Testimony of Darin Hanson

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My name is Darin Hanson. This testimony is presented in support of Proposal 3: Remove the 500 Pound

Barrel Cheddar Cheese Price from the Class III Protein Price as proposed by National Milk Producers

Federation (NMPF). This testimony is presented on behalf of Foremost Farms USA (Foremost), where I

am Senior Vice President of Supply Chain and Risk Management. I have been employed in the dairy

industry for 20 years in various dairy supply chain roles, including dairy product procurement/sales,

member relations management, and risk management. Prior to working for Foremost, I was employed

by Land O' Lakes and General Mills. During this time, I've accumulated significant knowledge about how

dairy prices are calculated and how dairy products are marketed, especially cheese products.

Foremost is a large dairy cooperative headquartered in Middleton, Wisconsin. Our 850 members

produce 6.2 billion pounds of milk annually and are located in Wisconsin, Michigan, Iowa, Minnesota,

Indiana, Ohio, and Illinois. The cooperative has all sizes of dairy farming operations, ranging from less

than 50 cows to more than 10,000 cows. Foremost is a large manufacturer of cheese, producing 500

million pounds annually. Of that volume, 350 million pounds is soft Italian styles of cheese, making

Foremost one of the top manufacturers of soft Italian style of cheese in the US. Foremost has eight

plants in its dairy manufacturing network. This includes three Italian cheese manufacturing plants, two

cheddar type manufacturing plants, and one butter manufacturing plant, all located in Wisconsin. In

addition, there are two milk separation facilities in Michigan and Wisconsin. Foremost processes two-

thirds of its member milk in its own plants and markets the remaining one-third of its milk to other raw

milk processors. Foremost sells cheese in various bulk sizes to converters, foodservice, and retail

customers where the cheese is incorporated into their finished products. In all cases, Foremost's cheese

is priced using a cheese market price index, which transfers market price risk from Foremost to its customers. Some customers have chosen to engage in risk management activities, such as hedging milk prices, to help to offset their own price risk.

Overview

In recent years, dairy producers in Federal Milk Marketing Orders (FMMOs) have been adversely impacted by fundamental pricing changes in the cheddar cheese market. Commodity cheese prices in the US are primarily indexed on two prices series, the 40-pound block cheddar cheese price and 500-pound barrel cheddar cheese price. Prior to 2017, these markets were highly correlated with an annual average spread of around $0.01 per pound (NDPSR block price higher than NDPSR barrel price). As a result of the strong correlation, both price series were incorporated into the protein price formula used in the Class III milk price through weekly surveys of sellers and buyers. FMMO pricing is designed to provide dairy producers with a fair price for their milk based on the value of dairy products manufactured by processors. However, since 2017, the spread between the NDPSR 40-pound block price and the NDPSR 500-pound barrel price has expanded significantly with the block price exceeding the barrel price by as much as $0.27/lb on an annual basis. As a result, the Class III milk price has been undervalued because the proportion of barrel cheese used in the protein price calculation is significantly overstated relative to total volume of commodity cheese priced using the barrel cheese market as an index. Most commodity cheese in the US (cheddar, Italian, etc.) is priced using the block market as an index; the CME 40-pound block cheddar cheese price is the driver of the reported NDPSR Block cheddar cheese price. Barrel cheese has been selling at a significant discount as compared to block cheese over the past five years, and the resulting impact in the Class III price calculation has cost dairy producers around two billion dollars in lost revenue since 2017 (Table 1). Table 1 shows the spread impact to dairy producer revenue on reported Class III and Class I volume. This actually underestimates the revenue

impact to dairy producers because of significant depooling of Class III volume in 2020 and 2021 which is

not included in the impact calculation. If this volume was included, the impact would be significantly

higher.

Table 1: Block/Barrel Spread Impact to Dairy Producers

Year	Class III Annual Milk Pounds	Class I Annual Milk Pounds	Class I Pounds Driven by Class III	Class III Plus Class I Pounds	Converted to cwt	NDPSR Block Barrel Spread	Spread Minus $0.03/lb	Converted to cwt Impact	$ Impact to Dairy Producers
2017	55,897,144,585	40,654,709,100	37,236,216,602	93,133,361,187	931,333,612	$ 0.07	$ 0.04	$ 0.17	$ 158,500,097
2018	61,583,657,246	40,944,720,574	33,708,732,204	95,292,389,450	952,923,895	$ 0.12	$ 0.09	$ 0.42	$ 397,608,766
2019	64,190,876,175	43,881,688,527	28,848,885,587	93,039,761,762	930,397,618	$ 0.08	$ 0.05	$ 0.24	$ 218,844,406
2020	32,903,300,887	43,766,303,983	21,883,151,992	54,786,452,879	547,864,529	$ 0.27	$ 0.24	$ 1.16	$ 632,801,428
2021	37,560,263,627	42,127,249,523	21,063,624,762	58,623,888,389	586,238,884	$ 0.14	$ 0.11	$ 0.51	$ 297,472,559
2022	81,785,483,605	40,986,267,286	20,493,133,643	102,278,617,248	1,022,786,172	$ 0.01	$ (0.02)	$ (0.10)	$ (101,759,894)
2023	42,243,929,390	20,038,946,961	10,019,473,481	52,263,402,871	522,634,029	$ 0.19	$ 0.16	$ 0.78	$ 408,939,822
Total									$ 2,012,407,184

*The table shows the impact on dairy producer revenue of actual block/barrel spread versus if the spread was $0.03/lb spread (as used in the Class III formula) during 2017-2023 (June). Calculations based on total Class III milk volume plus Class I volume impacted by the Class III price. Since 05/2019 this volume is half of the Class I volume. Prior to 05/2019, the volume included are the months where Class III was the 'higher of' price of the Class III and IV. Based on Class III pricing formulas, every

SOURCE:
United States Department of Agriculture, Agriculture Marketing Service, Dairy Program
Northeast Marketing Area Federal Milk Marketing Order 1 - Statistical Uniform Price
https://www.fmmone.com/
Appalachian Marketing Area Federal Milk Marketing Order 005 - Statistical Uniform Price
https://www.malouisville.com/
Florida and Southeast Marketing Areas Federal Milk Marketing Orders 6 and 7 - Uniform Price
https://fmmatlanta.com/
Upper Midwest Marketing Area Federal Milk Marketing Order 30 - Statistical Uniform Price
https://www.fmma30.com/
Central Marketing Area Federal Milk Marketing Order 32 - Statistical Uniform Price
https://www.fmmacentral.com/
Mideast Marketing Area Federal Milk Marketing Order 33 - Statistical Uniform Price
https://www.fmmaclev.com/
Pacific Northwest & Arizona Areas Federal Milk Marketing Orders 124 & 131 - Uniform Price
https://fmmaseattle.com/
Southwest Marketing Area Federal Milk Marketing Order 126 - Statistical Uniform Price
https://www.dallasma.com/
California Marketing Area Federal Milk Marketing Order 51 - Statistical Uniform Price
https://www.cafmmo.com/

United States Department of Agriculture, Agriculture Marketing Service, Dairy Program, Market Information Branch
National Dairy Product Sales Report
https://usda.library.cornell.edu/concern/publications/zs25x847n?locale=en

FMMO pricing has historically also ensured consistent and predictable earnings for processors of dairy

products, which includes dairy cooperatives. Ideally, the cost of milk incurred by a processor is based on

the revenue generated from the sale of milk products minus the cost to manufacture the products; the

cost credited back to processors is referred to as the make allowance. When a single price series is used

to calculate a component price, the cost of milk will be highly correlated with the prices of the finished

product. However, because the Class III protein price is based on reported prices received from sales of

both block and barrel cheeses, processor profitability will fluctuate if the spread between block and

barrels is highly variable. Since 2017, the price spread between blocks and barrels has been extremely

variable, resulting in earnings volatility for processors. Barrel cheese manufacturers have been paying

high milk costs relative to the prices received for barrel cheese. Block cheese manufacturers have faced

financial uncertainty when the price spread shifts dramatically over time.

Class III Milk Pricing Overview

The Class III milk price in FMMOs is derived from calculations of protein, butterfat, and other solids

component prices. The protein component price uses two cheddar cheese survey price series submitted

by manufacturers through the Dairy Product Mandatory Reporting System (DPMRS) and reported in the

weekly National Dairy Products Sales Report (NDPSR). The price series used are the 40-pound number 2

yellow cheddar block price and the 500-pound barrel cheddar cheese price. The total cheese price used

in the protein price calculation is the volume-weighted average of the NDPSR block and barrel prices,

adding $0.03 per pound to the moisture-adjusted barrel price. Survey reported volume of cheddar

cheese prices was 34% of total cheddar cheese volume produced in the US in 2022 (Table 2). Blocks

represent 16% of total cheddar production and barrels represent 18%.   Removing the barrel price series

from the Class III price calculation would result in 40-pound block cheese representing all US cheddar

cheese production at 16%. While seemingly a small percentage it would still be higher than the butter

counterpart, i.e., NDPSR butter represents just 9% of total US butter production (Table 2).

Table 2: 2022 NDPSR Reported Volumes & Total Dairy Production Volume

NDPSR Reported Volumes

Product	2022 Volume	% of Total
NFDM	1,021,009,612	52%
Whey	243,960,098	27%
Butter	193,437,928	9%
Blocks	644,226,963	16%
Barrels	702,431,327	18%

SOURCE:

United States Department of Agriculture, Agriculture Marketing Service, Dairy Program, Market Information Branch

National Dairy Product Sales Report

https://usda.library.cornell.edu/concern/publications/zs25x847n?locale=en

2022 Total Dairy Products Volumes

Product	2022 Volume
Cheddar	3,963,741,000
Whey Powder	915,248,000
NFDM	1,968,364,000
Butter	2,058,737,000

SOURCE:

United States Department of Agriculture, National Agriculture Statistics Service

Dairy Products

https://usda.library.cornell.edu/concern/publications/m326m1757?locale=en

During Federal Order Reform, USDA proposed then later adopted the inclusion of the 500-pound barrel

cheddar cheese price in the Class III protein price formula because block cheddar cheese and barrel

cheddar cheese prices were highly correlated. Including 500-pound barrel cheese also boosted overall

cheese volume in the survey for price calculation purposes. This increased the sample size by 150%,

according to the original 1999 USDA justification for the Federal Order Reform decision. The 500-pound

barrel cheddar cheese prices were adjusted by $0.03 per pound and adjusted for moisture to arrive at a

synthetic 40-pound block-equivalent price.

The NASS cheese survey price will be determined by adding three cents to the moisture-adjusted barrel price and then computing a [volume-]weighted average price using the block cheese price and the adjusted barrel price … Including both block and barrel cheese in the price computation increases the sample size by about 150 percent, giving a better representation of the cheese market. Since the make allowance [in the protein component price formula] is for block cheese, the barrel cheese price must be adjusted to account for the difference in cost for making block versus barrel cheese. The three cents that is added to the barrel cheese price is generally considered to be the industry standard cost difference between processing barrel cheese and processing block cheese.

64 Fed. Reg. 16098.

With the price spread between blocks and barrels becoming less predictable with larger price difference swings, barrel cheese can no longer be used to represent a synthetic 40-pound block equivalent price; its inclusion in the Class III protein price calculation is not appropriate. The benefit of having a larger sample size is outweighed by the distortion caused by a volatile block-barrel price spread.

Block cheddar cheese and barrel cheddar cheese reported volumes captured in the NDPSR have remained fairly consistent over the past ten years with barrel cheese volumes being slightly higher than block cheese over the past three years (Table 3).

Table 3: NDPSR Block and Barrel Volume Percentages
NDPSR Reported Volumes

Year	Block	Barrel
2013	53%	47%
2014	55%	45%
2015	56%	44%
2016	56%	44%
2017	50%	50%
2018	49%	51%
2019	52%	48%
2020	49%	51%
2021	48%	52%
2022	48%	52%

SOURCE:
United States Department of Agriculture, Agriculture Marketing Service, Dairy Program, Market Information Branch
National Dairy Product Sales Report
https://usda.library.cornell.edu/concern/publications/zs25x847n?locale=en

A History of the Price Spread Between 40-Pound Blocks and 500-Pound Barrel Cheese

From 2000 to 2016, the price spread between NDPSR 40-pound block cheddar cheese and 500-pound

barrel cheddar cheese annually averaged $0.01 per pound with a range of -$0.01 per pound to $0.03 per

pound (Table 4). The high correlation and tight spread between block cheese and barrel cheese prices

diminished significantly from 2017 through 2022. The annual average price spread of NDPSR block

cheese prices over NDPSR barrel cheese prices during the five-year period was $0.11 per pound, with an

annual range of $0.01 per pound to $0.27 per pound. The highest monthly spread during this period

was $0.61 per pound, but the lowest was -$0.20 per pound.

Table 4: NDPSR (NASS) Block and Barrel Spread History

Year	NDPSR Block Minus Barrel Spread
2000	$ 0.03
2001	$ 0.01
2002	$ 0.02
2003	$ 0.02
2004	$ 0.01
2005	$ 0.02
2006	$ 0.00
2007	$ (0.01)
2008	$ (0.00)
2009	$ 0.02
2010	$ 0.01
2011	$ (0.01)
2012	$ 0.01
2013	$ 0.02
2014	$ 0.01
2015	$ 0.01
2016	$ (0.01)
2017	$ 0.07
2018	$ 0.12
2019	$ 0.08
2020	$ 0.27
2021	$ 0.14
2022	$ 0.01
2000-2016 Avg	**$ 0.01**
2017-2022 Avg	**$ 0.11**

SOURCE:

United States Department of Agriculture, Agriculture Marketing Service, Dairy Program, Market Information Branch
National Dairy Product Sales Report
https://usda.library.cornell.edu/concern/publications/zs25x847n?locale=en

US Cheese Production & Pricing

Total US cheese production in 2021 was 13.8 billion lbs. with cheddar cheese representing 3.9 billion pounds, or about 29% of total cheese production (Table 5). Total barrel cheese production capacity in the US is estimated to be around 1.2 billion pounds annually, which is only 9 % of total commodity cheese production. Breaking out barrel production capacity from all cheddar cheese production leaves 2.7 billion pounds of block cheddar in the form of 40-pound and 640-pound block cheese (69% of cheddar cheese).

The CME 40-pound block cheddar price is used as a pricing index for most of the cheese sold in the US. Whether selling 40-pound block cheddar, 640-pound block cheddar, Mozzarella, other American cheese (e.g., Colby and Jack cheeses), or other styles such as Parmesan and Hispanic cheeses, the 40-pound block cheddar cheese price is typically used as an index for cheese selling prices. In my experience at Foremost and other companies, at least 75% of natural commodity cheese sold in the US uses the CME 40-pound block cheddar cheese price as a pricing index.

Table 5: 2021 Cheese Production (Billion Lbs)

Cheese Type	Volume	Percentage
Italian	5.8	42%
Cheddar Block	2.8	20%
Other	2.4	17%
American Other	1.6	12%
Cheddar Barrel	1.2	9%
Total Cheese	13.8	

SOURCE:
United States Department of Agriculture, National Agriculture Statistics Service
Dairy Products
https://usda.library.cornell.edu/concern/publications/m326m1757?locale=en

From Table 5, barrel cheddar cheese represents only an estimated 9% of natural cheese manufactured in the US. The CME 500-pound barrel cheddar cheese price is used as an index to price most barrel cheese (and process cheese products) but is not often used to price other natural cheeses. In my experience, the CME barrel cheese price is used to price only around 9% of total US natural cheese and the other cheese categories use the block market as a pricing index.

Conclusion

The increasingly volatile relationship between 40-pound block cheddar cheese prices and 500-pound barrel cheese prices over the past five years has negatively impacted both dairy producers and cheese processors. Historically, using both block cheese and barrel cheese prices in the Class III pricing formula was feasible and widely accepted because the relationship was consistent over time and barrel prices did not have such an adverse and disproportionate effect on the Class III milk price calculation. However, since 2017, the price spread has widened and has become less predictable, more volatile and more disparate from month to month. The two forms of cheddar cheese are not interchangeable products and have developed into different and distinct markets. Including barrel cheese prices in the Class III formula reduces revenue for dairy producers because barrels overrepresent the volume of total US cheese production that uses the barrel price series as a price index. Eliminating the barrel price series from the Class III price calculation will reduce financial uncertainty for processors, including cooperatives, where cheese prices are not reflective of actual market conditions and could result in a shift to where both block and barrel processors use block market as a pricing index. Price risk management opportunities for processors will be enhanced because there are no barrel market futures or options available today, and existing risk management tools (Class III, Cheese, Block futures/options)

will be more efficient to price customers and manage input cost risk. NMPF strongly recommends

eliminating the barrel cheddar cheese price series from the Class III price calculation.

Foremost thanks the USDA for the opportunity to testify on this critical FMMO reform topic.