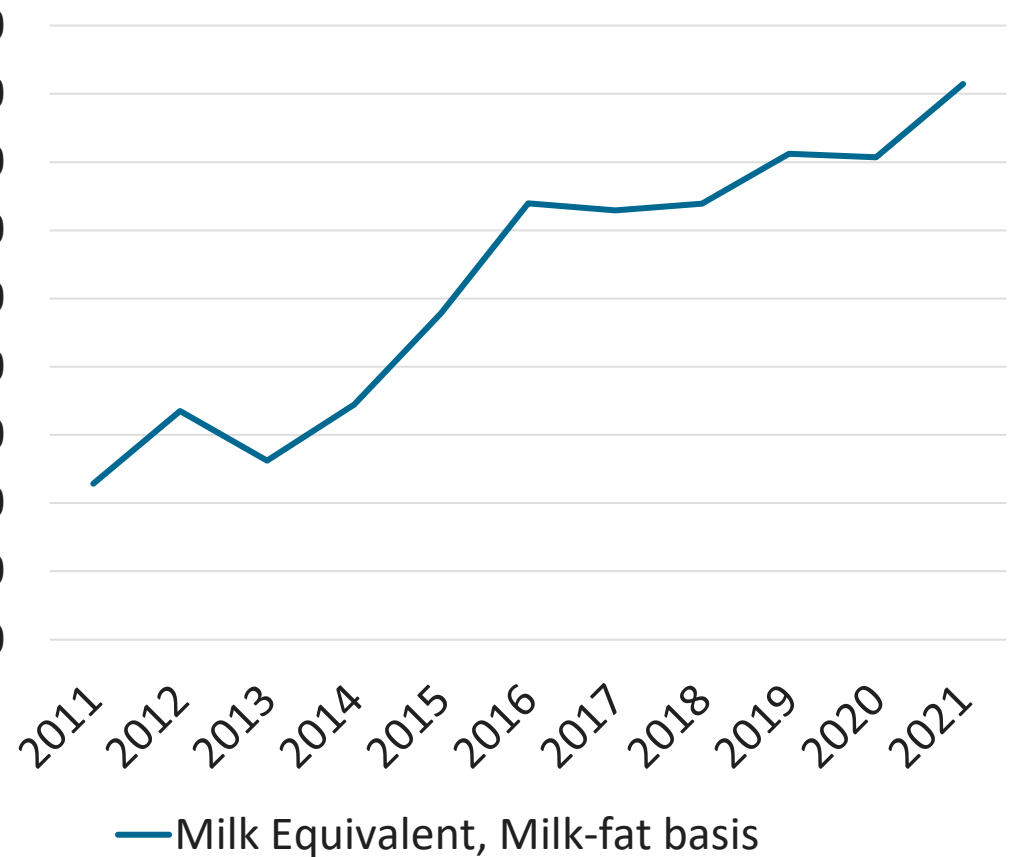
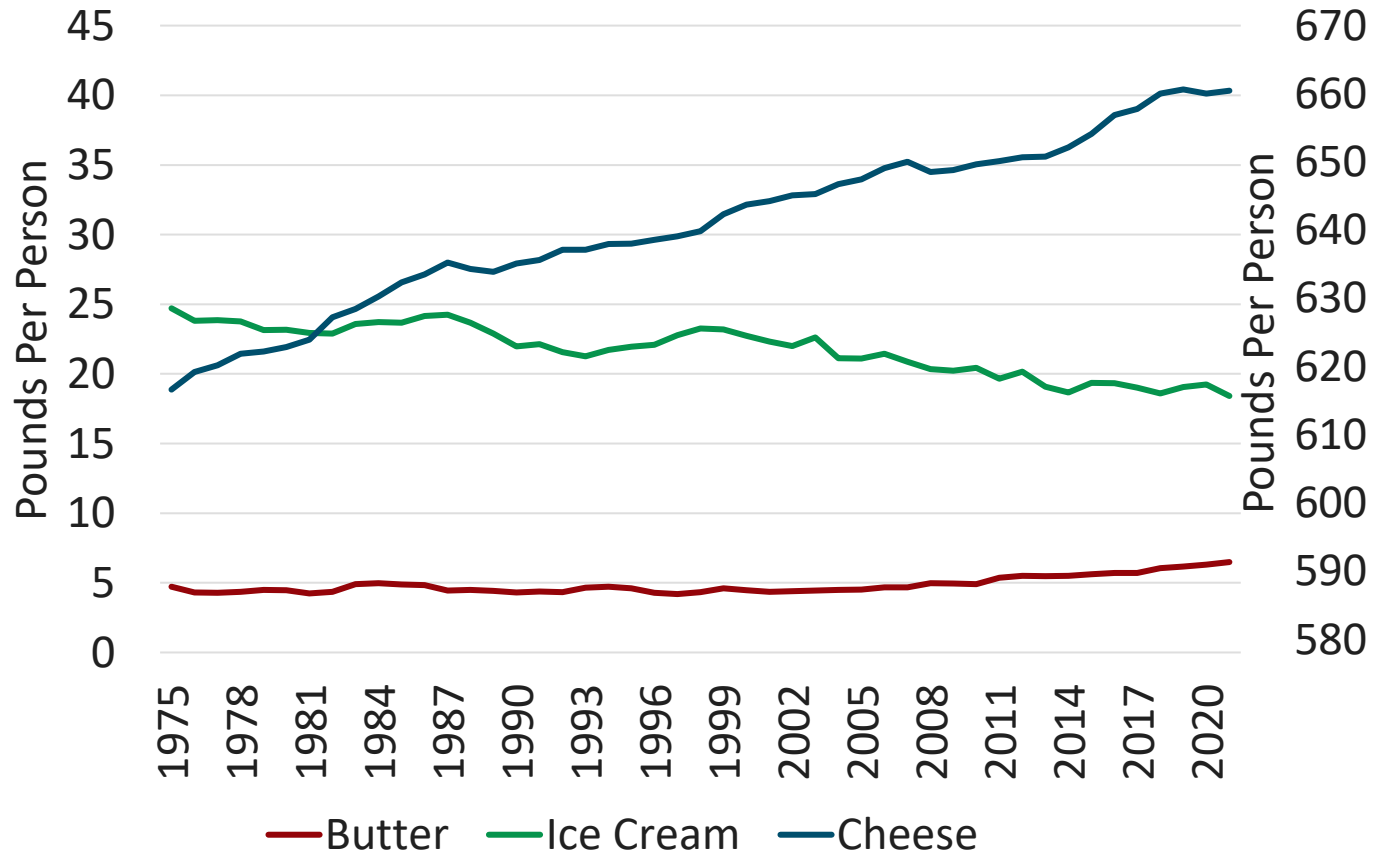


Domestic Disappearance by Product Volume





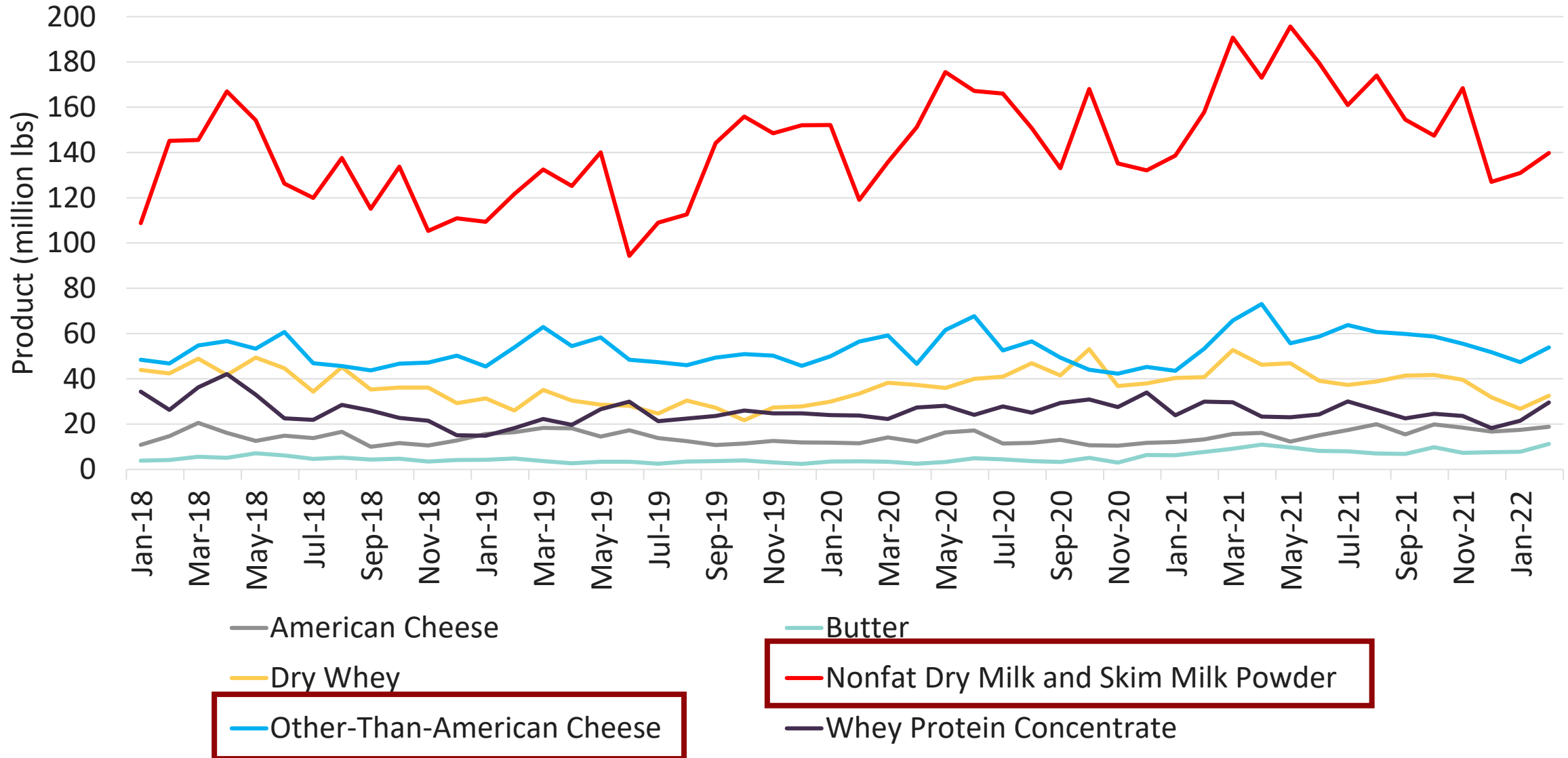
Per Capita Consumption





Export Volume by Product

(~18% of Total US Milk Solids Produced)



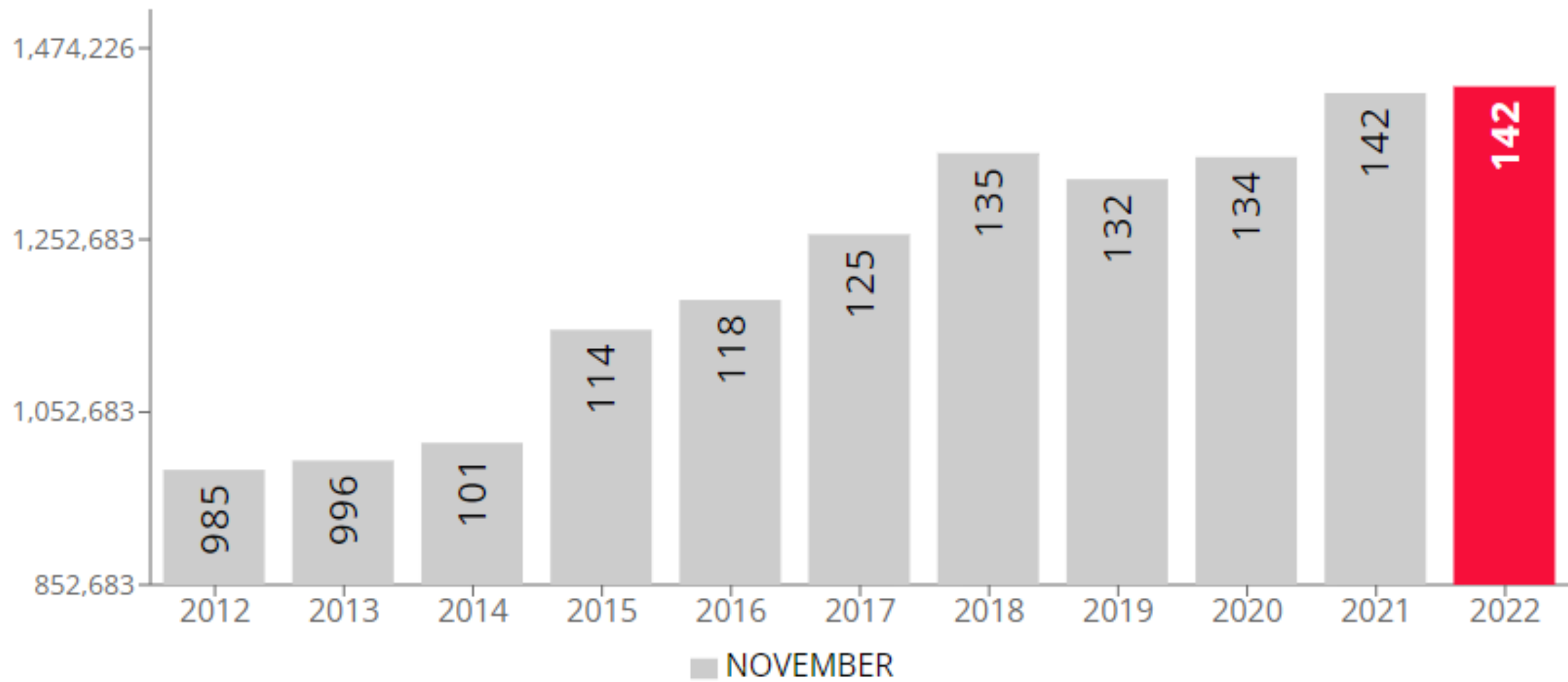


Stocks and Utilization



Total Natural Cheese, Stocks in All Warehouses - United States

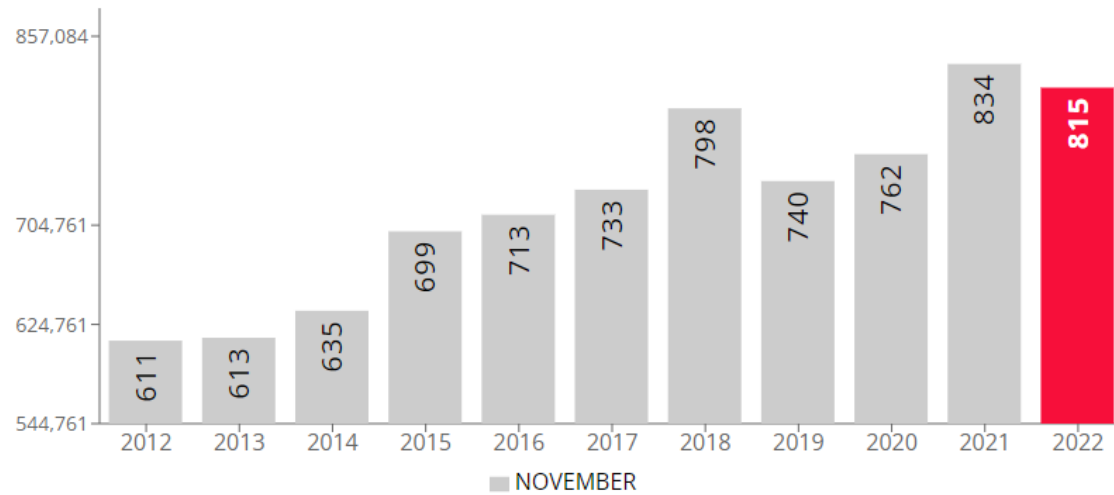
Same Month, 10 Year Comparison





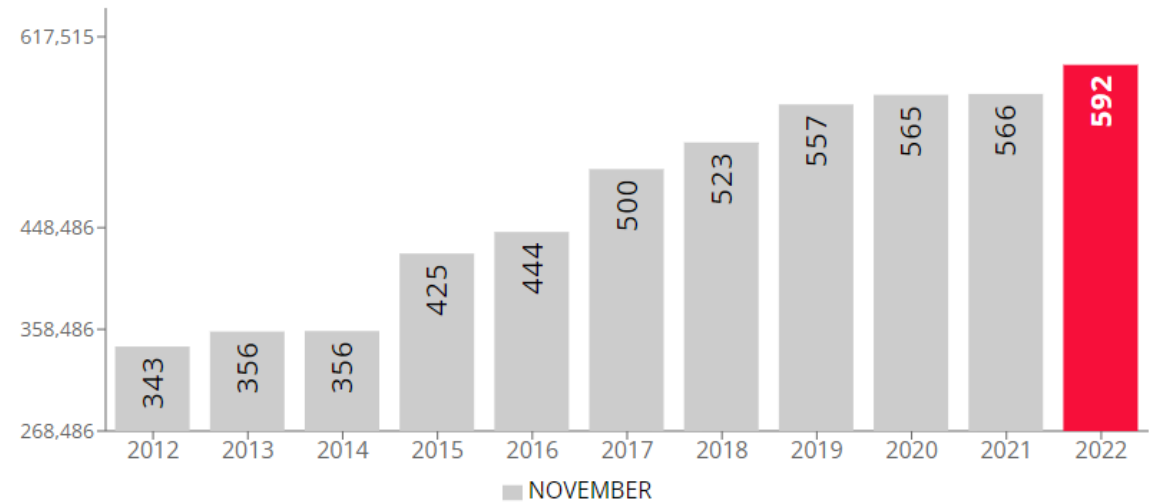
American Cheese (57% of Total Stocks)

Natural Cheese, American, Stocks in All Warehouses - United States
Same Month, 10 Year Comparison



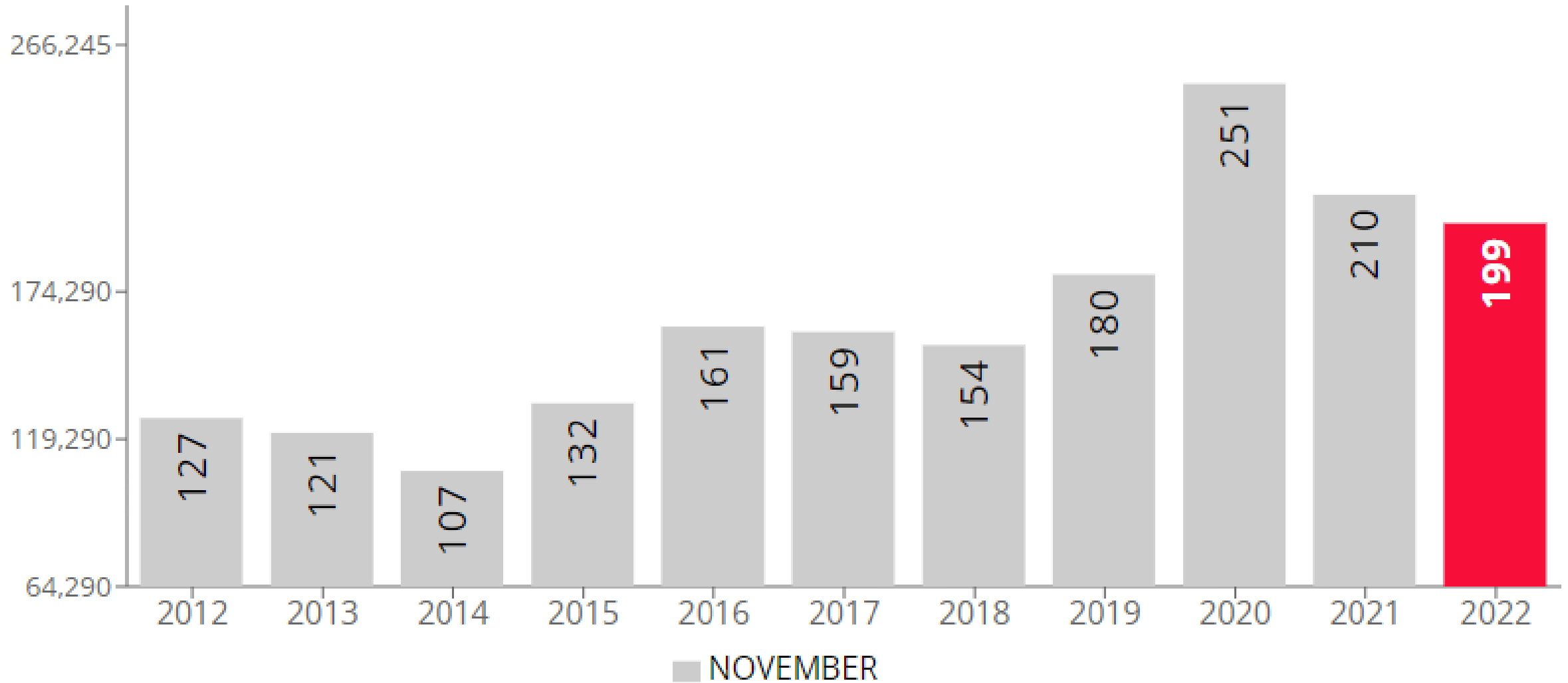
Other (41% of Total Stocks)

Natural Cheese, Other, Stocks in All Warehouses - United States
Same Month, 10 Year Comparison





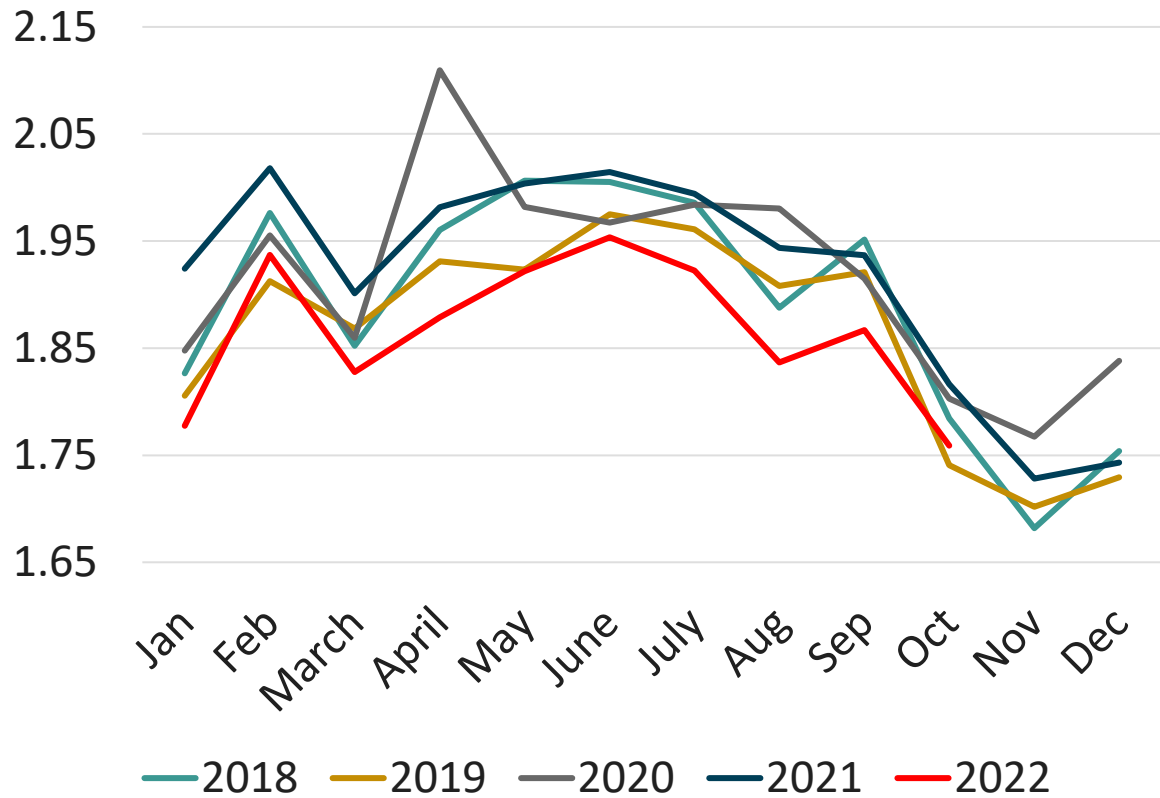
Butter, Stocks in All Warehouses - United States Same Month, 10 Year Comparison



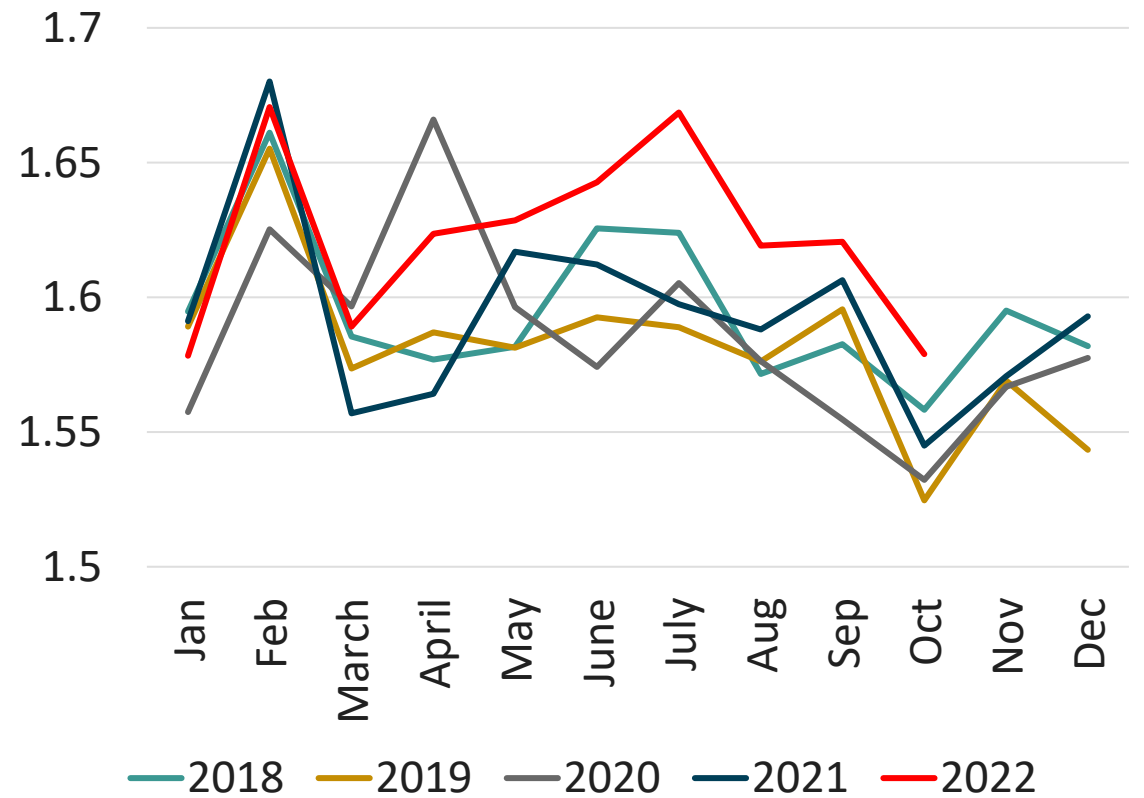


Coverage Ratios

Milk Fat Coverage Ratio



Skim-Solids Coverage Ratio





World View



Global Milk Production

	Year Ago	Prior Month	Latest Month	Month-on-Month	Year-on-Year
Unites States	18015	18834	18250	-3.1	1.3
New Zealand	6358.1	6669	6247.9	-6.31	-1.73
United Kingdom	2640.3	2777.7	2720.3	-2.07	3.03
Argentina	2445.7	2530	2374.5	-6.15	-2.91
Australia	2060.6	2020	1861.7	-7.84	-9.65
Canada	1792.2	1776.4	1831.4	3.1	2.19
Chile	561.6	442.5	537.6	21.5	-4.26
Uruguay	438.8	491.2	440.4	-10.34	0.37

Cow Milk Production Summary for Major Exporter (mil tons)

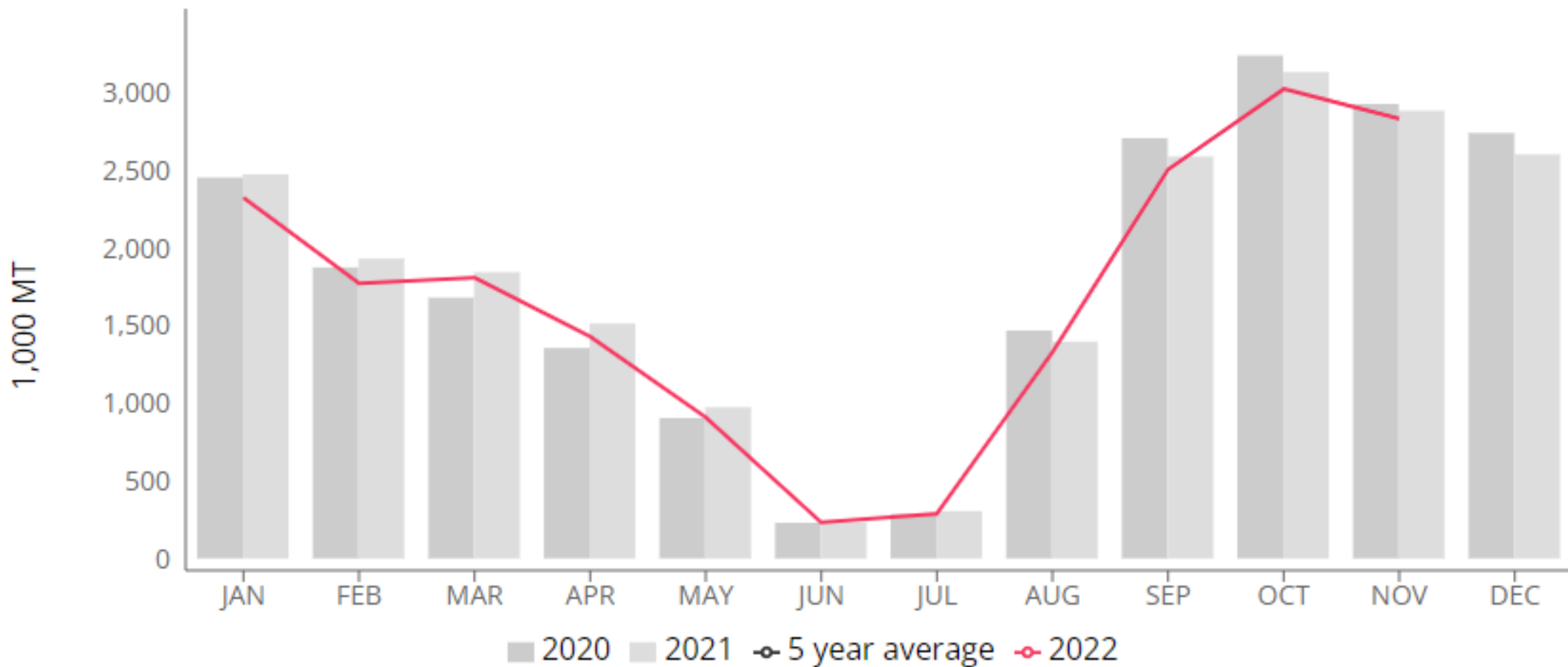


	2021	2022 Forecast	2023 Forecast	2022-2023 Change
Argentina	11.9	11.9	12.0	1%
Australia	9.1	8.6	8.5	-1%
European Union	144.8	143.9	143.0	-1%
New Zealand	22.0	21.1	21.0	0%
United States	102.6	103.0	104.1	1%
Major Exporter Total	290.4	288.5	288.6	0%

Note: Data is rounded.



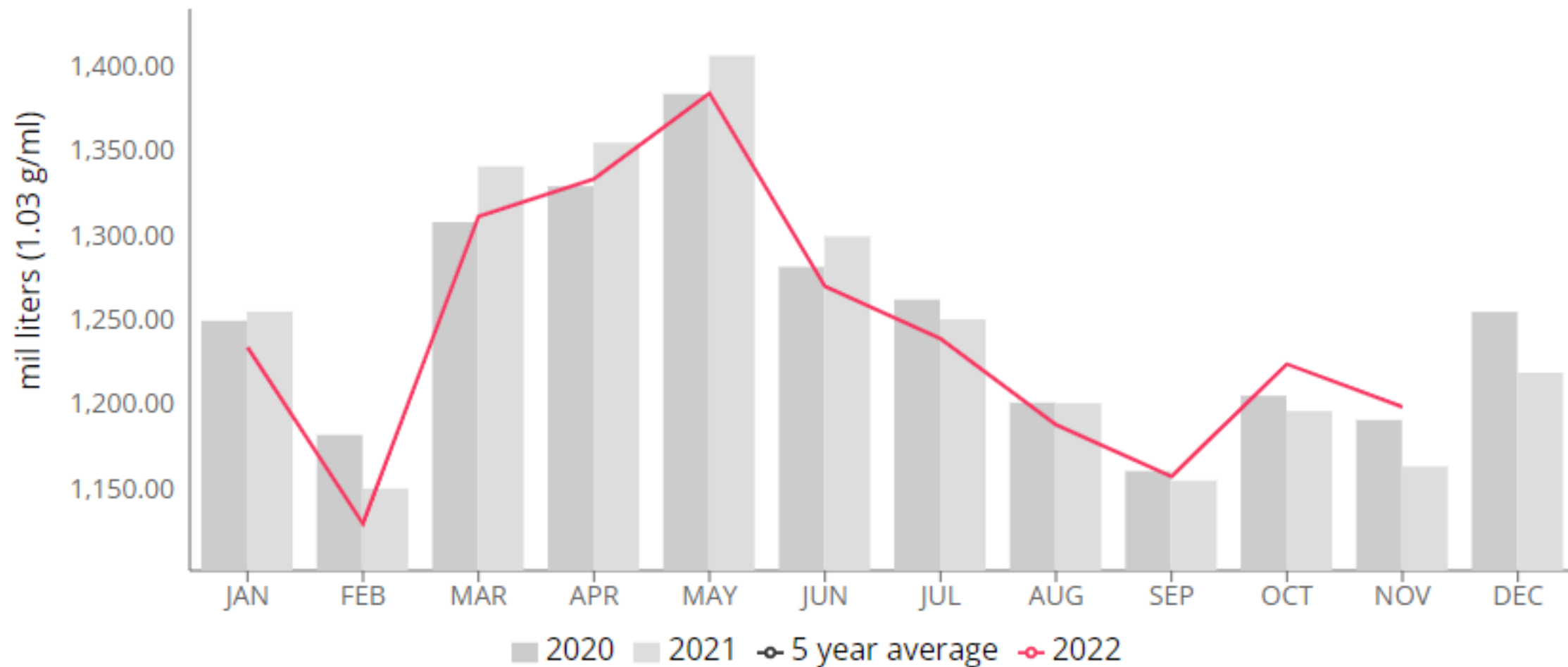
New Zealand Milk Production - New Zealand Three Year Comparison





AHDB Milk Deliveries - United Kingdom

Three Year Comparison



Exports on a Milk Equivalent Basis Through October 2022

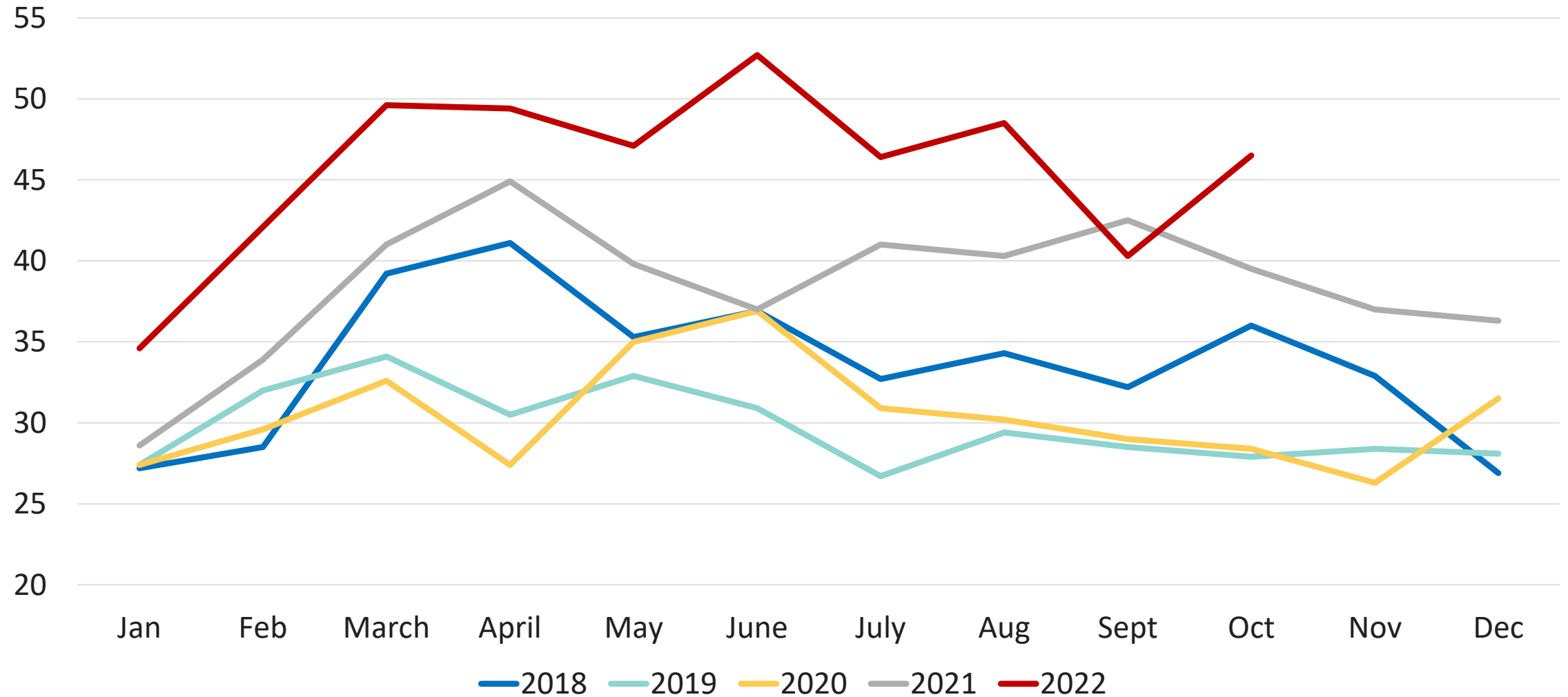


Top Dest. -M.E. Milkfat Basis (Mill. lbs)	2022
MEXICO	2,628 23%
CANADA	1,824 16%
SOUTH KOREA	1,336 12%
JAPAN	717 6%
CHINA (MAINLAND)	443 4%
BAHRAIN	402 4%
Other	3,951 35%
TOTAL	11,300

Top Dest.-M.E. Skim Basis (Mill. lbs)	2022
MEXICO	9,787 22%
CHINA (MAINLAND)	9,191 21%
PHILIPPINES	3,446 8%
INDONESIA	2,920 7%
JAPAN	2,054 5%
CANADA	1,932 4%
Other	14,812 34%
TOTAL	44,143



US Milk Fat Exports





USD/MXN, 1 Year and 5 Years



United States Dollar to Mexican Peso

19.3885 ↓ 5.59% -1.1476 1Y

Jan 4, 6:31:00 PM UTC · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX

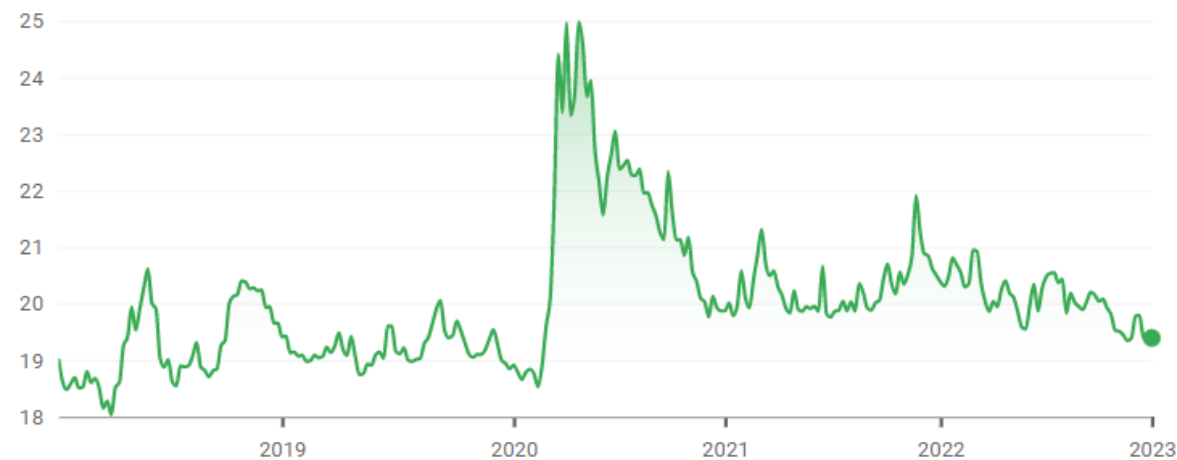


United States Dollar to Mexican Peso

19.3885 ↑ 1.94% +0.3685 5Y

Jan 4, 6:31:00 PM UTC · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX





USD/CNY, 1 Year and 5 Years

United States Dollar to Chinese Yuan

6.8886 ↑ 8.39% +0.5334 1Y

Jan 4, 6:37:00 PM UTC · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX

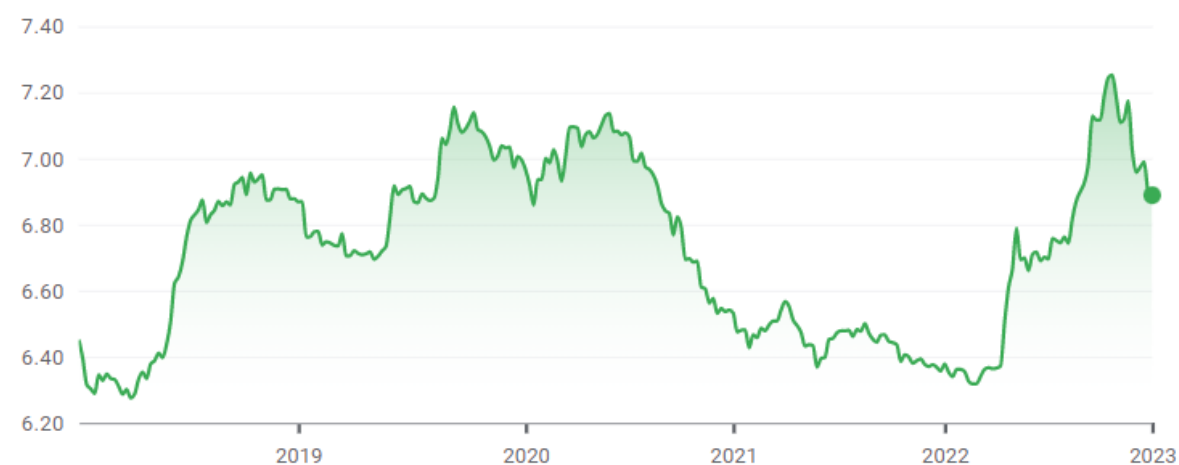


United States Dollar to Chinese Yuan

6.8886 ↑ 6.79% +0.4379 5Y

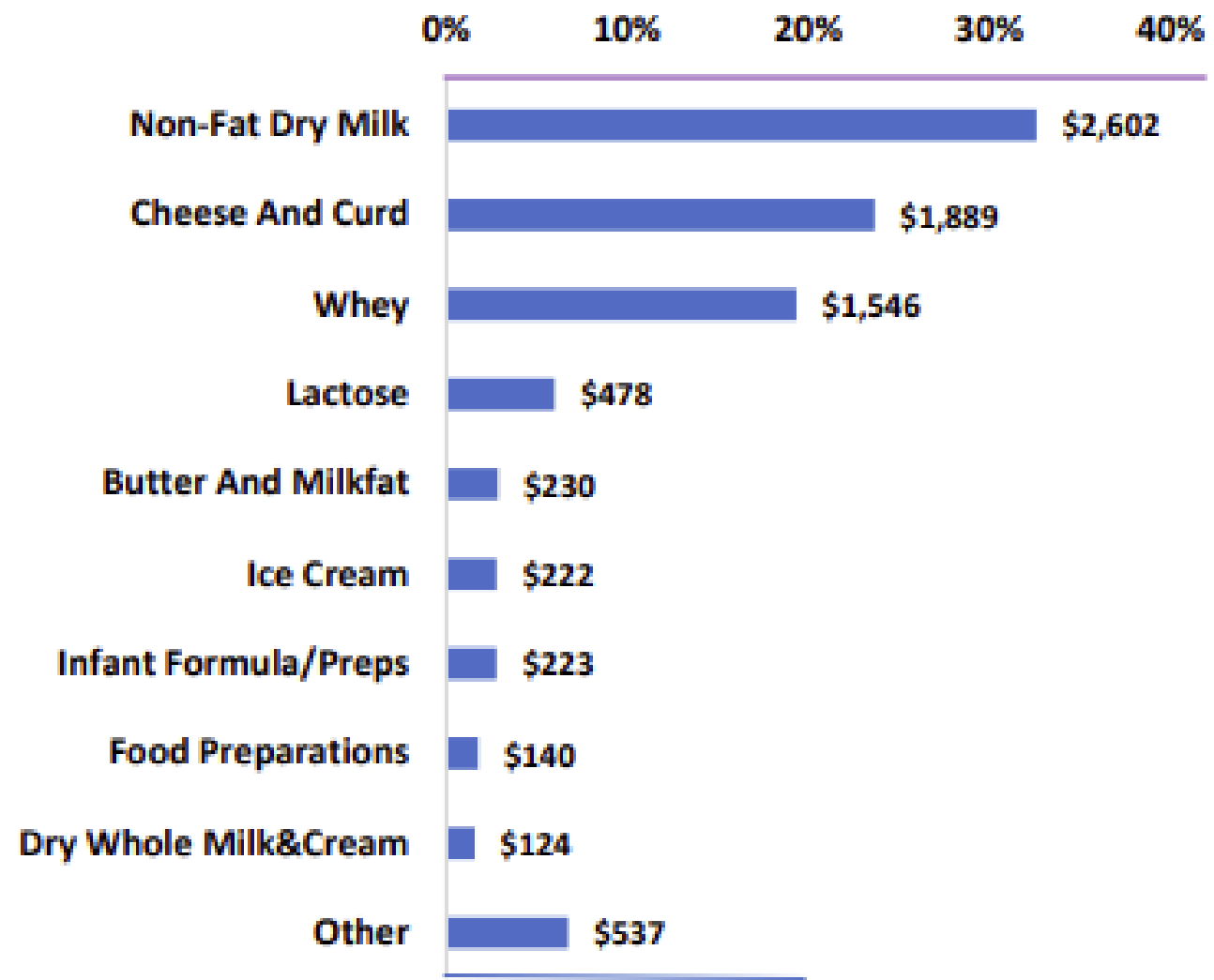
Jan 4, 6:37:00 PM UTC · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX



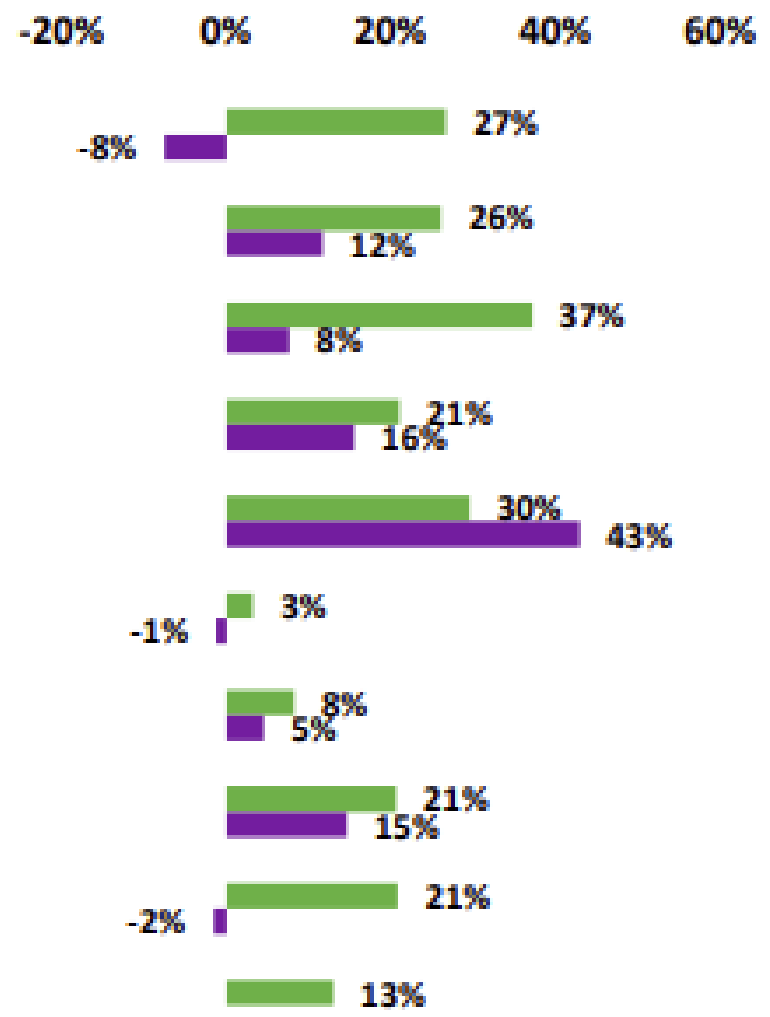


Composition of U.S. Dairy Exports Jan-Oct 2022 (\$ Millions)



Jan-Oct \$7,991

Percent Change in Jan-Oct 2022 Exports vs. 2021



■ YoY Change in Value ■ YoY Change in Volume

Note: Given "Other" is a mix of different units of measurement, volume change is unavailable



Cheese Exports Summary for Major Exporters (1,000 Tons)

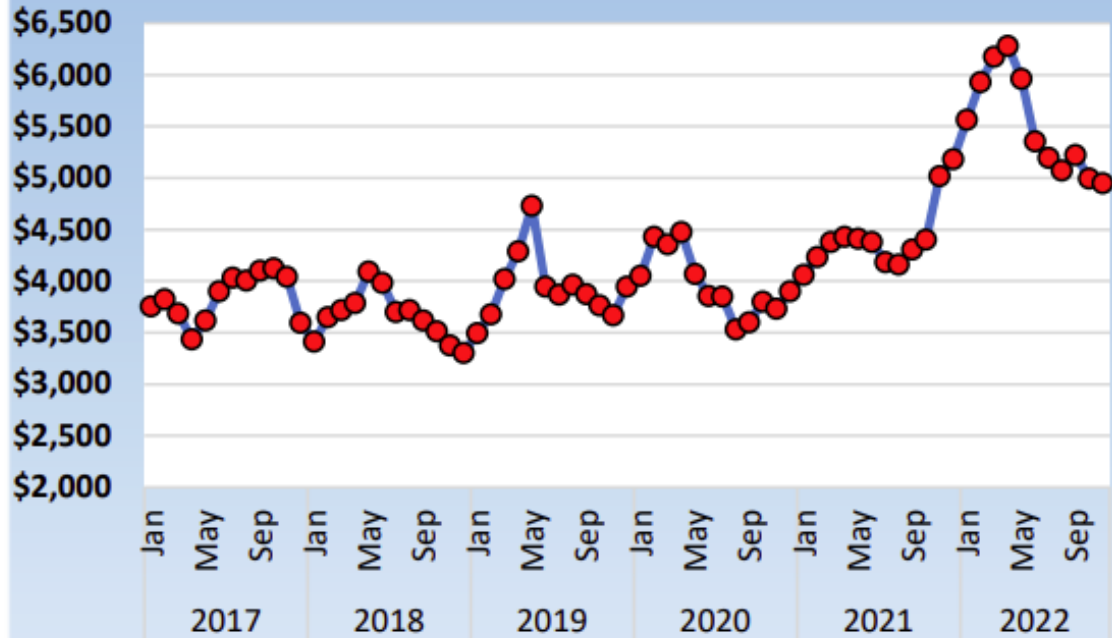
	2021	2022 Forecast	2023 Forecast	2022-2023 Change
Australia	157	155	165	6%
Belarus	298	310	320	3%
European Union	1,385	1,370	1,375	0%
New Zealand	358	335	335	0%
United States	402	451	469	4%
Major Exporter Total	2,600	2,621	2,664	2%

Note: Data is rounded.



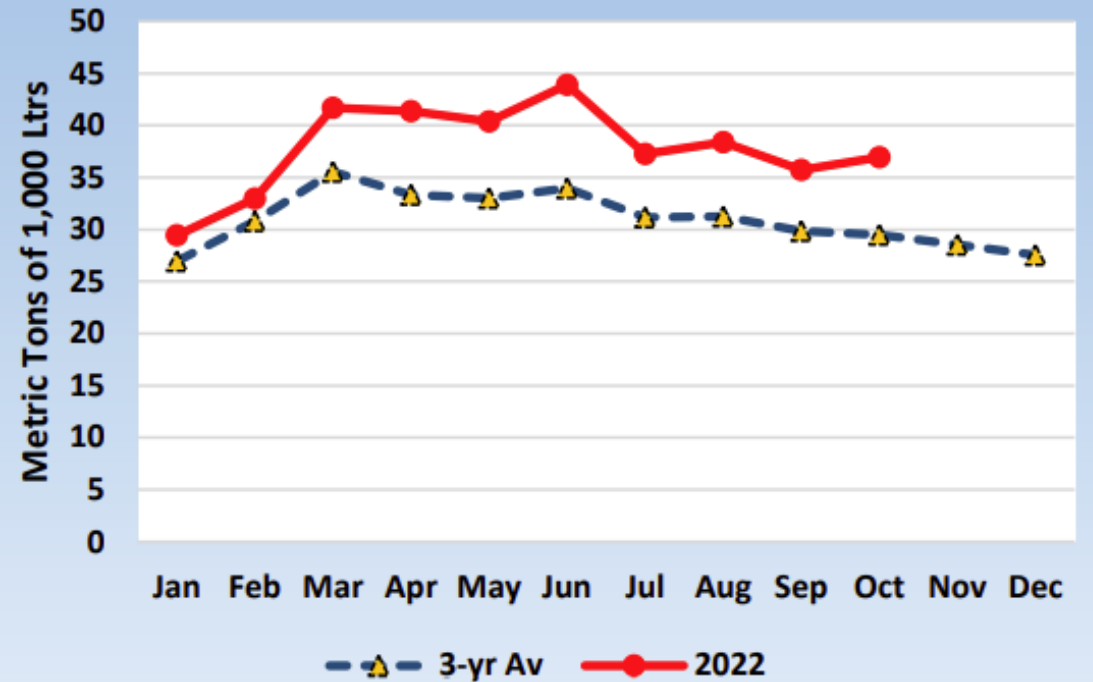
Cheese Exports

Oceania Cheese Price



Source: GDT

U.S. Cheese Exports



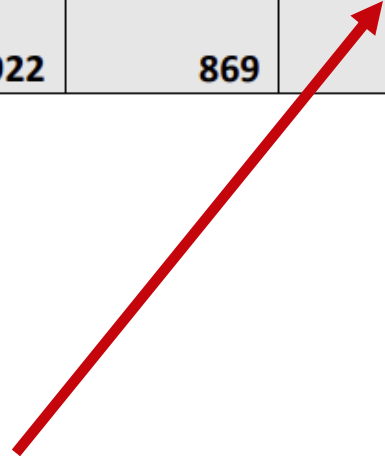


Butter Export Forecast

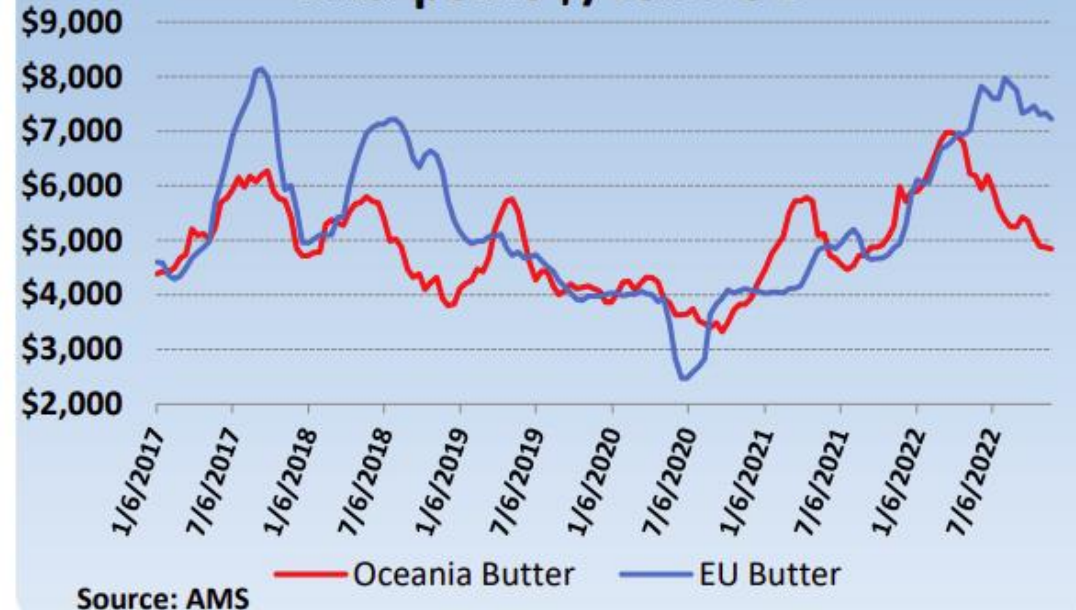
Butter Exports Summary for Major Exporters (1,000 Tons)

	2021	2022 Forecast	2023 Forecast	2022-2023 Change
Belarus	78	78	80	3%
European Union	265	260	265	2%
New Zealand	436	500	450	-10%
United States	58	84	74	-12%
Major Exporter Total	837	922	869	-6%

Note: Data is rounded.



Butter Export Prices
Mid-point \$/Ton FOB

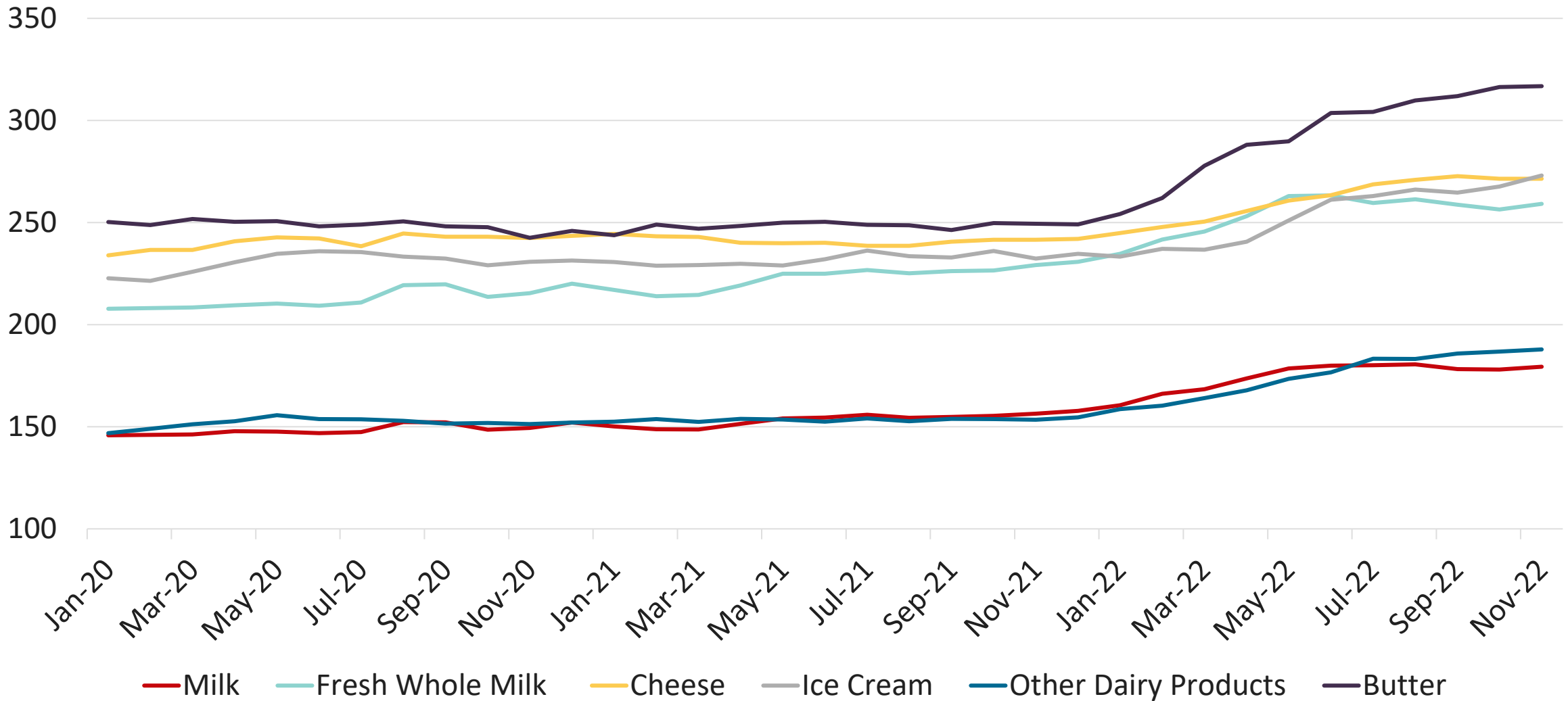




Additional Economic Factors

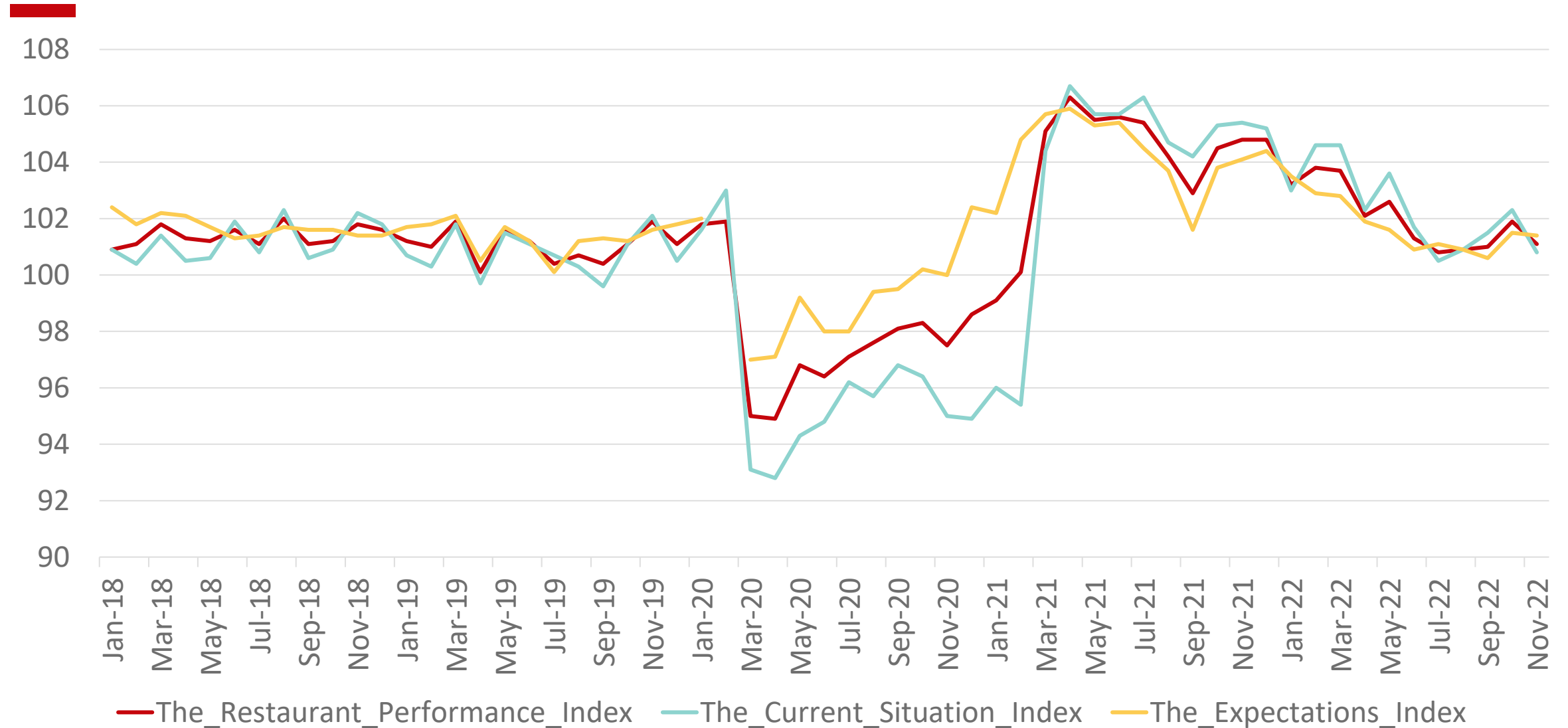


Dairy Product CPI, Seasonally Adjusted



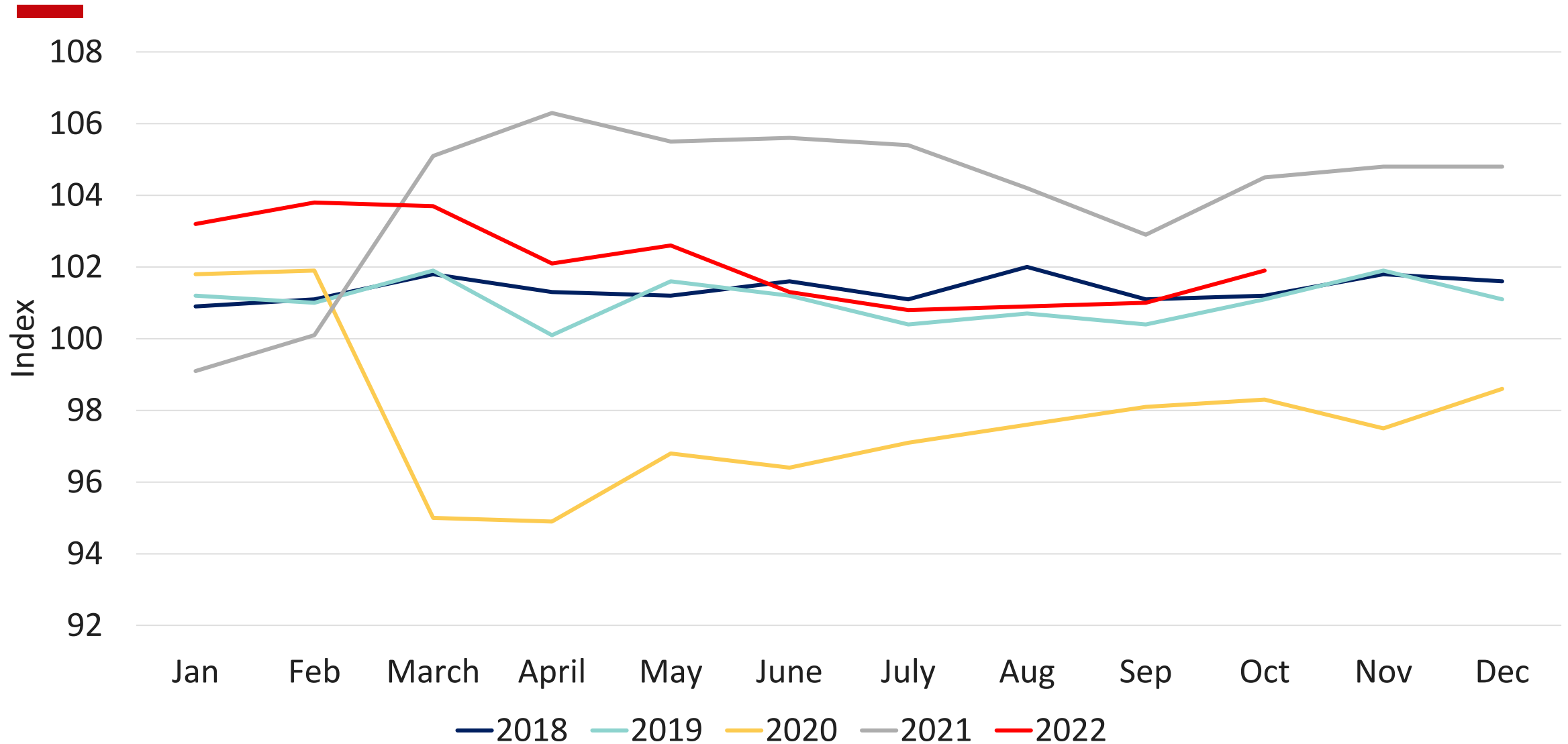


Restaurant Performance Index



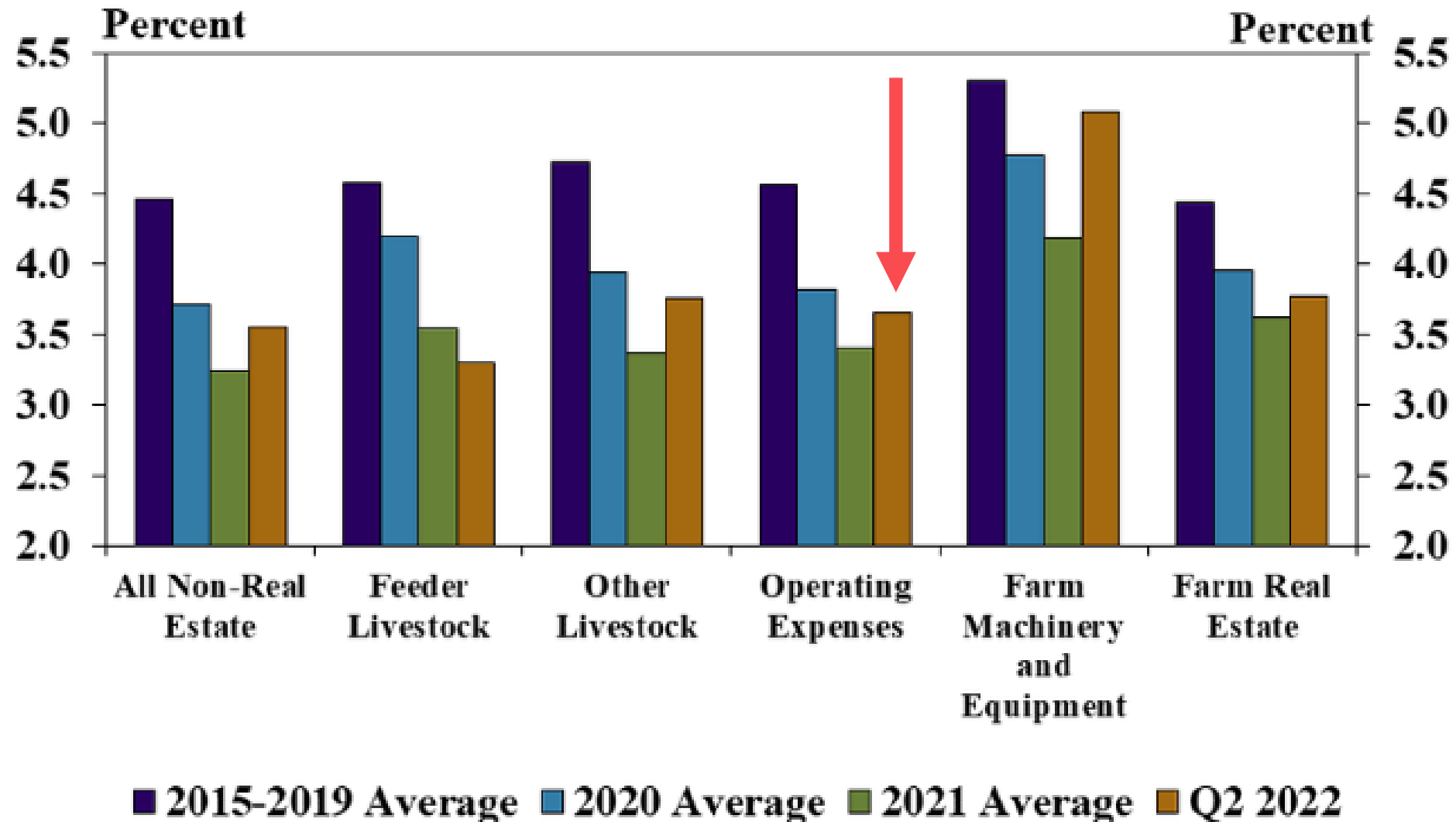


Restaurant Performance Index by Month

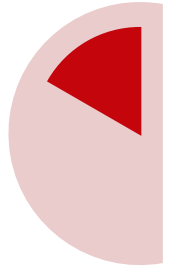




Ave Interest Rates By Loan Type, Federal Reserve



Historic Interest Expense



<\$0.20/cwt

Low



~\$0.30/cwt

Med



\$0.80+/cwt

High

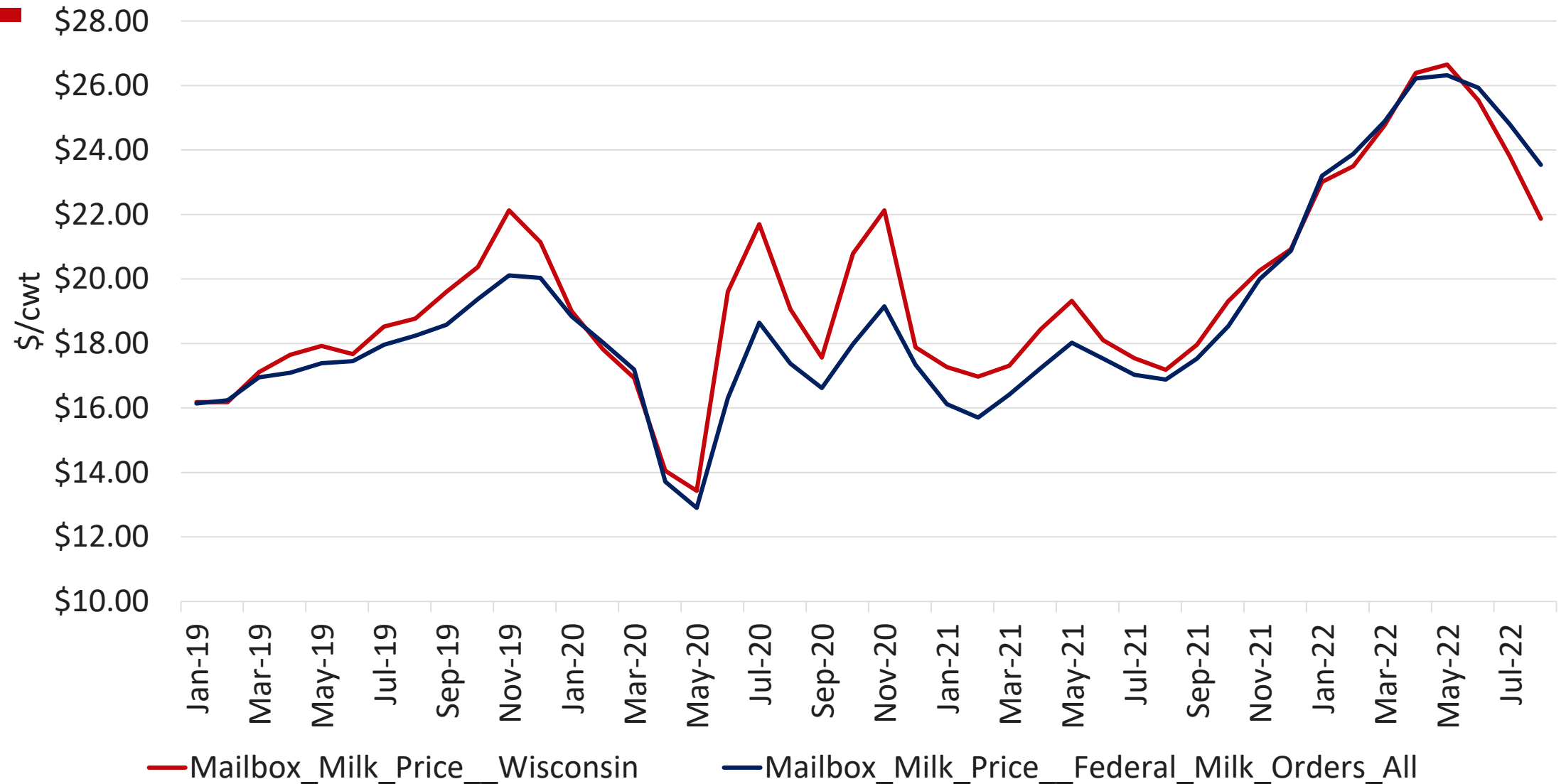




Farm Level

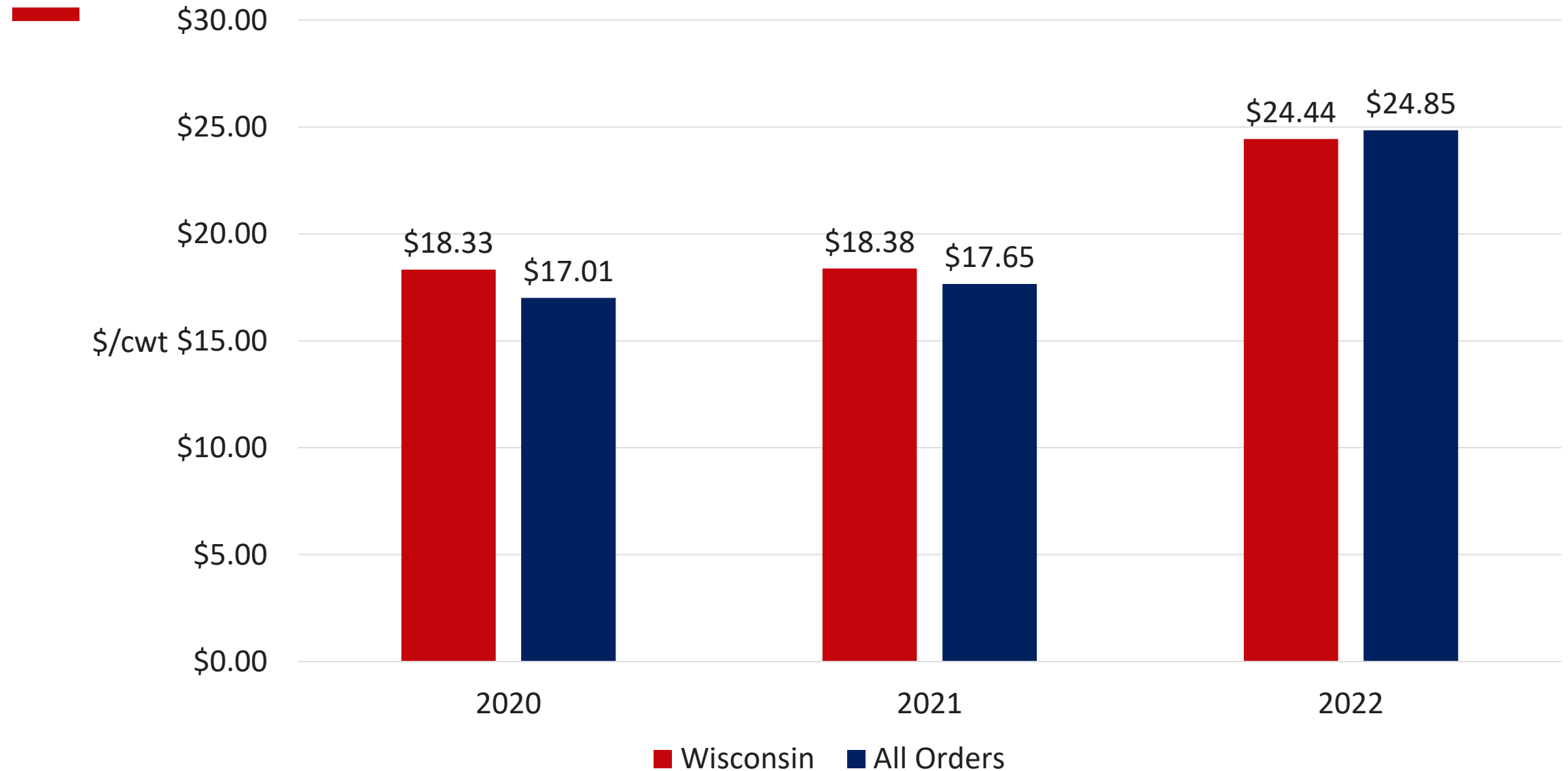


FMMO Mailbox Milk Price



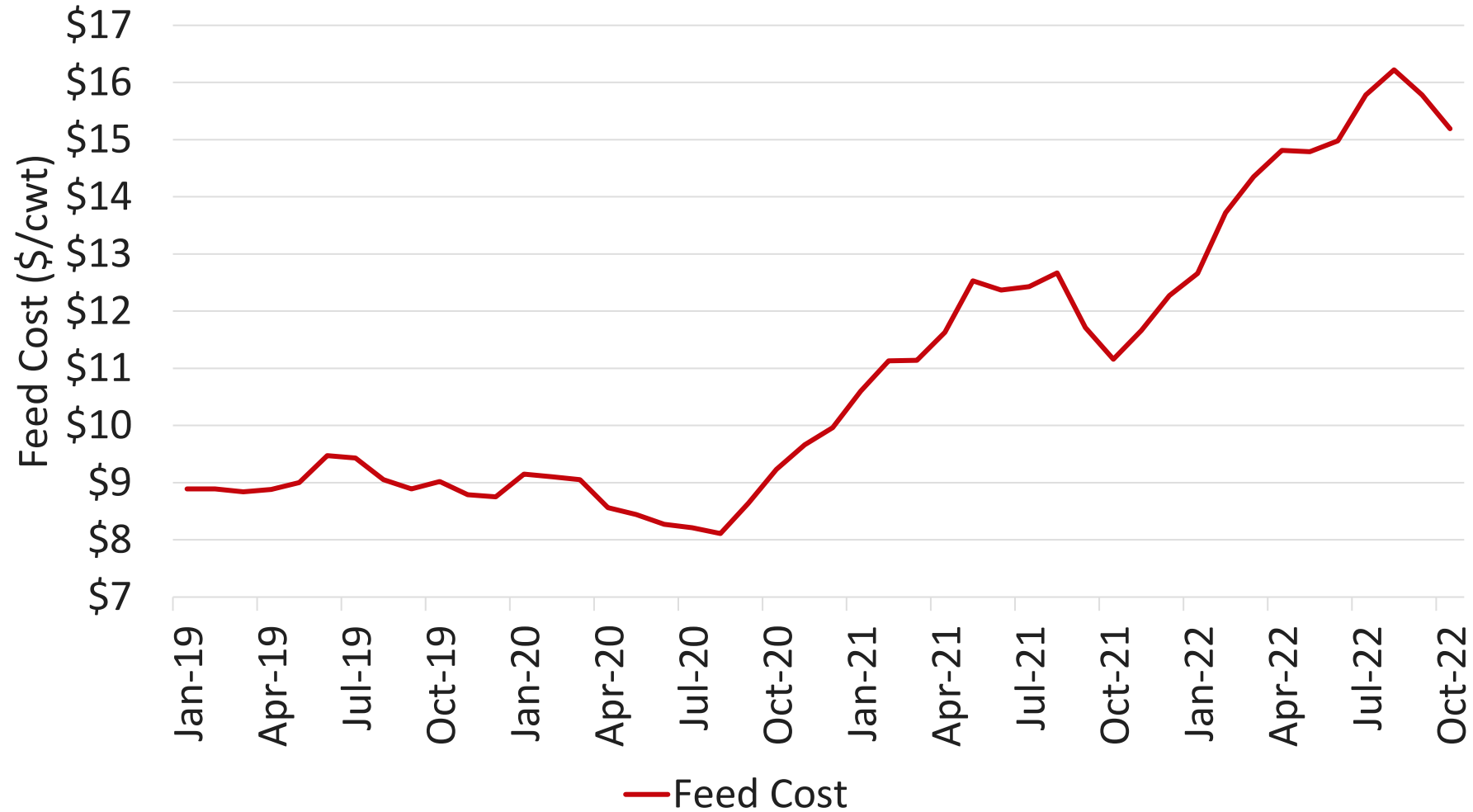


Average FMMO Mailbox Price Per Year



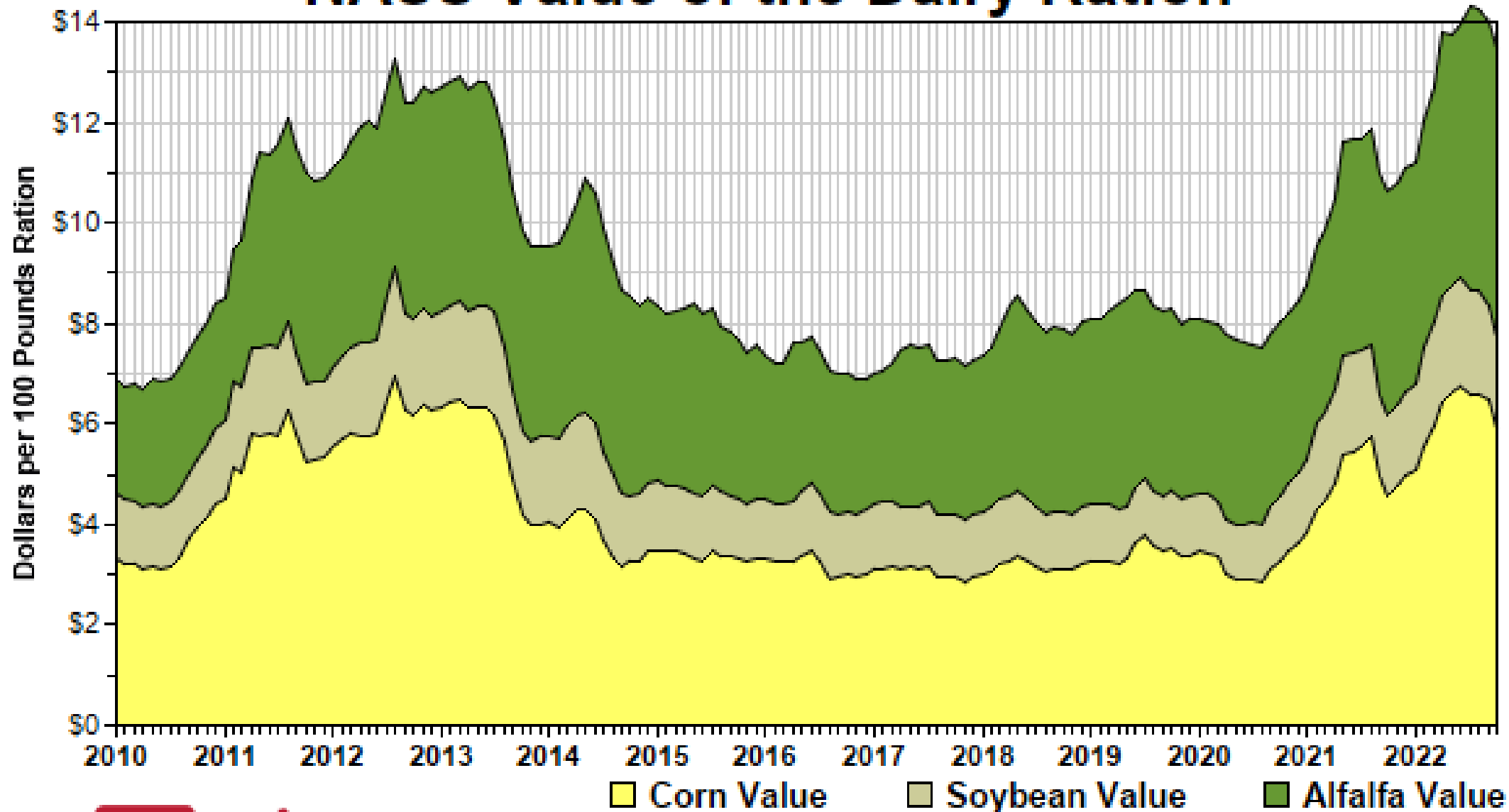


Feed Cost

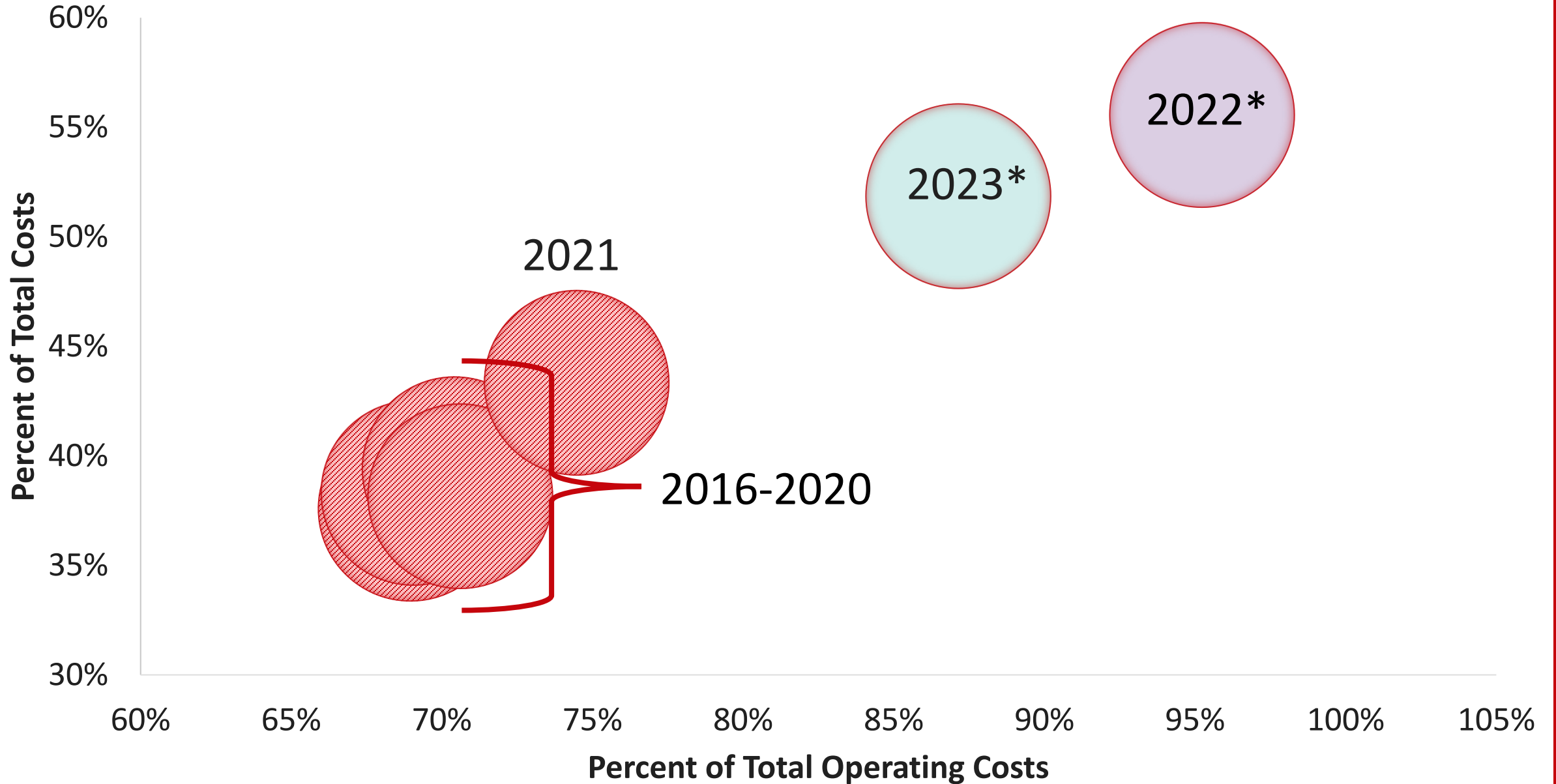




NASS Value of the Dairy Ration



FEED COST AS A PERCENT OF TOTAL OPERATING AND TOTAL COSTS

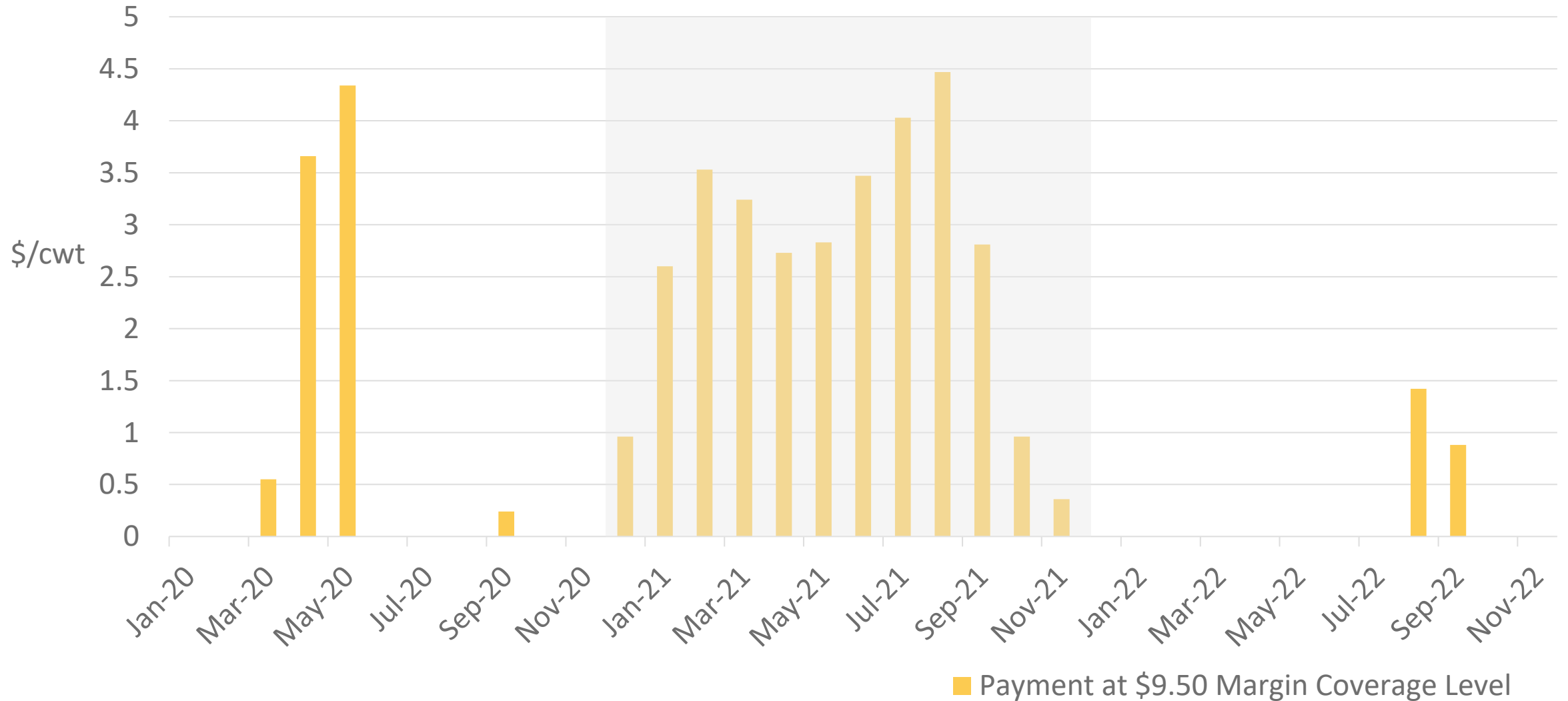


Risk Management?

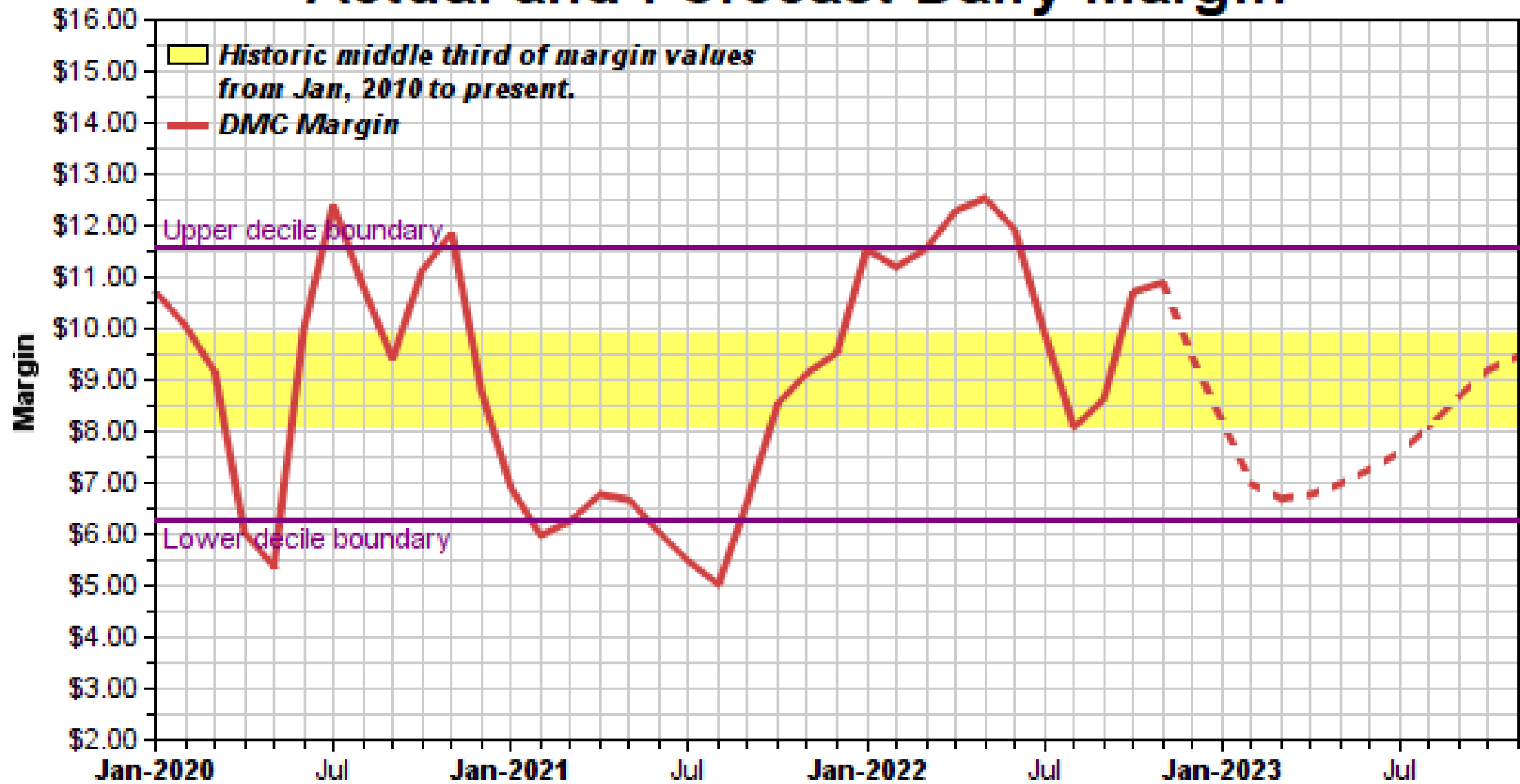




DMC Payment at \$9.50 Margin Coverage Level From Jan 2020-Sep 2022

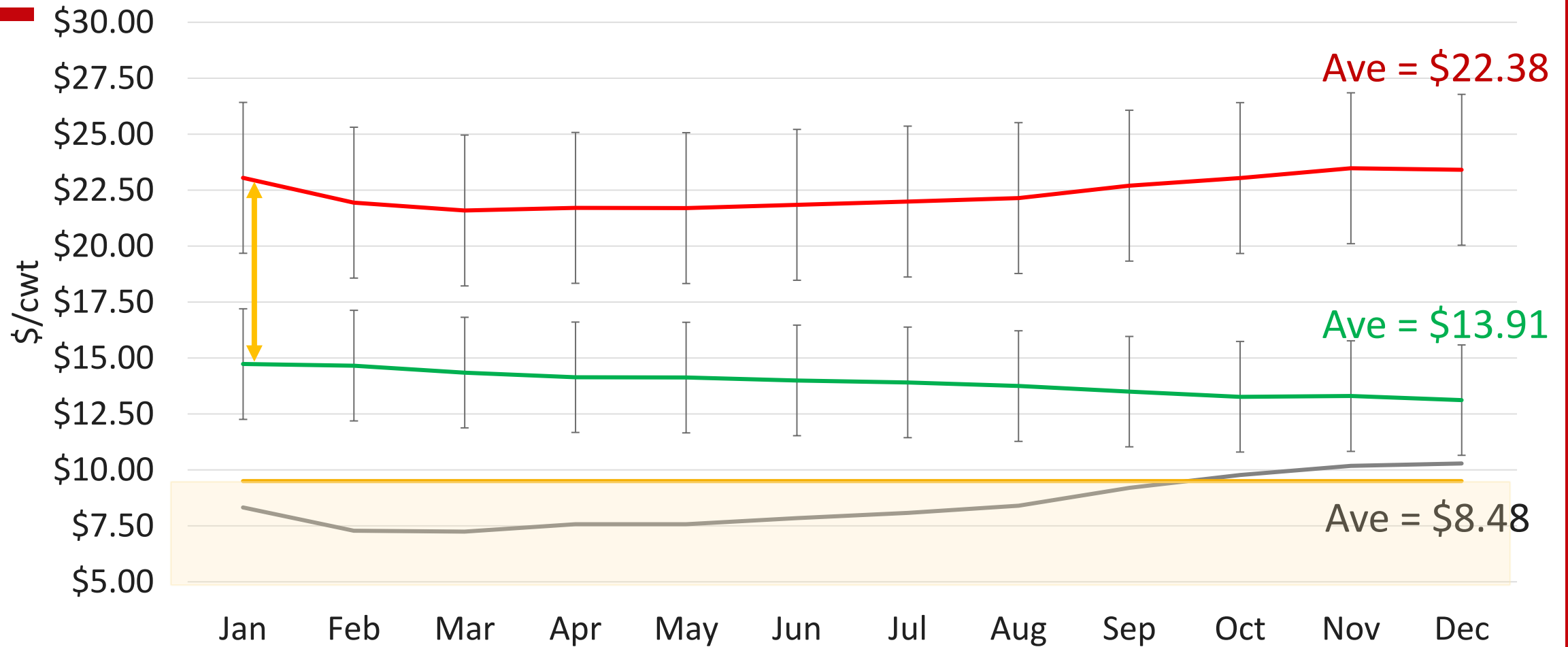


Actual and Forecast Dairy Margin





2023 Price Forecast



— ALL MILK PRICE FORECAST (\$/CWT)

— FEED COST FORECAST (\$/CWT)

— DMC MARGIN FORECAST (\$/CWT)

— \$9.50/cwt Margin Level



In Conclusion

