Evaluating the proposals against the FMMO purpose

The FMMO classified milk pricing system has the precision of a Swiss watch movement. It is intricate, but that complication is necessary to regulate a diverse system of dairy producers, processors, and consumers to avoid market disruption events caused by disorderly markets. Times are changing, markets are moving faster, and dairies are consolidating and are different from their predecessors in size and scope. Fast approaching its 100th anniversary, the FMMO system has witnessed extraordinary change, but the most basic justifications for that system persist today. The FMMO objectives are met by encouraging pool participation and using minimum and classified prices.

Justification for FMMO System

- Milk is highly perishable,
- There is no distinct harvest or season compared to field crops,
- Production and demand have noticeable seasonal patterns,
- Fluid milk demand is more inelastic relative to other dairy products,
- Excess milk must move to longer-shelf-life products like nonfat dry milk powder ("NDM"), cheese, butter, yogurt, etc.,
- The dairy industry has high fixed costs – from farms to processing facilities.

Source: Congressional Research Service, Updated June 15, 2022

Class I primacy is vital to FMMO system function

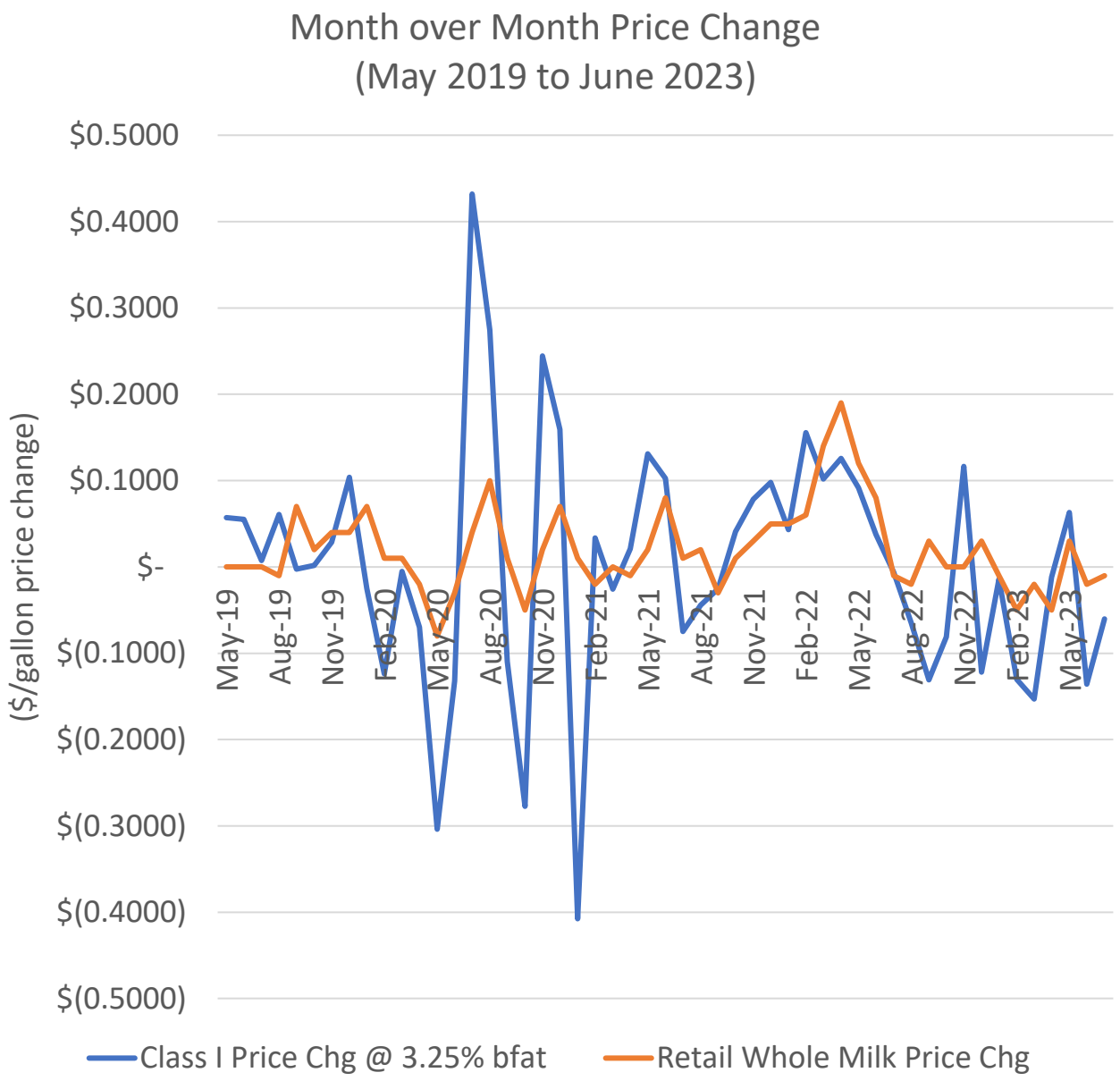
- A higher Class I milk price, relative to the other class prices, sends signals throughout the market to move milk to and from surplus-deficit regions to ensure adequate fluid milk supplies for the market – it acts as a governor or control.
- Class I primacy is necessary to support the current FMMO system design – and reduce instances of disorderly marketing.
- When de-pooling is allowed to persist, more than one price exists in the pool, creating an incentive for supply plants to disassociate from the order affecting Class I handlers and dairy producers.
- Although Class I use has declined due to rising milk production and lower per capita consumption of bottled milk, Class I's ability to attract milk to the pool, one of its primary purposes, remains intact.

Year	FMMO Number	Number of Pool Handlers	Number of Pooled Producers	Population of FMMO (in 1,000)	US Milk Production (in MM lbs)	Total Receipts of Producer Milk (in MM lbs)	Producer Milk Used as Class I (in MM lbs)	Percent of Producer Milk Used as Class I	Percent of US Milk in Pool
2000	11	346	69,585	228,899	167,393	116,923	45,989	39.3%	69.8%
2005	10	302	53,032	238,428	176,931	114,682	44,570	38.9%	64.8%
2010	10	251	45,918	284,480	192,877	126,909	44,970	35.4%	65.8%
2011	10	241	43,650	286,600	196,255	126,879	44,383	35.0%	64.7%
2012	10	237	40,745	288,732	200,642	122,388	43,492	35.5%	61.0%
2013	10	225	40,043	290,752	201,260	132,100	42,752	32.4%	65.6%
2014	10	223	39,146	292,825	206,048	129,420	41,420	32.0%	62.8%
2015	10	214	36,112	295,130	208,508	126,126	41,206	32.7%	60.5%
2016	10	216	34,689	297,291	212,451	133,846	41,140	30.7%	63.0%
2017	10	217	32,981	299,172	215,527	135,502	40,642	30.0%	62.9%
2018	11	233	32,061	300,171	217,568	141,684	40,945	28.9%	65.1%
2019	11	230	29,468	302,048	218,441	156,510	43,882	28.0%	71.6%
2020	11	228	24,906	303,063	223,309	137,818	43,766	31.8%	61.7%
2021	11		23,292		226,258	136,836	42,127	30.8%	60.5%
2022	11		23,108		226,620	151,614	40,986	27.0%	66.9%

What was Average-of to accomplish?

The objectives:

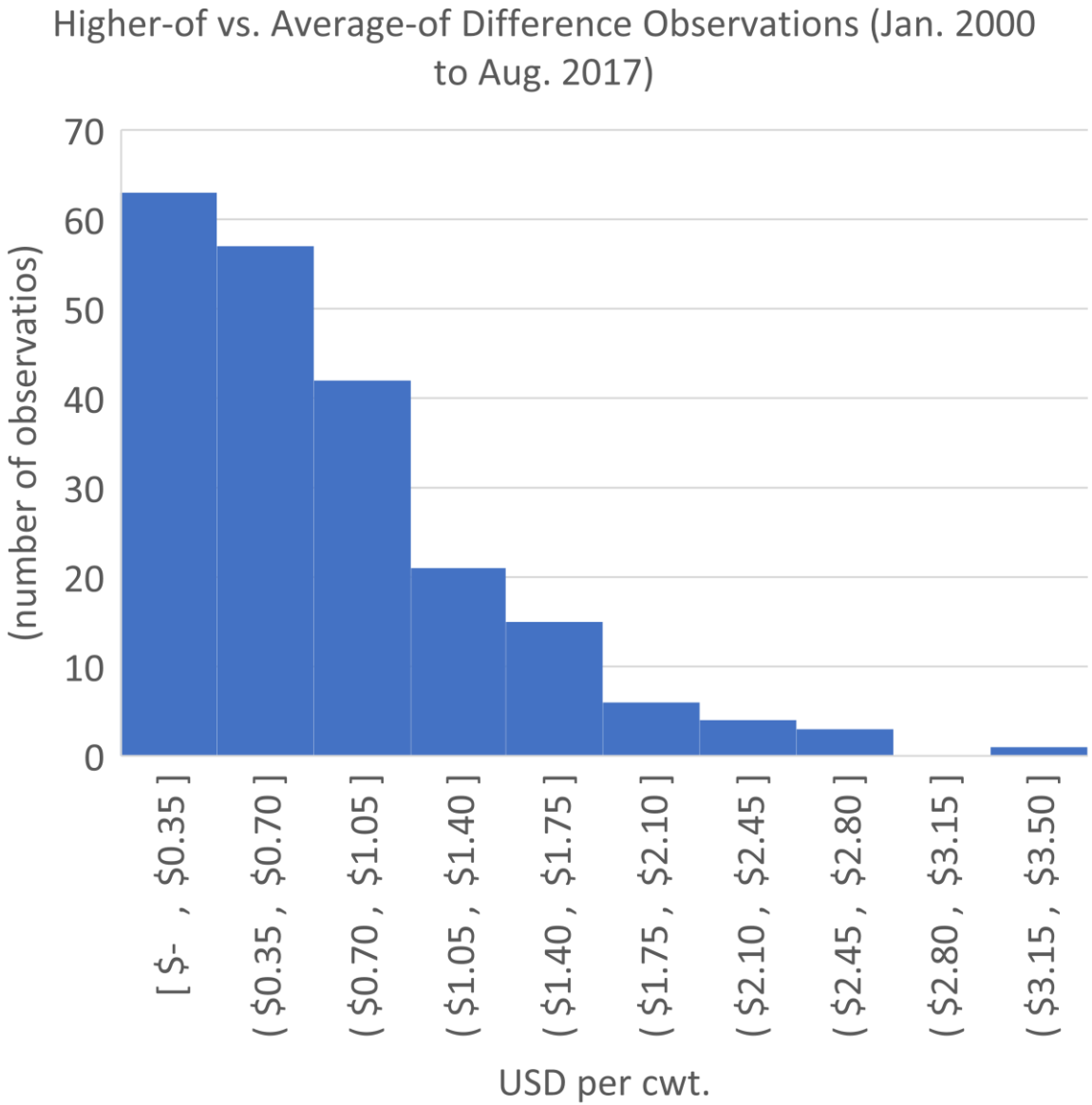
1. The difference would be shared equally by dairy producers and processors over time,
2. More stable Class I milk prices could slow bottled milk per capita consumption losses and
3. Dairy producers and processors have access to Class I risk management



When the differences are out of sync with markets, it penalizes dairy producers

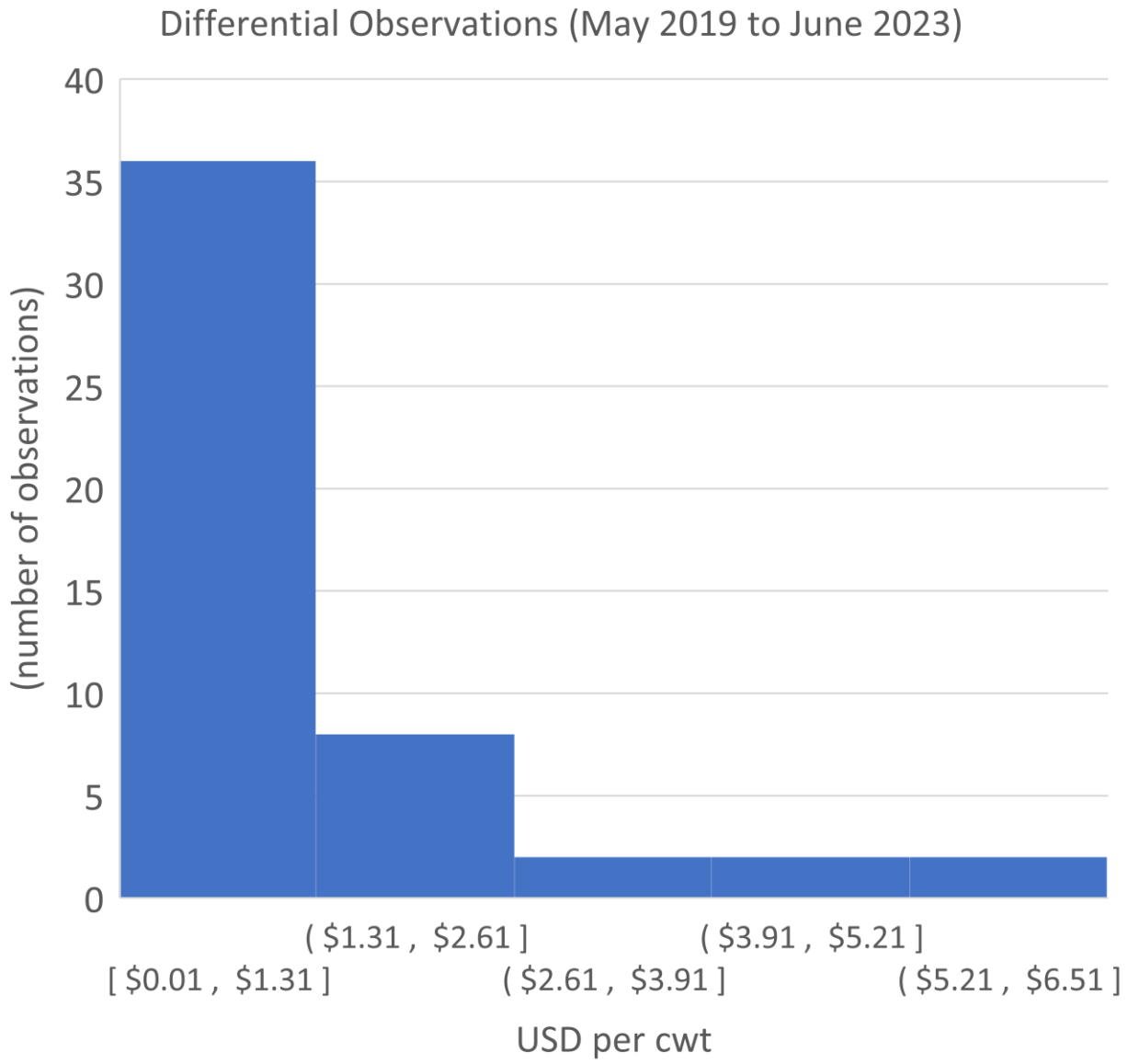
- An analogy for the Average-of vs. Higher-of price – in 2022 Dallas, TX had an average temperature of 68.2F, according to the National Oceanic and Atmospheric Administration. If contractors built homes for annual average temperatures, it could be catastrophic for the city when low temperatures reach 45.8F or high temperatures top 91.8F.
- That example, like Average-of, highlights the "flaw of averages… plans based on assumptions about average conditions usually go wrong."[1]
- This formula limitation resulted in dairy producers forfeiting more Higher-of to the Average-of benefit compared to processors' contributions – contrary to the assumption and most notably during periods of greater volatility or demand resulting in distorted market signals that may have worsened rather than alleviated supply-demand imbalances in the fluid milk market.
- Simply, Average-of-based formulas that anchor the calculation to the Higher-of skim price have an inferior performance as they can only communicate what happened in past periods, not what is happening today and by failing to account for extremes.

1. Harvard Business Review, "The Flaw of Averages," November 2002



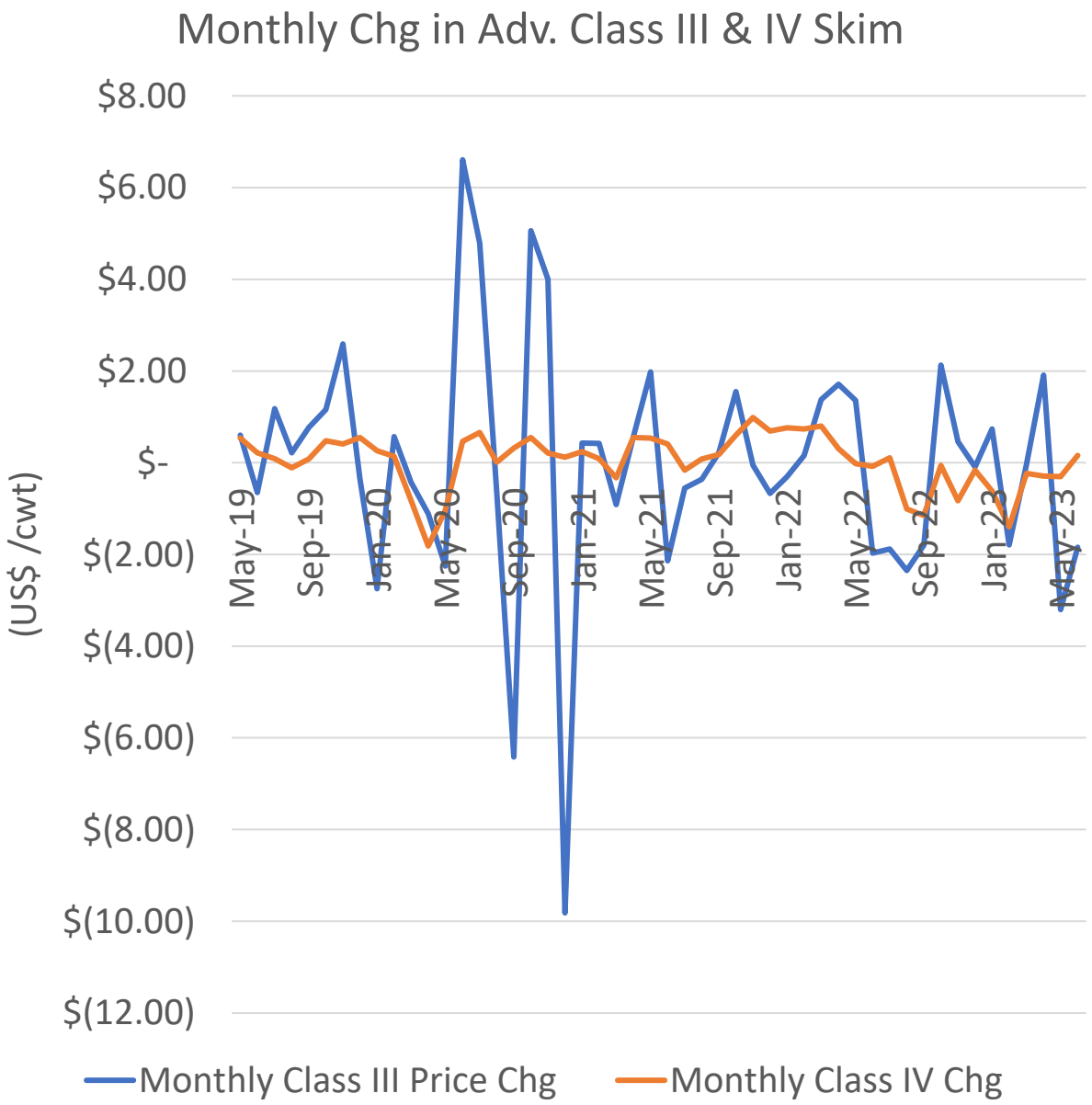
Past performance is no guarantee of future outcomes

- A review of the Average-of results since implementation (May 2019 through June 2023) exposed that the primary assumption was invalid – that the status quo would prevail in future years. Instead, underlying market conditions changed, altering the Average-of dairy producer and processor contribution outcome because the Higher-of vs. Average-of benefit exceeded the codified $0.74/cwt historical average. Between May 2019 and June 2023, the mean increased from $0.74/cwt to $1.26, and the standard deviation was $1.375 – reflecting a significant spread.
- Average-of formulas have limited ability to inform the market about future Class III and IV skim milk price relationships, meaning that the January 2000 to August 2017 Average-of and Higher-of difference would not properly reflect the future without an understanding of the underlying market drivers of Class III and IV skim prices and what could cause prices to change over time.
- That is not isolated to the 2000 to 2017 period, it will repeat as averages of milk prices will underestimate the potential for extreme events. That could be detrimental to dairy producers and processors.



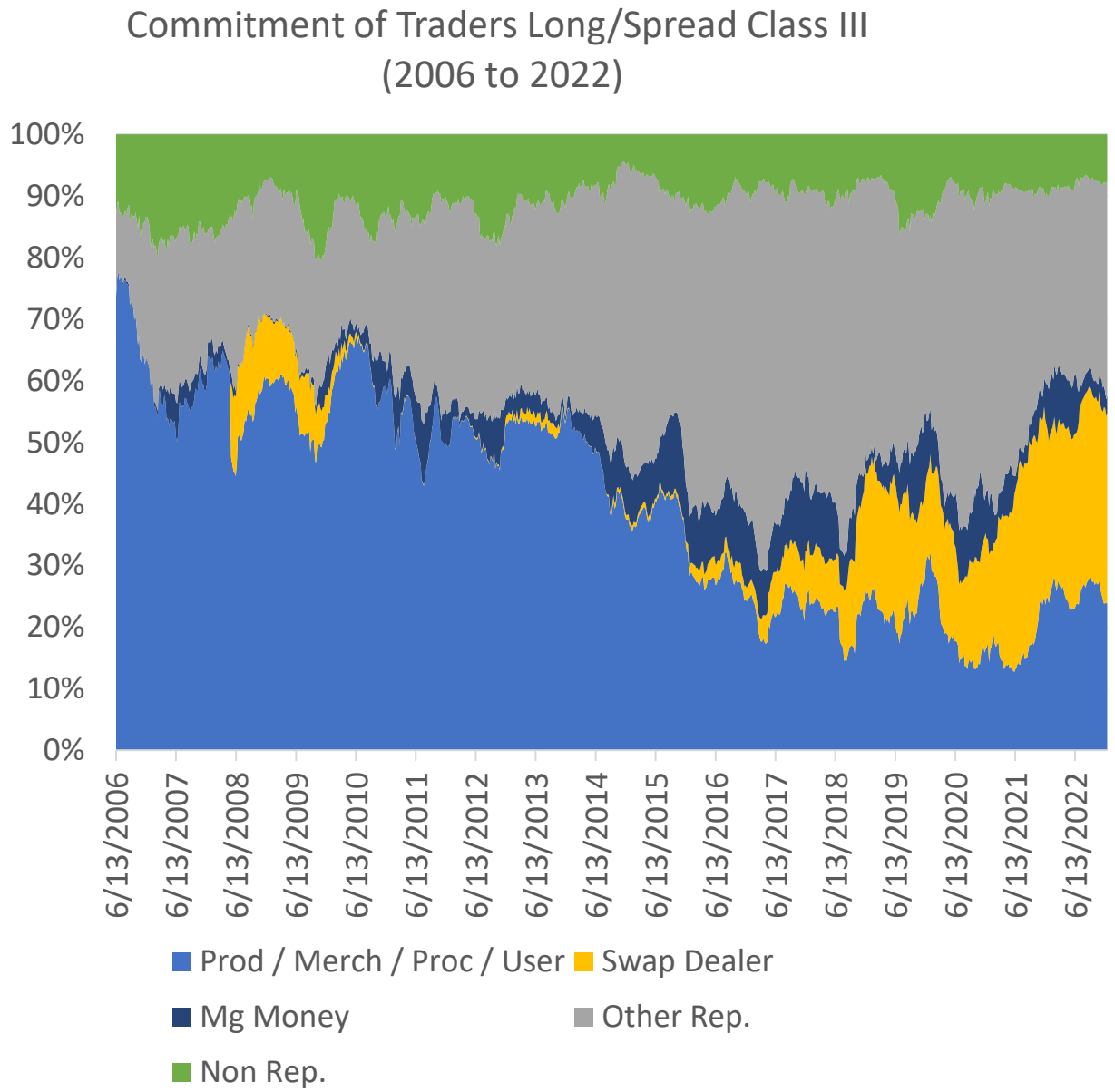
No mechanism relates Class III & IV skim milk

- Some aspects of the FMMO formulas have predictive validity. For instance, with a high degree of certainty, the daily spot CME butter price informs market participants about the National Dairy Product Sales Report ("NDSPR") butter price and, ultimately, the Class III and IV butterfat values.
- Market participants can rely on the relationship between the price series for evaluation, risk management, buy-sell decisions, etc. The same applies to products like cheese, whey, and nonfat dry milk ("NDM") and their impact on Class III and IV milk prices because of the FMMO end-product pricing and classified price formulas – well-defined relationships exist.
- The interplay between the Class III and IV skim values is more complicated. No formula or stipulation relates or binds the Class III and IV skim milk price relationship. Rather, a series of market drivers, like global supply and demand, stocks, policy, trade, etc., change the underlying commodity value.
- That poses an issue for Class I formula proposals that arbitrarily codify a relationship between Class III and IV skim – when one may not exist. These are two independent variables that have limited cause and effect.



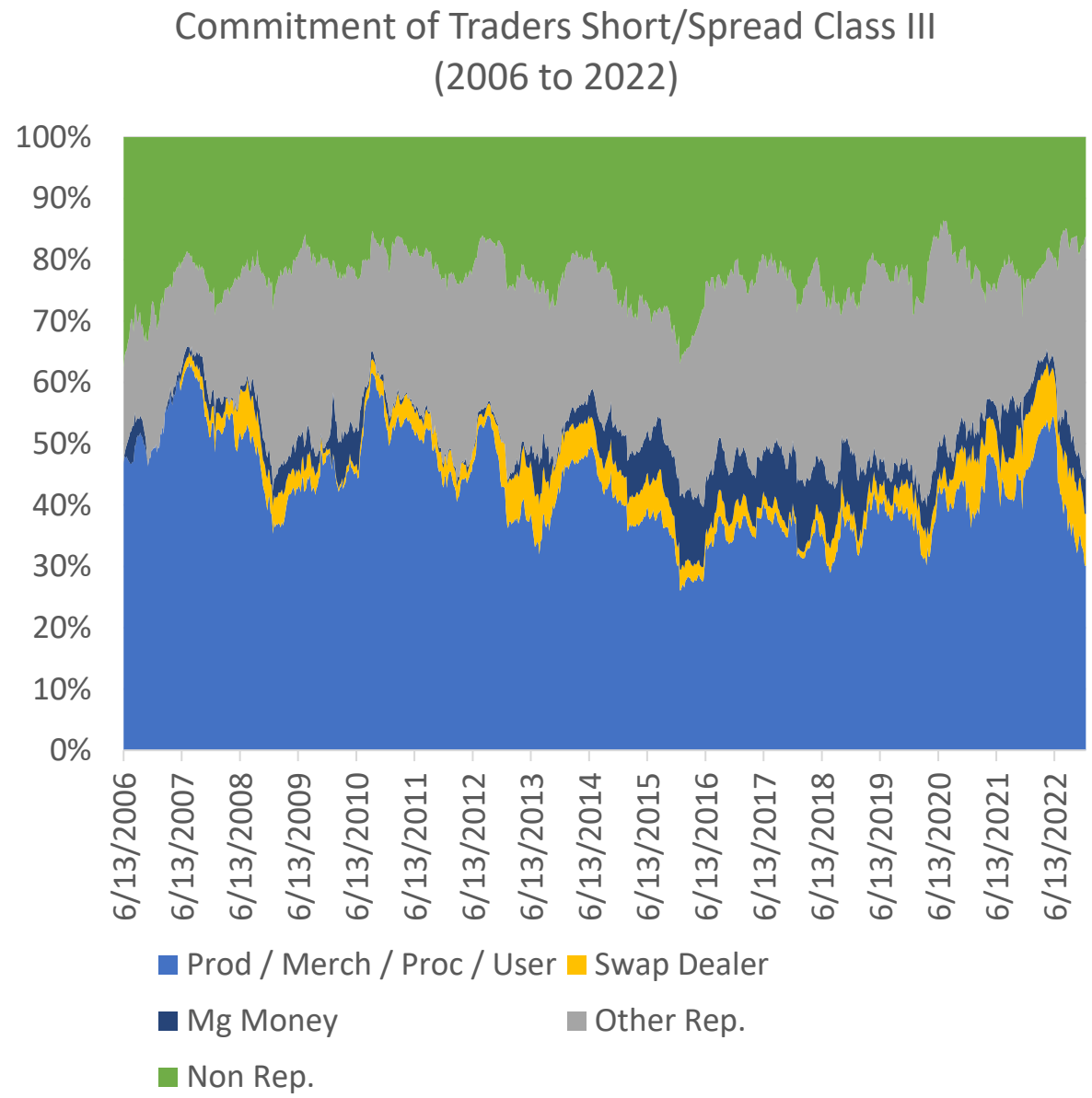
Average-of may undermine risk management

- Real-time data, spot markets, and transparency are hallmarks of efficient markets, permitting futures markets to attract buyers and sellers – providing a marketplace and opportunity to manage risk.
- The proposals' steps to recalibrate Class I prices disrupt the timely communication of market signals to participants, as the information would be years in arrears. The new methodologies offer 24-month to 36-month lookbacks to determine the adjustment that should be incorporated into the Class I skim calculation – a conflict with basic risk management tenets – accurate and timely data.
- Historically, commodity markets have allowed producers, farmers, and buyers to exchange risk at a centralized market. But since the early 2000s, the impacts of outside money have been present in dairy markets due to financialization, albeit on a smaller scale.
- The last time there was a national FMMO hearing, the CME Class III futures and options markets were considerably smaller than today – approximately 36,631 contracts on December 26, 2006 (CFTC.gov, 2006), compared to 59,347 contracts on December 27, 2022 (CFTC.gov, 2022).
- While there is a desire to evaluate dairy risk management under a pre-2006 backdrop, given the financialization of all commodity markets, including dairy, it could lead to inaccurate conclusions.
- CME dairy futures operate in a smaller microcosm than larger commodity markets like oil, corn, and wheat; however, the concept that futures prices represent the strength of the global economy, or in the case of dairy, global demand has a profound impact on domestic pricing and policy decisions that should not be discounted when reviewing the Class I Skim "Higher-of" versus "Average-of" Pricing. Further, while this conversation focuses on Class I – modifications to the system could have consequential impacts throughout the FMMO system and related risk management activity for other products.



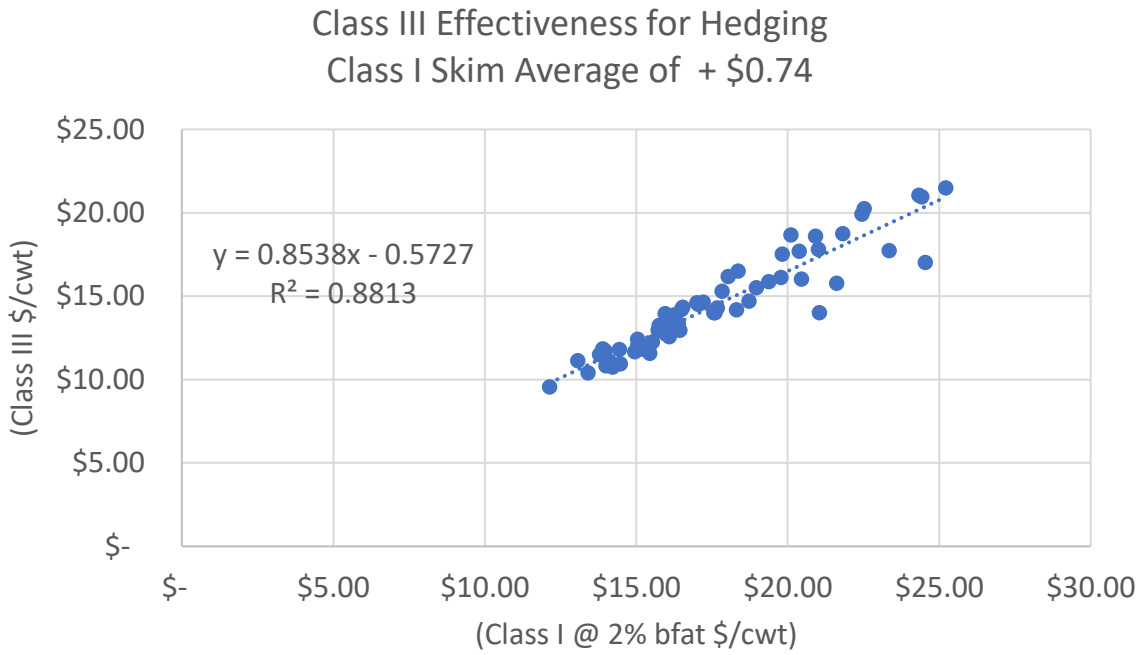
Dairy producers are less likely to hedge Class I

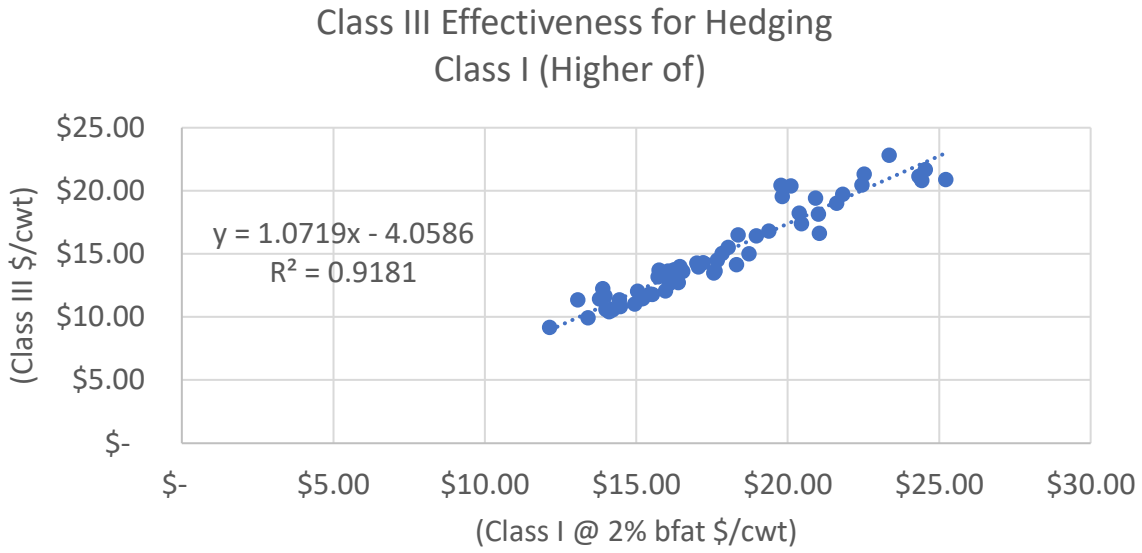
- While the proposal suggests that dairies have equal opportunities to manage Class I risk, that data does not bear out that assertion.
- Dairies should undertake Class I hedging to the degree it impacts their milk price --meaning if Class I utilization is 30% of the Uniform Price, as that is the basis of payment for the dairy, it should avoid hedging more than 30% of its milk price as Class I; otherwise risk may be created.
- Based on the number of cows needed to hedge Class I milk and USDA-ERS, "Consolidation in United States Dairy Farming," in 2017, that would have eliminated 87% of the nation's dairies from accessing Class I hedging contrary to several Class I formula proposals.
- The change to Average-of-price methodology was done to further risk management efforts. Unfortunately, it created a systematic risk that caused dairy producers to step back from all risk management or employ less effective tools in response to the losses that resulted from de-pooling. Most of the market's sell-side liquidity still comes from producers suggesting changes that would cause dairy producers to reduce hedging activity across all classes of milk could be detrimental to markets.



There are many classifications of Class I hedging – proposals highlight one (raw milk)

- Hedging Class I milk is like saying “Ford makes trucks.” Within the truck category, Ford has more than ten models – each with different engines, features, market share, etc.
- Market participants would approach Class I risk management differently, suggesting use and efficacy of Class I risk management would have varying impacts on those business categories.
- Most of the examples provided involve a processor buying raw milk from a dairy or cooperative and the steps taken to mitigate risk.
- However, the discussions fail to address all categories of Class I risk management – that may lend themselves to over-the-counter or custom solutions.
- Additionally, the data suggests that the Higher-of or Average-of risk management performance is relatively similar – meaning either can be used to mitigate price risk.





Most proposals do not solve the current Average-of shortcomings

- At its most basic, every proposal concedes that the Class III Plus or Average-of 1) cannot adequately replicate the Higher-of price in future periods and 2) is not shared equally among dairy producers and others, necessitating a periodic recalibration.
- Rather than recognizing the limitation of the Average-of formula and what prevents the price from imitating the Higher-of performance - these proposals suggest additional steps to align the Average-of and Higher-of formulas and distribute costs between processors and producers.
- Absent a defined relationship between the advanced Class III and IV skim milk prices, any variant of the Average-of/Class III Plus formula will struggle to replicate the Higher-of performance, resulting in a disproportionate cost to dairy producers and the higher likelihood of disorderly marketing conditions.

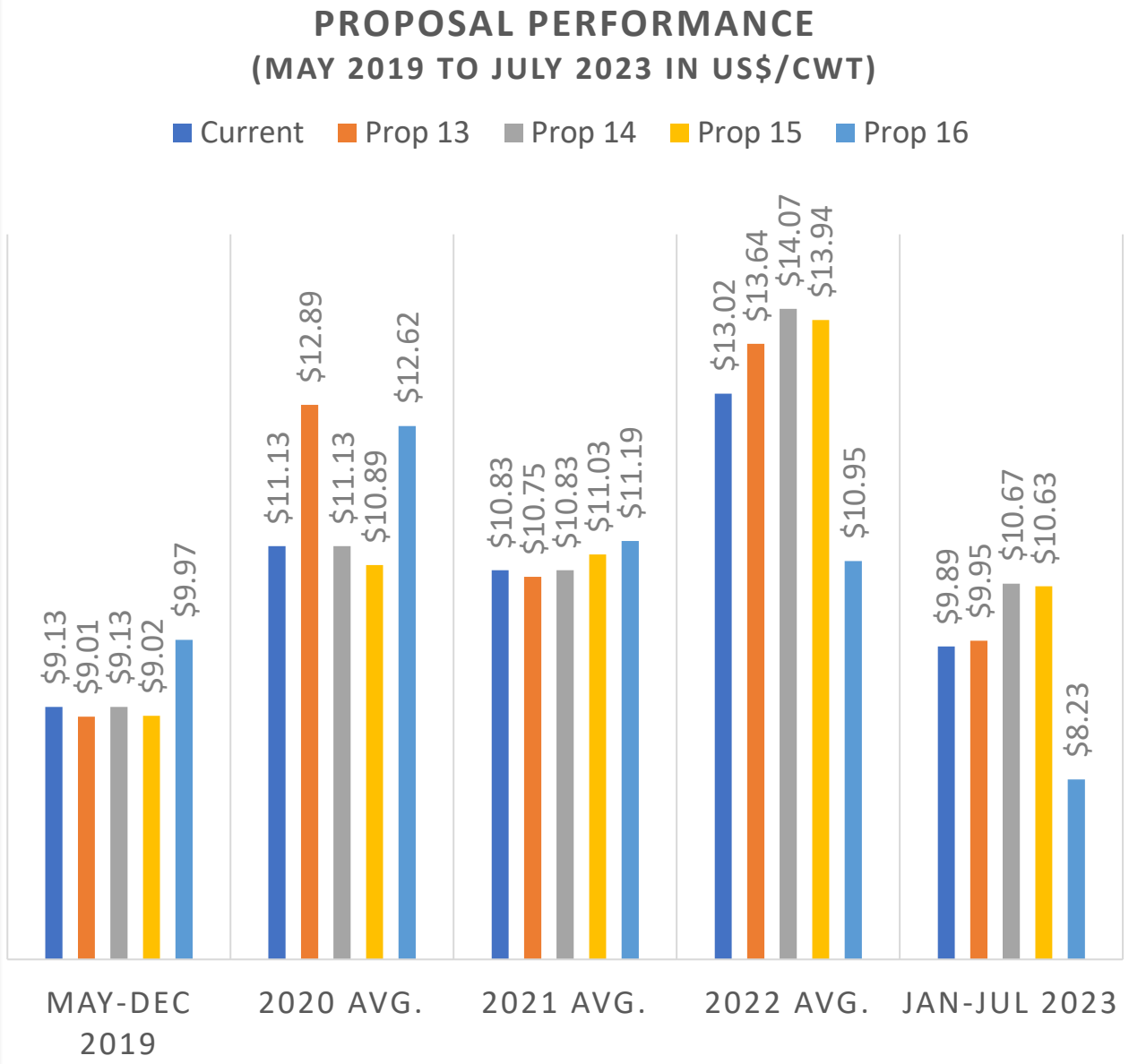
Calculated Average-of/Class III and Higher-of Differences

	Proposal 14	Proposal 15*	Proposal 16
2019	$ 0.74	$ 0.66	$ 0.29
2020	$ 0.74	$ 0.50	$ 0.16
2021	$ 0.74	$ 0.76	$ (0.21)
2022	$ 1.79	$ 1.66	$ 0.03
2023	$ 1.52	$ 1.49	$ 0.25
2024	$ 0.94	$ 0.96	

*Jan to Jul 2024

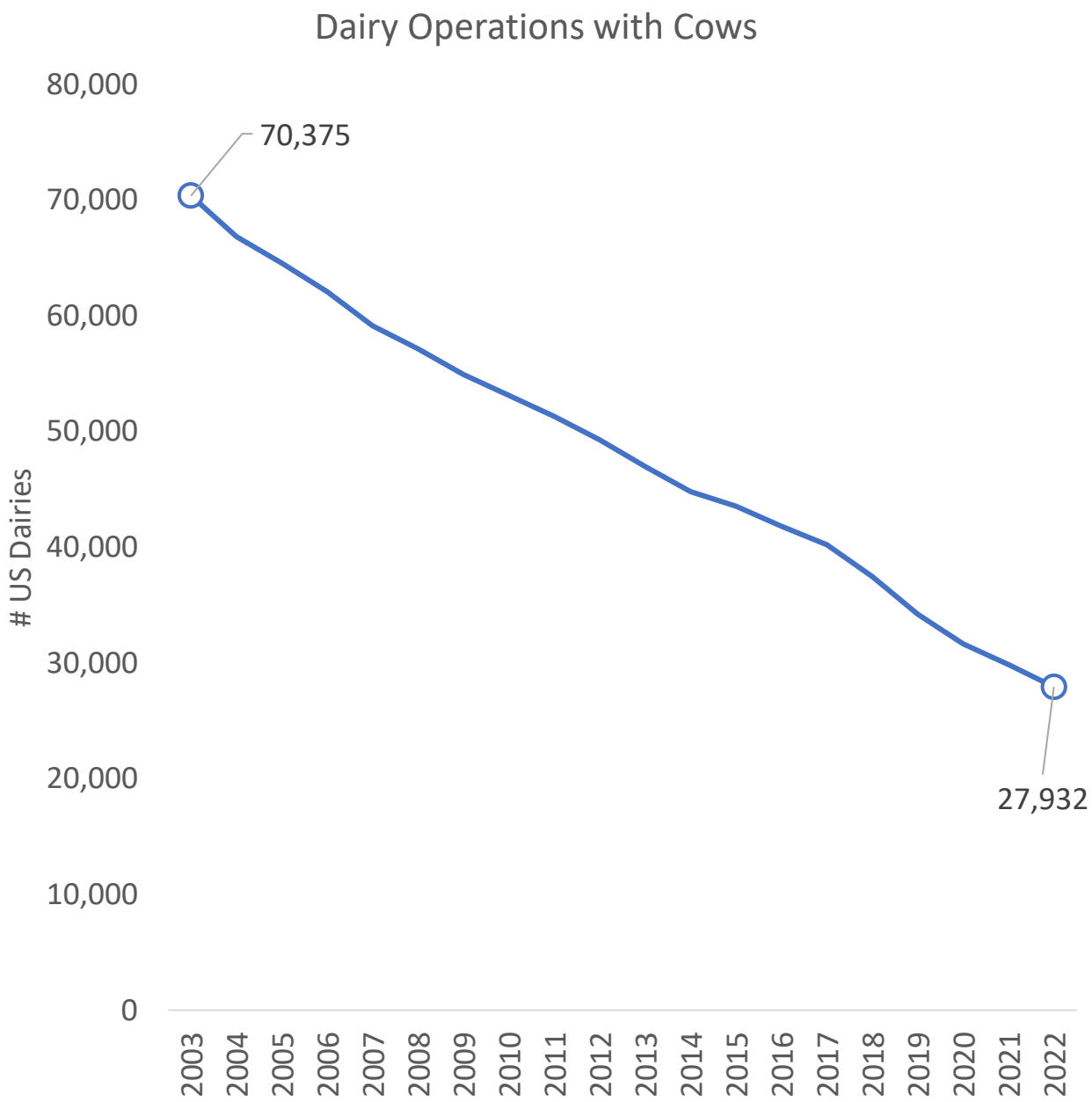
Class I would reflect echoes of past markets

- Assuming static market conditions highlighted an idealistic but unrealistic expectation of the Average-of formula. A fundamental weakness of the Average-of formula is that it is backward-looking. It can only communicate to the market an echo of past events that influenced the price, but it fails to accommodate the rapid transmission of data needed in fast-moving, global markets. Ultimately, the Average-of formula is incapable of conveying current information about the market to facilitate the movement of milk from surplus regions to deficit regions as intended because it is grounded in historical rather than contemporaneous price relationships.
- Further, every period would impact two to three years of future adjustments. For instance, January 2022 would influence Proposal 14's "adder" calculations in 2023 and 2024. That could obscure market signals as past market conditions would influence current prices, making the price haphazard and potentially irrelevant, contrary to efficient markets and USDA's position on timely data.
- In the adjacent chart, the higher 2022 and 2023 Proposal 14 and 15 performance results from including 2020 and 2022 data in current Class I prices.



Make whole efforts are flawed

- The FMMO system is incapable of restitution to the affected parties for market inefficiencies, suggesting that for Proposals 14, 15, and 16, there is a must-be present-to-win methodology. In other words, the dairy producer adversely impacted in the “two prior twelve months periods from August through July” must still be in business in the current period to receive an “adder.”
- USDA reported that between 2020 and 2022, there were 3,720 fewer dairies. Under the Higher-of formula, these dairy producers would have received timely Class I milk payments those years – for some, it may have made a difference. Under Proposals 14, 15, and 16, different dairies would benefit from recalibration as those years would not impact Class I prices until 24 to 36 months later. That undermines the “made whole” assertion expressly stated in all of the proposals.
- The cost misallocation between periods is not limited to dairy producers – it can also spread between orders and processors.
- For demonstration purposes, assume the Average-of payment in the two previous twelve months resulted in an “adjuster.” Consider that in the current period, a dairy plant closed. In that FMMO, the Class I utilization could decline should no other facilities absorb the lost processing capacity. As a result, dairy producers in that FMMO would have lower Class I utilization in the “adjuster” period than in the affected period—another “made whole” failure.
- Similarly, if a bottling plant opened, the FMMO could experience a Class I utilization increase. If the “adjustor” or “adder” reflected a higher adjustment due to prices from several years ago, all else being equal, dairy producers in this order would disproportionately benefit from a disadvantage that may not have existed in the affected period. A new processor would be obligated to the Producer Settlement Fund at a higher rate, for which they received no beneficial offset in a prior period, resulting in market inequity.



Summation

The Class I milk price is the power source of the current FMMO system – the mechanism that keeps the system functioning, implying changes to the Class I milk price should be infrequent and done with the utmost care. If the Class I milk price does not establish the price correctly, the system begins to malfunction. Hindsight being 20/20, the industry found the average of advanced Class III and Class IV skim milk prices plus $0.74 per hundredweight and the higher of the advanced Class III or Class IV skim milk prices are not the same.

They do not function the same, and changing the mechanism has caused the system to stop working properly and efficiently since the May 2019 implementation which has affected all aspects of dairy producer risk management without achieving the three goals justifying the change.

The objectives:

1. The difference would be shared equally by dairy producers and processors over time,
2. More stable Class I milk prices could slow bottled milk per capita consumption losses and
3. Dairy producers and processors have access to Class I risk management