Direct Testimony for Federal Milk Marketing Order Pricing Hearing

CME Group

My name is Anne Krema. I serve as Director of Agricultural Research & Product Development for CME Group.

As the world's leading derivatives marketplace, CME Group offers the widest range of global benchmark products across all major asset classes and provides clearing services to our customers around the world. Thank you for inviting me to testify today regarding CME dairy markets.

From the founding of the Chicago Board of Trade in 1848 as a venue for grain producers to manage their price exposure, to the establishment of the Chicago Butter and Egg Board in 1898, the origins of CME Group are deeply rooted in Agriculture. CME Group Agricultural futures and options markets serve as a key means for physical market participants to minimize risk and protect themselves against adverse price movements.

At CME Group our primary product offering includes futures and options contracts. A futures contract is a legally binding agreement to buy or sell a standardized asset on a specific date or during a specific month. An option on a futures contract is the right, but not the obligation, to buy or sell the underlying futures contract at a predetermined price on or before a given date in the future. Commodities futures and options markets are essential to producers, processors, retailers, and consumers to help manage price risk throughout the supply chain. CME dairy futures and options serve as hedge tools for physical market participants, allowing them to lock in either sale or purchase prices for milk or dairy products.

The Chicago Mercantile Exchange, a part of CME Group, has worked continuously toward the development of dairy futures and options markets since 1996 with the launch of milk futures and options. Risk management applications for CME dairy markets can extend from producers to processors, traders, and end users of dairy products. With the support and collaboration of the industry, CME Group has been able to expand our dairy risk management complex from one commodity in 1996, to now offering products on seven different dairy commodities. Average open interest, or the average amount of open positions held on a daily basis, equated to over 37 billion pounds of product across futures and options in 2022 compared to just over 2 billion pounds of product in 2000.

In addition to acting as tools to manage price risk, futures markets also serve as a mechanism for price discovery. Futures exchanges offer a venue for buyers and sellers to lock in prices at a future date. This act of buyers and sellers coming together and submitting bids and offers, or indications of what they are willing to buy or sell for at a specific point in the future, translates to price discovery. When this happens on a forward-looking basis, the industry is supplied with transparent signals of where market participants expect prices to go, which can help inform future business decisions.

Commercial hedgers rely on CME dairy markets to be able to reduce their physical price exposure. While these commercial hedgers look to minimize their price risk, there are other market participants that are willing to assume risk and take the other side of a trade. These market participants are often referred to as liquidity providers and deliver a critical function to efficient futures and options markets. Liquidity providers will often show both buy orders and sell orders in the market. In doing so, these market participants expand liquidity and offer the ability for hedgers to either establish or close out of hedges more efficiently. Liquidity providers frequently improve upon the best buy and sell orders in the market,

and thus reduce costs for both physical buyers and sellers. These market participants offer a service to the marketplace and physical industry, and without liquidity providers, the overall ability to effectively manage risk would be significantly reduced for participants throughout the supply chain.

CME Group recognizes that the purpose of this hearing is to discuss the need to evolve policy to reflect current dynamics within the U.S. dairy industry. We do not have a stance on the proposals submitted to the USDA. We do, however, wish to ensure stakeholders are aware that, depending on the timeframe for implementation, some of the changes proposed could have an impact on risk management solutions for the dairy industry.

When market participants enter into futures and options positions, they do so based on underlying assumptions, informed by established contract terms. Futures markets are either physically or financially settled. In physically settled markets, final settlement of the contracts occurs through delivery of the underlying commodity. There will be a standardized physical specification of the product eligible for delivery as well as established delivery terms. Alternatively, in financially settled futures contracts, there is an index or price reference that is utilized for final settlement of the contract. Market participants are then credited or debited against the pricing reference at expiration. Financially settled contracts also have established terms on their respective pricing references. Dairy futures products at CME Group are all financially settled using underlying USDA published pricing references.

CME dairy markets include futures and options on Class III Milk, Class IV Milk, Cash-Settled Cheese, Block Cheese, Cash-Settled Butter, Nonfat Dry Milk, and Dry Whey.

Final settlement for Class III Milk futures is based upon the USDA Class III price for milk for a particular month, as first released. Likewise, final settlement for Class IV Milk futures is based upon the USDA Class IV Price for milk for a particular month, as first released. The prices for USDA Class III and IV milk, upon which our futures contract settle, are derived from Federal Milk Marketing Order (FMMO) formulas. Final settlement for Cash-settled Cheese, Block Cheese, Cash-Settled Butter, Nonfat Dry Milk, and Dry Whey futures are based upon the USDA monthly weighted average prices for the respective product.

As the USDA published prices for both Class III and IV milk, as well as the USDA monthly weighted average prices for the aforementioned dairy products, are dependent on the established, current FMMO formulas and collection criteria for National Dairy Product Sales Report (NDPSR) surveys, participants within CME dairy markets enter into futures and options positions based on the current FMMO formulas and NDPSR survey methodology. Any changes to the Federal Order formulas or underlying NDPSR survey methods could result in a material change to the valuation of the contracts.

Due to the current methodology for deriving USDA Class III and IV Milk prices incorporating Cheese, Butter, Dry Whey, and Nonfat Dry Milk prices, there is a relationship that exists between Class III and IV Milk futures and the corresponding dairy product futures by class. This relationship can act as a mechanism for hedgers to manage both input and output costs. This relationship also presents the trading community an opportunity to provide liquidity to the market while managing the risk they take on. While some market participants may only have exposure to either milk or processed dairy products, liquidity providers can utilize the relationship between milk and dairy products to offer additional liquidity to either side of the market through spread trading, or the simultaneous buying and selling of different commodity futures. At times, there are natural sellers of milk looking to lay off risk, without an equal number of natural buyers in the market. Additionally, there may be times when buyers of dairy

products are looking to lay off risk when there is not the same amount of natural sell-side participation in the market. Liquidity providers help bridge this gap through the spread relationship. This trading behavior, often referred to as crush trading, accounts for a significant portion of dairy futures and options participation. The spread relationship and corresponding positions put on across products are dependent on the FMMO formulas. If the FMMO formulas are not known, the spread relationship is jeopardized, and market participants may be reluctant to put on hedges or take on risk in months where there is uncertainty in the relationship.

CME dairy futures and options contracts are listed for 24 consecutive months. On average, total daily open interest, or number of open positions held on a daily basis, was 269,354 contracts across futures and options in 2022. When multiplied by contract size and converted to pounds, this equates to 37.3 billion pounds of product.

Figure 1

CME Dairy Futures & Options – Converted to Contract Size

2022 Average Daily Open Interest

Contract	Total Open Interest (Futures & Options)	Contract Size (lbs)	Open Interest Converted to lbs.
Class III Milk Futures/Options	126,446	200,000	25,289,200,000
Cash-Settled Cheese Futures/Options	49,029	20,000	980,580,000
Block Cheese Futures/Options	2,071	20,000	41,420,000
Nonfat Dry Milk Futures/Options	22,114	44,000	973,016,000
Butter Futures/Options	17,408	20,000	348,160,000
Dry Whey Futures/Options	4,789	44,000	210,716,000
Class IV Milk Futures/Options	47,496	200,000	9,499,200,000
Total	269,354		37,842,292,000

CME dairy markets have grown substantially since the introduction of milk futures and options in 1996. In 2000, average daily open interest was about 11,600 contracts. Average daily open interest in 2008 was about 85,800 contracts. From 2008 to 2022, CME dairy market size increased over threefold.

Figure 2

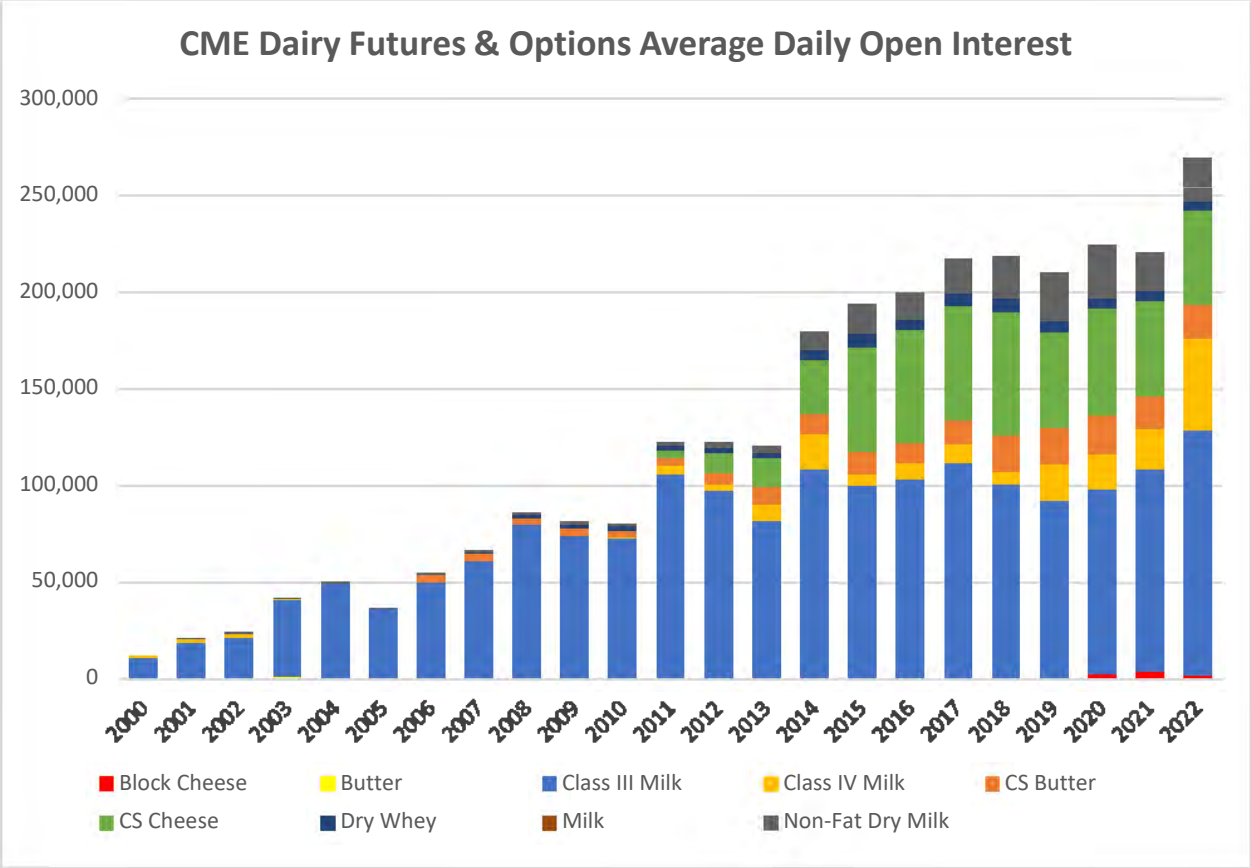


Figure 3

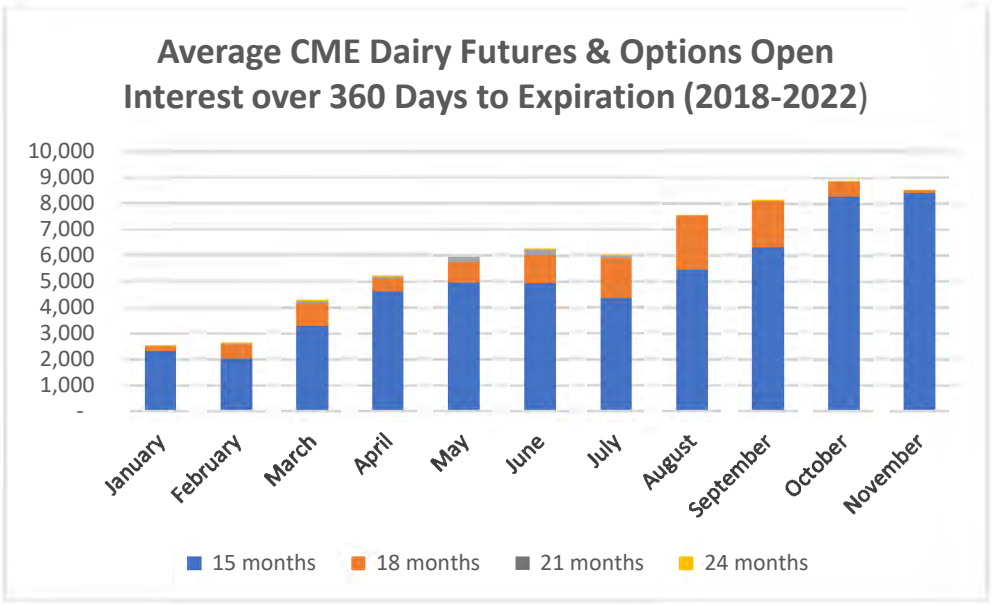
Average Open Interest Distribution (2018-2022)

All CME Dairy Futures & Options

Days to Expiration	Estimated Month Equivalent	Percentage of OI Covered on Average	Cumulative Percentage of OI Covered on Average
<90	3	47.49%	47.49%
91-180	6	27.65%	75.14%
181-270	9	15.24%	90.38%
271-360	12	6.96%	97.34%
361-450	15	2.26%	99.60%
451-540	18	0.38%	99.97%
541-630	21	0.03%	100.00%
631-720	24	0.00%	100.00%

While the majority or open interest resides in the first 12 months on average, the utilization of contract months beyond 12 months can vary throughout the year. Anecdotally, commercial hedgers often look to lock in hedges for the following calendar year beginning in the mid to late summer months. This behavior can be observed in the chart below, as the average open interest for contracts with over 360 days to expiration increases during the second half of the year. The greatest utilization of contracts up to 18 months out occurs in August.

Figure 4



While there are numerous proposals being discussed in this hearing that could result in a material change to CME dairy markets, we are providing an isolated, hypothetical example in order to demonstrate possible impacts to open interest for a range of proposed changes to make allowances.

Figure 5

	Current	Example 1	Example 2
Cheese Make Allowance	0.2003	0.2400	0.2422
Butter Make Allowance	0.1715	0.2100	0.2251
Dry Whey Make Allowance	0.1991	0.2300	0.2582
NFDM Make Allowance	0.1678	0.2100	0.2198
Class III Change/CWT	-	-$0.58	-$0.77
Change to Individual Class III Contract	-	-$1,160	-$1,540
Change in Value to Average 2022 Class III Futures Equivalent Open Interest	-	-$65,101,520	-$86,427,880
Class IV Change/CWT	-	-$0.53	-$0.67
Change to Individual Class IV Contract	-	-$1,060	-$1,340
Change in Value to Average 2022 Class IV Futures Equivalent Open Interest	-	-$23,250,040	-$29,391,560
Overall Impact to Contract Value (Absolute Value)	-	$88,351,560	$115,819,440

*Calculated based on 2022 average futures open interest and delta-weighted options open interest.

CME Group routinely files changes to contract specifications that are subject to Commodity Futures Trading Commission (CFTC) review, which may be due to changes in the underlying commodity or to maintain compliance with the core principles set by the Commodity Exchange Act and CFTC Regulations. These changes can include adjustments to product quality and grading standards as informed by continuous industry engagement.

Generally, when material changes are made to contract specifications, the changes are either applied on contracts without open interest or are communicated to market participants with sufficient notice in such a way that the changes will not disrupt settlement or other key market features.

CME Group has made various changes over the years to the Live Cattle futures contract to ensure that it continues to suit the needs of the evolving commercial industry. In 2019, for example, we filed a rule change submission with the CFTC to change both the quality grade and deliverable weight requirements for the contract. Both of these changes were considered material changes as they were changes to the underlying contract terms and it was expected that there could be an impact to contract value. As such, these changes were announced in August of 2019 to be implemented in February 2021, out beyond open interest.

To provide another example, in December of 2008, CME Group announced several changes to the Wheat futures contract. Two of the changes, adding new delivery points and introducing seasonal storage rates on the contract, were determined not to be material changes that would impact the value of the contract and thus were implemented in July 2009 which applied to some contracts with open interest. There was also a change announced to the underlying delivery grade in December 2008. Because the change to the underlying delivery grade in the physical contract specification was determined to have a material impact on price, this change was not implemented until September 2011, beyond open interest.

There are certain mechanisms utilized for other futures markets at CME Group that require transparent, readily available data to update contract terms on an ongoing basis. One such example of a dynamic adjustment mechanism is Variable Storage Rates (VSR) in wheat futures. VSR is a market-based determinant of maximum allowable storage charges for outstanding wheat shipping certificates. The respective storage rate for a defined duration of the contract's lifespan is determined by the price relationships between contract months in the wheat futures markets. In the case of VSR, this adjustment mechanism was introduced to the market with advanced notice and is now an established contract term in the respective CBOT rulebooks. Additionally, the data required to determine the storage rate is available to the public on a daily basis.

As previously mentioned, market participants have entered into Class III and IV positions, as well as spread positions across dairy products, based on the current FMMO formulas for Class III and IV milk and the current collection methods for the NDPSR product surveys. Making a change that would have an impact on settlement values on contracts with significant open interest could result in both physical hedgers and liquidity providers losing confidence in CME Group dairy markets and reducing or eliminating participation, which would put strain on the industry's ability to manage risk overall.

In addition to CME Group cleared dairy markets, there are other risk management tools utilized in the industry that could be impacted if liquidity in CME dairy futures and options markets suffers. The Over-the-Counter market, or OTC market, is utilized by commercial hedgers when CME markets may not suit a market participant's risk profile or hedging needs. These bilateral trades are not cleared, and thus carry counterparty credit risk, but can serve as an additional risk management solution for hedgers, particularly in months further out the forward curve. OTC market participants carry open positions off exchange that are not represented in the CME dairy market open interest presented earlier. The firms that offer these OTC bilateral transactions take on risk from hedgers and often in turn will lay off that risk using CME dairy markets. If there is not sufficient liquidity available for these firms to lay off the risk associated with offering these hedge opportunities, the overall capacity for those firms to offer OTC risk management tools could be reduced as well.

Producer insurance programs such as Dairy Revenue Protection (DRP) are also related to CME dairy markets as they rely on CME Group markets to inform the expected prices quoted to producers when they purchase policies. DRP has been adopted by many producers such that roughly 32% of U.S. milk production was covered on an effective basis for calendar year 2022 by DRP. This equates to the equivalent of over 364,000 milk futures contracts, or an additional 72.8 billion pounds of milk covered by additional risk management tools that could be impacted by changes to CME dairy markets.

We recognize that this hearing process has been publicly communicated and it could be suggested that there is enough warning for futures market participants to be aware that a change is likely coming. Until

a final decision from these hearings is issued, however, the ultimate valuation of these products, Class III and IV in particular, remains uncertain. The spread relationship that provides the hedging community further opportunities to transfer risk is also uncertain. This uncertainty could potentially deter participation in CME dairy futures and options markets. In the meantime, as concerns around this uncertainty grow, liquidity in dairy markets may suffer.

CME Group supports the industry's initiative to evaluate changes to modernize the pricing policy for dairy in the U.S. While we do not take a stance on the various proposals submitted, we would advocate that the USDA consider futures and options markets and the long-term viability of risk management tools for the industry when establishing implementation plans. Considering an implementation date that would not impact contract months with significant open interest once a final decision is issued could alleviate many concerns around the future viability of risk management tools for the U.S. dairy industry.