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Federal Milk Marketing Orders: An Overview

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SUMMARY

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Joel L. Greene
Analyst in Agricultural Policy

Federal Milk Marketing Orders: An Overview

Federal Milk Marketing Orders (FMMOs) are geographically defined fluid-milk demand areas. Under FMMO law and regulations, the U.S. Department of Agriculture (USDA) establishes a minimum milk price, and milk handlers, those who buy milk from producers, are required to pay at least the minimum price. Handlers are responsible for reporting milk receipts by end use to FMMO milk market administrators and maintaining adequate records so that administrators may audit and verify the accuracy of the reported uses.

The two main features of the FMMO system are classified pricing and pooling of milk. The FMMO system recognizes four different classes of milk: Class I (fluid use), Class II (soft products such as ice cream), Class III (cheese), and Class IV (butter and milk powder). Milk handlers report all milk receipts by end use, and the FMMO values this "pool" of milk receipts through formulas to compute milk class and component values. Milk handlers pay producers at least the weighted-average price of all class uses—known as a "uniform" price or "blend" price.

The main objectives of FMMOs are to (1) promote orderly marketing conditions in fluid milk markets, (2) improve the income situation of dairy farmers, (3) supervise the terms of trade in milk markets in such a manner as to achieve more equality of bargaining between milk producers and milk processors, and (4) assure consumers of adequate supplies of good quality milk at reasonable prices.

FMMOs are permanently authorized in the Agricultural Marketing Agreement Act of 1937, as amended, and not subject to reauthorization. FMMOs are established and amended through a formal public-hearing process that allows interested parties to present evidence regarding marketing and economic conditions in support of, or in opposition to, instituting or amending an order. Most FMMO changes are made administratively by USDA through the rulemaking process, which must then be approved by milk producers in a referendum. Congress may address issues related to the FMMO system through legislation.

The most recent major national revision to FMMOs occurred as part of the 1996 farm bill (P.L. 104-127). It reduced the number of orders from 31 to 11 and made changes to classified pricing, order provisions, terminology, and classification of milk by end use. The 1996 farm bill provisions went into effect on January 1, 2000. FMMOs continue to operate under those reforms, although there have been some changes in the operations of orders brought about through FMMO hearings and rulemaking since then. A significant change to the FMMO system occurred when California milk producers approved a referendum to join the system in October 2018.

U.S. dairy markets were severely disrupted by the Coronavirus Disease 2019 (COVID-19) in March 2020, when schools closed and food service demand for dairy products dropped as restaurants closed for in-person service. FMMO milk pricing turned volatile as strong increases in wholesale cheese demand, due to USDA COVID-19 food support programs, lifted Class III prices above Class I prices, leading to large deductions to uniform prices for milk producers in June 2020 through May 2021. Moreover, changes implemented through the 2018 farm bill (P.L. 115-334) to the Class I skim milk price formula resulted in lower revenue for FMMO milk producers.

Milk industry stakeholders have called for a review of milk orders, particularly how Class I milk is priced. Proposed legislation would require USDA to hold an FMMO hearing to review pricing and other FMMO matters. Among other dairy issues, forward contracting for Class II, III, and IV milk was reauthorized in the 2018 farm bill, but restrictions on forward contracting of Class I milk remain. As concerns organic milk, the Organic Trade Association holds that FMMOs disadvantage organic milk producers because they are required to pay into FMMOs but do not receive benefits from the system.

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Background

The Federal Milk Marketing Order (FMMO) system was established in the 1930s to aid farmers facing low milk prices. As transportation and refrigeration developed in the late 1800s and early 1900s, milk dealers (called "handlers" in the FMMO system) became the main agents moving producers' milk into larger consumption areas. No standard pricing systems existed at this time. Instead, milk dealers controlled the price producers received. Given the high perishability of milk, local dealers were perceived as having asymmetric market power over producers that resulted in unfair buying practices. Producer cooperatives formed in attempts to develop different pricing methods to enhance producer incomes. In the midst of the Great Depression of the 1930s, the federal government established marketing orders that set minimum prices that producers receive for their milk. Thus, FMMOs were intended to level the playing field by returning some market power to milk producers.[1]

Milk's Unique Market Conditions

Federal milk marketing policy is based on the premise that milk producers offer a commodity that is subject to certain unique market conditions:

- Fluid milk is highly perishable—it must be kept cool or refrigerated almost immediately after production. This creates logistical hurdles throughout the marketing chain.
- Milk production has no distinct planting and harvest season as compared with field crops—that is, milk production occurs continuously on a daily basis. Most farms have limited on-farm milk storage capacity, and new milk production must move to markets on a regular basis whether prices are high or low. This puts milk producers in a weak bargaining position vis-à-vis milk buyers.
- Milk production and demand exhibit seasonality patterns that further complicate the marketing process: Milk production tends to increase in the spring and early summer when pastures are lush and the weather is mild, but it tends to decline in the late summer, fall, and winter months. In contrast, milk demand tends to peak in the fall and winter months during the school year and decline in the spring and summer.
- Fluid milk has a more inelastic demand than most other dairy products—that is, fresh milk consumption is not very sensitive to price changes. However, lower prices do affect the economic viability of the dairy farm.
- Milk that is produced in excess of fluid needs is processed into manufactured products with a longer shelf-life, such as butter, cheese, powdered milk, yogurt, and ice cream.
- The dairy industry is a high fixed-cost industry: A dairy farm has substantial investments in infrastructure, equipment, and dairy cattle. For example, it takes nearly two years from the time a calf is born until it is mature enough to join the

[1] For further information on milk pricing, see Eric M. Erba and Andrew M. Novakovic, "The Evolution of Milk Pricing and Government Intervention in Dairy Markets," Cornell University Program on Dairy Markets and Policy, February 1995; and Alden C. Manchester, *The Public Role in the Dairy Economy: Why and How Governments Intervene in the Milk Business* (Boulder, CO: Westview Press, 1983).

milking herd and start to generate revenue. During that time it must be housed, fed, and cared for (including veterinary services).

These factors place milk producers in a difficult market position that has the potential to lead to instability in the supply and price of milk. Wide fluctuations in the price of milk have been considered an undesirable characteristic of the milk market. Persistent price volatility can cause fluctuations in supply and prices that lead to market instability that can drive producers out of the market. It can also potentially compromise the market's ability to provide consumers a dependable supply of quality milk.

FMMOs are designed to stabilize market conditions. FMMOs require milk handlers to pay milk producers uniform prices for milk and adhere to other specified rules. They are designed to assure milk producers of fair treatment in the marketplace while assuring consumers of a consistent and adequate supply of dairy products.

FMMO Authority

FMMOs are permanently authorized and are therefore not subject to periodic reauthorization. The FMMO system has its origins in the 1930s with the Agricultural Adjustment Act of 1933 (48 Stat. 31), which authorized marketing agreements and licensing for processors. The 1935 amendments (49 Stat. 750) to the 1933 act expanded and made explicit the authority of the U.S. Department of Agriculture (USDA) to establish minimum prices for milk. Current FMMOs, however, are based on the Agricultural Marketing Agreement Act of 1937 (1937 act; 50 Stat. 246), as amended, which reenacted and amended the 1933 legislation.[2]

The most recent major national revision to FMMOs occurred as part of the 1996 farm bill—the Federal Agriculture Improvement and Reform Act (FAIR Act; P.L. 104-127)—which included a provision (Section 143) requiring that USDA "consolidate and reform" the FMMO system. The law mandated that USDA reduce the number of milk marketing orders from 31 to no fewer than 10 and no more than 14 by April 4, 1999.[3] USDA published a proposed rule on January 30, 1998, to solicit public comment on proposals for consolidation of the order system, including changes to classified pricing; replacement of the benchmark Basic Formula Price; and changes in order provisions, terminology, and classification of milk by end use.[4] The final rule was published on December 17, 1999, and went into effect on January 1, 2000.[5]

Individual FMMOs are established and amended through a formal public hearing process that allows interested parties to present evidence regarding marketing and economic conditions in support of, or in opposition to, instituting or amending an order. This process is described in **Appendix B**. FMMOs are overseen as part of the Dairy Program, administered by the USDA's Agricultural Marketing Service (AMS).[6]

[2] Orders, including milk marketing orders, are codified in 7 U.S.C. Section 608c.

[3] Richard Stillman, "Federal Milk Marketing Orders: Consolidation and Reform," USDA, March 1998, pp. 20-23.

[4] 63 *Federal Register* 4802, January 30, 1998.

[5] 64 *Federal Register* 70868, December 17, 1999.

[6] USDA, Agricultural Marketing Service (AMS), "Dairy Program," https://www.ams.usda.gov/about-ams/programs-offices/dairy-program.

Objectives of FMMOs

According to testimony USDA provided to the House Committee on Agriculture in 1979, the objectives of FMMOs are as follows:[7]

- promote orderly marketing conditions in fluid milk markets,
- improve the income situation of dairy farmers,
- supervise the terms of trade in milk markets in such a manner as to achieve more equality of bargaining between producers and milk processors, and
- assure consumers of adequate supplies of good quality milk at reasonable prices.

An additional benefit from FMMOs is that marketing order administrators collect comprehensive statistics on milk and milk markets. USDA and other dairy economists use these statistics to evaluate the effectiveness and equity of milk marketing orders.

USDA achieves the objectives of FMMOs through classified pricing, pooling, and minimum producer prices. Minimum prices are formula-based and determined, in part, by the values of milk components (i.e., butterfat, protein, and other solids) that rise and fall with changing market conditions.

Federal and State Orders

There are both federal and state milk marketing orders. The FMMO system regulates milk marketing across state lines but within explicitly defined and geographically aligned multistate regions. In 1962, the number of FMMOs peaked at 83. Pursuant to consolidation and reform measures enacted in 1996, 11 FMMOs were established in January 2000. However, the Western Order terminated effective April 1, 2004.[8] California dairy producers voted to establish a FMMO in 2018, returning the number of milk marketing orders to 11 (**Figure 1**). With the addition of California, more than 80% of the U.S. milk supply is under the FMMO system.[9] For a description of the California process, see **Appendix C**.

Seven states have their own separate state-regulated milk marketing orders, or classified milk pricing programs.[10] In some of the states, such as Pennsylvania and New York, price regulation of milk is covered in part by a federal order and partly by a state order. In others states (such as Montana and Maine), price regulation of milk is covered by state orders. In parts of some states, milk has no price regulation. State orders usually regulate milk prices that producers receive for fluid milk. Some states also regulate wholesale and/or retail milk prices. In states regulated by both federal and state orders, states may also consider marketing conditions unique to the state and set marketing requirements or pricing premiums beyond those required by a federal order.[11]

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[7] U.S. Congress, House Committee on Agriculture, Subcommittee on Dairy and Poultry, *Milk Marketing Orders*, 96th Cong., 1st sess., July 17, 1979, p. 29.

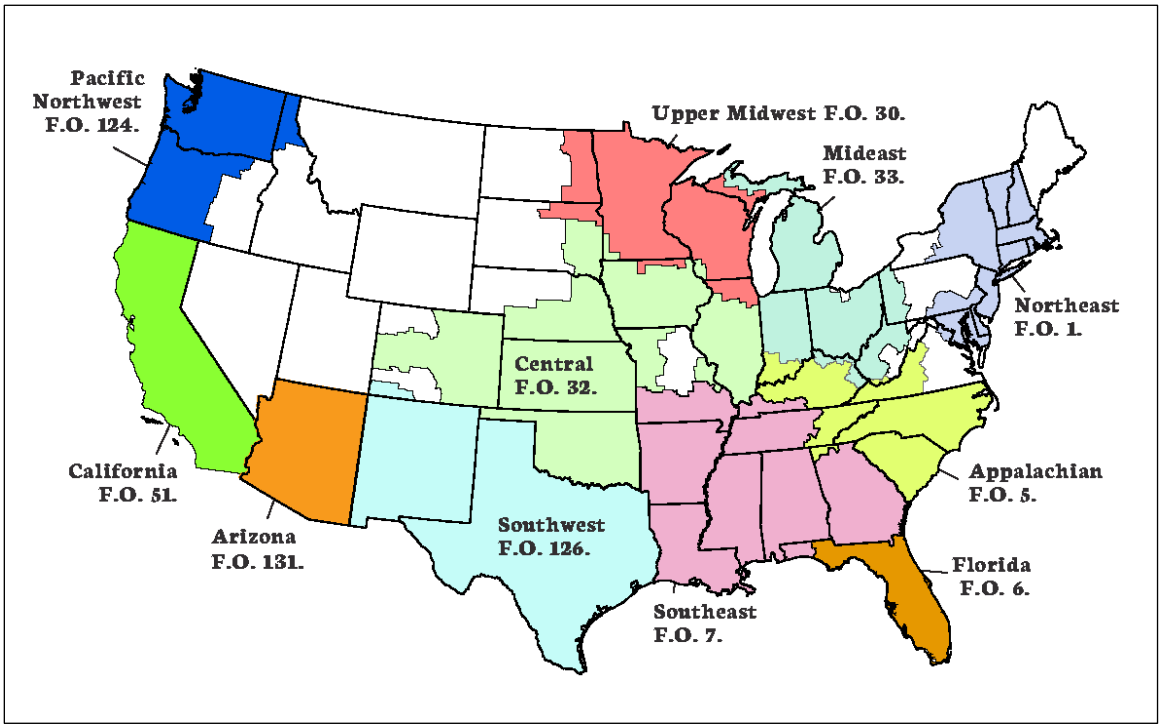
[8] The Western Order consisted of Utah, parts of southern Idaho, eastern Oregon, eastern Nevada, and the southwest corner of Wyoming. The final rule for termination is at 69 *Federal Register* 8327 (February 24, 2004).

[9] USDA, "USDA Announces Producer Approval of California Federal Milk Marketing Order," press release, June 7, 2018, https://www.usda.gov/media/press-releases/2018/06/07/usda-announces-producer-approval-california-federal-milk-marketing.

[10] USDA, AMS, *States with Classified Pricing Programs*, accessed May 26, 2022, https://www.ams.usda.gov/rules-regulations/moa/dairy/classified-milk-pricing. The states are Maine, Montana, Nevada, New York, North Dakota, Pennsylvania, and Virginia.

[11] Craig Alexander et al, "State Milk Marketing Order Regulation and Interstate Dairy Compacts," *Dairy Markets and Policy—Issues and Options*, Cornell University, October 1998.

Figure 1. Federal Milk Marketing Orders



Source: USDA, Agricultural Marketing Service (AMS). Map is available at https://www.ams.usda.gov/sites/default/files/media/Federal%20Milk%20Marketing%20Orders%20Map.pdf.

Note: F.O. = Federal Order. Blank areas of the map are regulated by state orders or are unregulated. Alaska and Hawaii are not in federal orders.

Handlers and Usage

FMMOs regulate milk processors, known as handlers. Handlers purchase milk from dairy producers and/or producer cooperatives for fluid-milk bottling plants or dairy-product manufacturing plants. There are three types of handlers:[12]

1. Distributing plants that receive, process, and distribute fluid milk.
2. Supply plants that manufacture dairy products, play a role in balancing milk surplus in a marketing area, and supply milk to fluid plants if needed.
3. Dairy cooperatives that process fluid milk or manufacture dairy products. Unlike other handlers, cooperatives may pay their producer members in whatever manner the cooperative determines. They are not required to pay the FMMO minimum prices, but milk from cooperatives is classified and pooled like milk from other handlers.[13]

Handlers qualify for either full or partial regulation. If a plant has sales into a marketing area and meets certain criteria, such as volume thresholds, or the plant is not operated by a government agency or university, its milk sales are fully or partially regulated.[14] Typically, a plant is fully

[12] Ed Jesse and Bob Cropp, *Basic Milk Pricing Concepts for Dairy Farmers*, Bulletin #A3379, Cooperative Extension, University of Wisconsin, January 2004, pp. 8-9.

[13] Handlers and milk plants are defined in 9 C.F.R. Sections 1000.4, 1000.5, 1000.6, 1000.8, and 1000.9.

[14] Milk Regulatory Equity Act of 2005 (P.L. 109-215). See 7 C.F.R. Section 1000.8 for exempt plant information.

regulated in the marketing area where it distributes most of its milk. A partially regulated plant has sales into a marketing area but does not meet certain criteria. For example, a producer-handler that produces milk, processes it, and markets it may be exempt from obligations to the marketing order pool.

Milk Production

Total U.S. milk production was 226.3 billion pounds in 2021, of which more than 99% was marketed to milk plants, to milk dealers, or directly to consumers.[15] In 2021, there were 29,858 dairy herds in the United States that were licensed by state or other regulatory agencies to sell milk.[16] In 2021, 23,292 milk producers pooled milk with 223 handlers under the FMMO system. Milk producers pooled 61% of milk through the FMMOs, or 136.8 billion pounds of total 2021 milk production total.[17] Of the volume pooled, 30.8% was utilized for fluid milk products.

Regulatory Scope

Milk handlers (excluding cooperatives) are required to pay no less than the minimum prices established by USDA using the classified pricing system (see "How Milk from Producers Is Priced") for Grade A milk[18] purchased from milk producers within the FMMO. Milk handlers, however, are free to purchase milk from any producer and to sell their processed milk at any price in any market. Handlers report receipts and end use of milk and maintain adequate records for the USDA market administrator to audit and verify the accuracy of the reported uses (see "USDA Administration").[19] Each handler operating in the FMMO is treated similarly so that none gain advantage based on a cheaper milk supply.

The FMMO system does not regulate milk producers or restrict milk production. FMMOs do not guarantee milk producers a market for their milk, set a fixed price, or set a maximum price. A federal order also does not establish sanitary or quality standards.

For milk handlers, the FMMO does not regulate from whom to buy milk, to whom to sell milk, how much milk to buy or sell, or at what price to sell milk.

[15] USDA, National Agricultural Statistics Service (NASS), *Milk Production, Disposition, and Income: 2021 Summary*, April 2022, pp. 10-11, https://downloads.usda.library.cornell.edu/usda-esmis/files/4b29b5974/8049hb01v/xw42pd66f/mlkpdi22.pdf.

[16] USDA, NASS, *Milk Production*, February 23, 2022, p. 18, https://downloads.usda.library.cornell.edu/usda-esmis/files/h989r321c/8w32s9705/ft849v83z/mkpr0522.pdf. Data on licensed dairies are compiled from state and other regulatory agencies that issue licenses to sell milk.

[17] USDA, AMS, *Measures of Growth in Federal Milk Orders*, MGFMO-2021, May 18, 2022, https://www.ams.usda.gov/sites/default/files/media/DairyMeasuresofGrowth19472021.pdf.

[18] In the United States, there are two grades of milk, A and B. Grade A, also called "fluid grade," is the highest quality milk based on various health and sanitary requirements. The Food and Drug Administration's "Grade A" Pasteurized Milk Ordinance contains the standards for Grade A milk. All retail sales of fluid milk are required to be Grade A, and most dairy products are manufactured with Grade A milk. Grade B milk, 1% of total U.S. production, is produced under conditions that make it acceptable for certain manufactured products, such as cheeses, where it undergoes further processing.

[19] See AMS, Dairy Programs, "Milk Marketing Order Statistics," https://www.ams.usda.gov/resources/marketing-order-statistics.

How Milk from Producers Is Priced

Milk marketing orders require FMMO-regulated milk handlers to pay milk producers minimum prices for Grade A fluid milk. Orders primarily use two milk pricing mechanisms—classified end-use pricing and milk pooling—to determine the minimum price of the milk that handlers pay to producers. In turn, all milk producers within an order receive the same *uniform* price—also called the *blend* price—which represents a weighted share of all end uses of milk.[20]

Under the classified pricing system, the minimum price milk handlers must pay for milk components is calculated by formula based on end use. Handlers pay milk producers based on the pounds of milk marketed. The current system of pricing, with several additional adjustments, was implemented in January 2000 following the 1996 farm bill FMMO reform.

Class Prices

USDA classifies milk into four classes based on the end use of the milk:

1. **Class I:** fluid milk used for whole, lowfat, and skim milk, flavored milk, eggnog, and buttermilk;
2. **Class II:** milk used for soft products such as cottage cheese, yogurt, cream, and ice cream;
3. **Class III:** milk used for hard cheeses and cream cheese; and
4. **Class IV:** milk used for butter and dry products, primarily nonfat dry milk.

Class I fluid milk usually receives the highest minimum price under the federal order system. This helps to encourage the movement of milk from milk-surplus areas into milk-deficit areas and ensure sufficient supply of fluid milk to meet peak demand. Some dairy analysts believe that fluid milk would still typically carry a premium in the absence of marketing orders, reflecting transportation and other costs.[21]

By pricing surplus milk (i.e., milk in excess of fluid needs) at a lower price than fluid milk, classified pricing prevents such supplies from depressing the price of milk to dairy farmers to the point where the supply may become endangered. The minimum prices aim to protect milk producers from price reductions that might occur during episodes of milk surplus. This price protection can help stabilize milk producers despite weekly or daily variability in production.

Computing Class Prices

USDA determines a minimum price for each milk class based on the values of milk components such as butterfat, protein, nonfat solids, and other solids.[22] These values rise and fall with changing market conditions. Formulas for these component values incorporate *wholesale prices* of manufactured dairy products, *yield factors* of milk components, and *make allowances*, or processing costs. Each class price is the sum of its skim milk and butterfat components. Skim milk prices are reported on a per hundredweight basis (cwt, or 100 pounds) and butterfat on a per

[20] FMMO price reports often refer to this price as the "statistical uniform" price.

[21] USDA, Economic Research Service, *Economic Effects of U.S. Dairy Policy and Alternative Approaches to Milk Pricing*, July 2004, http://www.usda.gov/documents/NewsReleases/dairyreport1.pdf.

[22] Milk is composed of about 87% water, about 4% fat, 3% proteins, other solids such as lactose (5%), and small amounts of minerals, organic acids, enzymes, and vitamins.

pound basis. All classes of milk are priced on a standardized cwt basis that assumes that the milk consists of 96.5% skim milk and 3.5% butterfat.

See **Appendix A** for the formulas USDA uses to compute milk components and class prices.

Class I and Class II

The first step in setting the minimum price that milk handlers are obligated to pay milk producers is the calculation of the *base Class I* price, also known as the Class I mover.[23] Certain component prices used to compute Class I and II milk prices are announced by AMS in advance of a specific pricing month. AMS announces Class III and Class IV skim milk pricing factors and a butterfat pricing factor that are used to compute the base Class I price. First, AMS computes the base Class I skim milk price using the *average of* the advanced Class III skim milk pricing factor and the Class IV skim milk pricing factor, plus $0.74. The base Class I price is then computed by adding the Class I skim milk price, adjusted for yield (96.5%) to the advanced butterfat pricing factor, adjusted for yield (3.5%).[24] The advanced pricing factors are computed using the same wholesale prices used to compute Class III and Class IV prices (see below) using a two-week wholesale product weighted average.

Section 1403 of the 2018 farm bill (P.L. 115-334) amended the formula for calculating the Class I skim milk price from the *higher of* the advanced Class III and Class IV skim milk pricing factors to the *average of* the advanced Class III and Class IV skim milk pricing factors, plus $0.74. Dairy producers and processors agreed that the formula change would help manage price risk during the period between advanced price announcements and final prices announced at the end of the month. (See Advanced Class I Pricing in **Appendix D**.) The change went into effect in February 2019. However, this change resulted in lower FMMO milk prices when the COVID-19 pandemic disrupted dairy markets in spring 2020. (See "PPDs and COVID-19," below.)

A Class I differential is then added to the advanced Class I skim and advanced butterfat pricing factors to determine the final Class I price in each FMMO.[25] The intention of the Class I differential is to provide a premium to move milk into the high consumption areas of an order. Historically, a major component of the Class I differential for each FMMO has been the cost of transporting fluid milk from a surplus to a deficit region, or the location differential. Class I differentials may vary between orders and within an order. For example, in the Upper Midwest order, the highest Class I differential is $1.80 per cwt in the marketing area near Chicago, and the lowest Class I differential is $1.60 per cwt in northwestern Minnesota and northeastern North Dakota. Nationally, the southern marketing area in the Florida order has the largest Class I differential at $6.00 per cwt.

Class II milk is priced using the announced advanced Class IV skim milk pricing factor. To this is added an additional $0.70 per cwt to encourage milk movement into Class II production. The Class II price is computed using the full-month butterfat price.

[23] USDA, AMS, *Price Formulas*, Calculating Class I Price, October 2019, https://www.ams.usda.gov/sites/default/files/media/ClassIworksheetfinal.pdf.

[24] (Class I skim milk price x 0.965) + (Advanced butterfat pricing factor x 3.5) = Base Class I price. The base Class I skim milk price is on a $/cwt basis and the advanced butterfat pricing factor on a $/pound basis. The yields are adjusted for milk per cwt and milk per pound.

[25] Class I differentials are established in 7 C.F.R. §1000.52. An additional Class I price adjustment is added in the Appalachian (7 C.F.R. §1005.51), Florida (7 C.F.R. §1006.51, and Southeast (7 C.F.R. §1007.51) marketing orders.

The advanced prices and advanced pricing factors are announced no later than the 23rd of the month prior to the specific pricing month (see "Milk Pricing Timeline").

Class III and Class IV

Class III and Class IV milk prices are determined by market wholesale prices of four dairy products: (1) Grade AA butter, (2) 40-pound blocks and 500-pound barrels of cheddar cheese, (3) nonfat dry milk (NDM), and (4) dry whey. USDA surveys dairy product wholesalers each week to determine the volume sold and the average price received for these manufactured dairy products.[26] AMS reports monthly prices from the weighted average of either four or five weeks of surveyed sales. AMS publishes a schedule of release dates that states which weeks of wholesale prices are included in each month's weighted average.[27]

Using these wholesale prices, AMS computes component prices by deducting a fixed "make allowance" from the wholesale product prices and applying a fixed yield factor to the wholesale price. The make allowance is a national estimate of the cost of manufacturing specific products. The yield factor is an estimate of how much product is produced from a certain quantity of component. The make allowances and yield factors apply to all FMMOs.

At the end of the month, AMS announces the Class III and Class IV prices computed from the component values. All FMMOs use the same Class III and Class IV prices in computing uniform prices paid by handlers to milk producers.

Milk Pricing Timeline

Determining the monthly price that producers receive for their milk is a multistep process spread over three months. It includes the months before and after the month being priced. For illustration, a brief description of the payment timeline for the price month of April 2022 follows:

- In March 23, 2022, AMS announced advanced prices and pricing factors for Class I and II milk. The announcement included the base Class I price. A Class I differential that varies by location is added to the base Class I price. The announcement also included the Class II skim milk price. Advanced prices and pricing factors are to be released no later than the 23rd of the month before the specific price month.
- AMS announced Class II, Class III, and Class IV prices and component prices on May 4, 2022. This announcement is to be released no later than the fifth of the month following the price month.
- Each FMMO pooled its milk receipts and end-use data for April to compute the uniform price, the minimum price that each handler must pay milk producers.
- Next, each USDA FMMO milk market administrator releases the uniform price for the order. The release dates for the uniform price are set in regulation and vary by FMMO but are generally "on or before" the 11th, 13th, or 14th of the

[26] USDA, AMS, *National Dairy Products Sales Report*, weekly, https://usda.library.cornell.edu/concern/publications/zs25x847n?locale=en. The reported prices are for products that have been priced and shipped. Many criteria determine what products are included or excluded from the price surveys. For example, prices based on forward contracts or other long-term contracts—that is, sales for which the selling price was set (and not adjusted) 30 or more days before the transaction was completed—are not included.

[27] See AMS for the 2021 and 2022 schedule, "Release Dates Federal Milk Order Price Data," issued October 23, 2019, https://www.ams.usda.gov/sites/default/files/media/2021_2022PriceAnnouncementReleaseDates.pdf.

following month. For April 2022, uniform prices were released between May 9 and May 12, 2022.

- FMMO regulations require handlers to pay milk producers a partial payment during the specific price month and a final payment after uniform prices are computed. For April 2022 milk deliveries, milk producers received partial payments in about the third week of April and the final payment about three to four weeks later in May.

Milk Pooling

The second key feature of milk pricing in the FMMOs is the "pooling" of milk. Milk handlers are obligated to report milk receipts and milk end use by class to the FMMO market administrator. The total value of pooled milk receipts, as computed through classified price formulas, is the marketing order's *producer-settlement fund*. Each month some handlers will pay into the producer-settlement fund, and others will withdraw from the fund (see "Producer-Settlement Fund"). Each market administrator announces the uniform price for the month. Handlers pay milk producers and dairy cooperatives at least a uniform price based on a weighted average of the class prices. However, the computed uniform price paid to milk producers differs across the 11 FMMOs.[28]

Skim Milk and Butterfat Pricing

Four of the marketing orders—Arizona, Appalachian, Florida, and Southeast—pay milk producers based on the skim and butterfat value of milk. In these orders, the values of skim milk and butterfat are computed through the classified formulas. Milk producers are paid based on the pounds of skim milk and butterfat delivered to the marketing pool. For example, in the Southeast Order in April 2022:

- The uniform skim milk price was $18.73 per cwt, and the uniform butterfat price was $3.1594 per pound;
- The uniform price was ($18.73 x 0.965) + ($3.1594 x 3.5) = $29.13 per cwt.[29]

Component Pricing

The other seven orders pay producers based on the value of the components as determined through classified pricing. Under the component system, milk producers are paid a uniform price equal to the Class III price plus a *producer price differential* (PPD). The PPD is an amount roughly equivalent to the sum of the classified value (i.e., Class I, II, III, and IV) of all pooled milk minus the value of cheese components—protein, butterfat, and other solids. This amount is divided by the volume of pooled milk, resulting in a per cwt PPD. The PPD is added to the Class III price to compute the uniform price. For example, in the Central Order in April 2022:

- The Class III price was $24.42 per cwt as reported by AMS. The PPD was calculated at $0.23 cwt;

[28] For a discussion and examples of FMMO pool pricing and the differences in orders, see Leonard Sahling, *Federal Milk Marketing Orders and their Role in Dairy Pricing*, CoBank, Knowledge Exchange, December 2014.

[29] Southeast Milk Marketing Order, "Uniform Prices," May 9, 2022, https://www.fmmatlanta.com/PriceAnnouncements/UniformPrice/FO7/042022uprice.pdf.

- The uniform price was $24.42 + $0.23 = $24.65 per cwt.[30]

In some months, PPDs may be negative, resulting in a deduction from the Class III price and a lower uniform price to milk producers. This is likely in months when the Class III price exceeds the Class I price. During 2010-2019, the average PPD for all milk orders was negative in 13 of 120 months, and the negative average was -$0.43 per cwt for those months. However, some milk orders experienced more months of negative PPDs and at larger negative values than other orders.[31] See "PPDs and COVID-19" for information on the extraordinarily negative PPDs experienced from mid-2020 through mid-2021 during the COVID-19 pandemic.

Pool Adjustments

Adjustments may factor into the uniform price that producers receive from handlers. One is a somatic cell count (SCC) adjustment, which indicates the likelihood of harmful bacteria in milk. Four orders include adjustments for the SCC in the uniform price.[32] Another is the producer location adjustment to the Class I differential, which is set for the principal pricing points in FMMOs. Handlers in the FMMO adjust the Class I differential based on their location in relationship to the principal pricing point. FMMOs may also make transportation adjustments to the pool for milk that may be shipped between supply and distribution plants when Class I milk is needed.

Producer-Settlement Fund

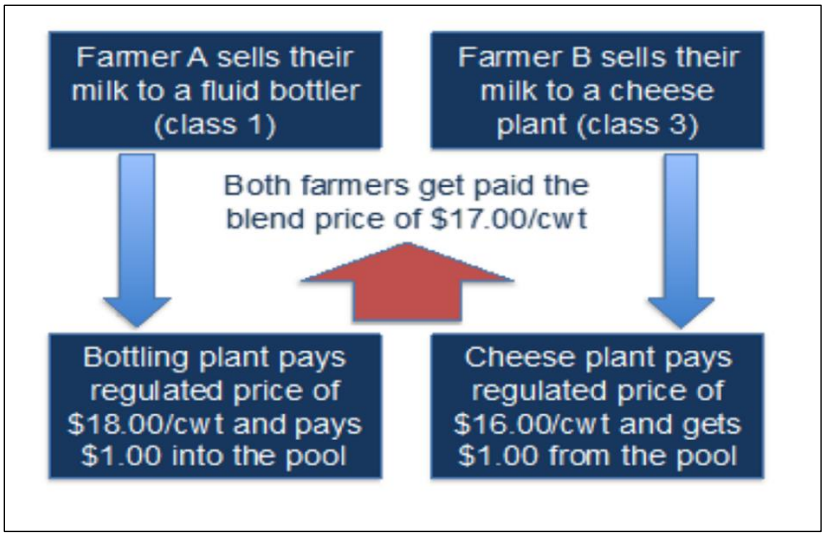
When milk handlers account for milk in the marketing pool and producer-settlement fund, some will pay money into the fund and others will withdraw money. Generally, handlers of Class I milk will pay into the producer-settlement fund, and handlers of lower class milk will withdraw funds when they pay producers the uniform price. **Figure 2** provides a simple example of how this works, with two milk producers supplying milk for fluid and cheese use and the handlers paying at the uniform price level. The handlers pay the uniform—or in the example, blend price—of $17.00 per cwt to each producer, the average of Class I at $18.00 per cwt and Class III at $16.00 per cwt. The Class I handler pays $1.00 in the fund and the Class III handler receives $1.00 from the fund, equalizing the blend price for both handlers.

[30] Central Milk Marketing Order, "Statistical Uniform Price," May 10, 2022, https://www.fmmacentral.com/PDFdata/pp2204.pdf.

[31] USDA, AMS, "Uniform Price," accessed June 7, 2022, https://www.ams.usda.gov/resources/marketing-order-statistics/uniform-price.

[32] Four FMMOs (Central, Mideast, Upper Midwest, and Southwest) provide SCC premiums or discounts in their minimum milk price computation. To qualify as Grade A milk, it must have an SCC under 750,000 per milliliter. Most milk has much lower counts.

Figure 2. Simplified Milk Pooling



Source: American Dairy Products Institute, "Milk Pricing 101," *Intelligence*, vol. 5, no. 6 (2017).

Administration and Amendment of FMMOs

USDA Administration

The 1937 act gives USDA several authorities to achieve the objectives of the FMMO program. The Dairy Program of AMS administers the FMMOs. A USDA milk market administrator leads each FMMO.[33] The federal costs associated with administering a federal order are partly covered by an assessment levied on handlers. Assessment rates are no more than $0.05 per cwt for the sum of various milk receipts specified in the *Code of Federal Regulations*.[34]

USDA milk market administrators' responsibilities include

- operating a laboratory to test milk to verify milk components, including butterfat, protein, and other solids. An accurate assessment of milk components is crucial to the eventual minimum price determinations for each class of milk end use.
- establishing market-wide values that must be paid to producers or their cooperatives (i.e., uniform prices) based on an assessment of milk end uses within the FMMO;
- auditing milk handler records to ensure compliance with order language; and
- assembling and publishing dairy market information.

Establishment and/or Amendment Process for FMMOs

Although USDA is responsible for developing the rules to regulate each FMMO, the dairy industry plays a major role in this process. Any changes to an FMMO's rules must be approved

[33] See AMS, "Milk Market Administrators' web sites," http://www.ams.usda.gov/AMSv1.0/dairy.

[34] 7 C.F.R. 1000.85, "Assessment for order administration."

by milk producers in a referendum or though bloc voting of dairy farmer cooperatives. In addition, Congress can address issues related to the FMMO system through legislation.

AMS establishes and amends individual FMMOs through a formal public hearing process that allows interested parties to present evidence regarding marketing and economic conditions. Dairy producers, or their cooperative associations, usually initiate or amend an order by petitioning the Secretary of Agriculture to regulate the pricing of milk in their region. At least two-thirds of the affected producers must approve the proposed order through a referendum. Once established, an order is a legally binding instrument regulating all handlers or processors who dispose of fluid milk products within the specified marketing area.

When existing milk marketing orders are amended, a similar procedure is followed as if USDA has proposed a new marketing order: (1) USDA conducts a preliminary investigation; (2) USDA holds a public hearing to allow producers, handlers, and consumers to testify; (3) USDA issues a recommended decision; (4) USDA issues a final decision; (5) producers vote in referendum to approve or reject the amendment; and (6) USDA issues a final order. (See **Appendix B** on the amendment process.)

Issues for the FMMO System

Recent disruptions in the dairy industry have resulted in dairy stakeholders raising concerns about how milk is priced under federal orders and whether or not reforms are needed. Large negative producer price differentials (PPDs) in 2020 led to calls for changing Class I price formulas. Proposed legislation would require FMMO hearings to address Class I prices and other FMMO matters. Other FMMO matters could include updating location differentials, make allowances, or yield factors that are included in price formulas.

The American Farm Bureau Federation (AFBF) formed a working group on FMMO reforms and in 2019 released a series for background papers on various aspects of FMMOs.[35] Separately, a proposal from four dairy groups would link Class I and Class III prices and eliminate advanced pricing to possibly eliminate negative PPDs for milk producers.[36] The 2018 farm bill reauthorized dairy forward pricing, but it did not lift restrictions on Class I milk. Organic dairy producers continue to raise concerns about how FMMO pooling applies to organic milk handlers and producers.

Proposed Legislation

The Senate-introduced Dairy Pricing Opportunity Act of 2021 (S. 3292) would require the Secretary of Agriculture to initiate national hearings on FMMOs. The primary purpose behind the proposed legislation is to direct USDA to review the 2018 farm bill change in the Class I skim milk pricing formula from the *higher of* the advanced Class III pricing factor and the advanced Class IV pricing factor to the *average of* the two pricing factors. The bill would also authorize the Secretary to consider other matters related to FMMOs.

The House-introduced Dairy Pricing and Policy Commission Act of 2021 (H.R. 4269) would establish a commission to review and make dairy policy recommendations for (1) periods of high

[35] American Farm Bureau Federation (AFBF), *Federal Milk Marketing Order Reform*, 2019, https://www.fb.org/issues/farm-policy/federal-milk-marketing-order-reform/.

[36] Dairy Business Association, Edge Dairy Farmer Cooperative, Minnesota Milk, and Nebraska State Dairy Association, "Dairy groups propose Class III Plus for better milk pricing," April 21, 2021, https://www.agdaily.com/livestock/dairy-groups-class-iii-plus-better-milk-pricing/.

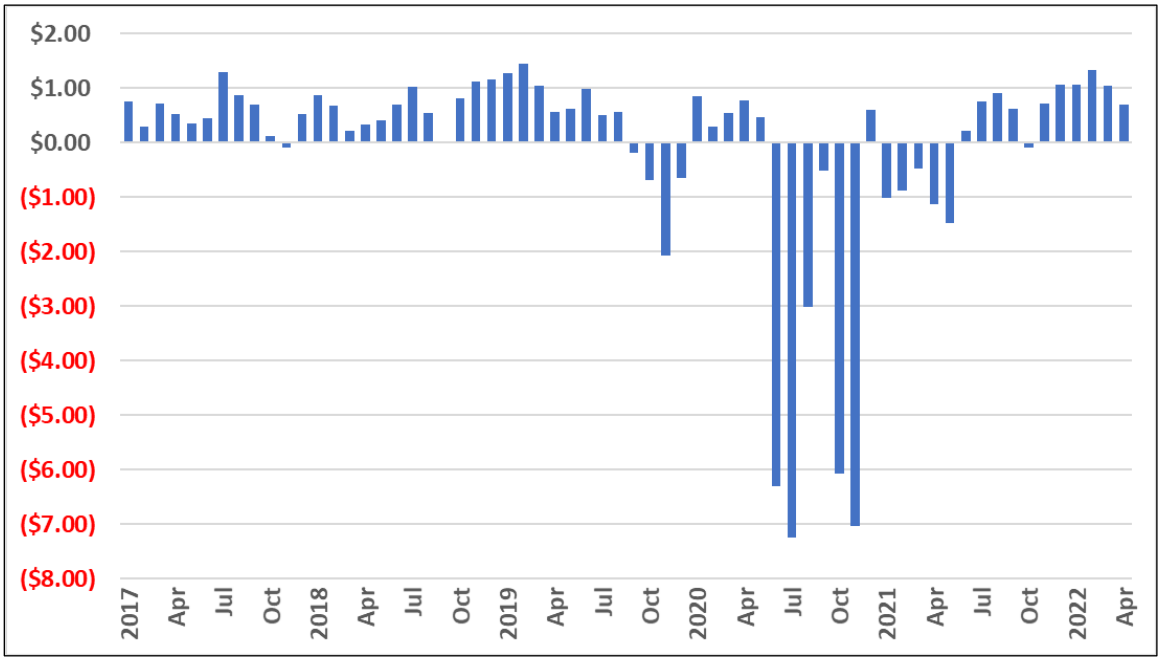
milk production and low milk prices, and (2) improving U.S. competitiveness in world dairy markets. A third provision of the bill would require the commission to provide recommendations to ensure FMMOs are transparent and provide fair returns to all producers of any milk class.

PPDs and COVID-19

U.S. dairy markets were severely disrupted by COVID-19 beginning in March 2020, when schools closed and food service demand for dairy products dropped as restaurants closed for in-person service. The all-milk price paid to milk producers dropped 21% in one month in April 2020, and cheese and butter wholesale prices fell 18% and 28%, respectively, for the same period.[37] In June 2020, milk producers experienced large deductions in FMMO milk checks for milk pooled in FMMOs as PPDs turned largely negative (see **Figure 3**).

Figure 3. Average PPDs for All FMMOs Using Component Pricing, 2017-Present

$ per cwt of milk



Source: USDA, AMS, https://www.ams.usda.gov/resources/marketing-order-statistics/uniform-price.

Notes: Combined Orders (Northeast, Upper Midwest, Central, Mideast, California, Pacific Northwest, and Southwest) weighted by producer pounds. FMMO data for California began in November 2018.

As noted earlier (see "Component Pricing"), PPDs may be negative in certain months, particularly when the Class III price is higher than the Class I price. However, 2020 was unique owing to a combination of (1) strong cheese prices that drove the Class III price higher in June 2020 and through the rest of the year; (2) the Class I skim price formula change in the 2018 farm bill that led to a lower Class 1 price; and (3) the incentive from negative PPDs leading cheesemakers to de-pool, or withdraw milk from the FMMO pooling system.

[37] For surveyed prices received by milk producers, see USDA, NASS, *Agricultural Prices*, May 29, 2020, https://usda.library.cornell.edu/concern/publications/c821gj76b?locale=en#release-items. For reported wholesale dairy product prices, see USDA, AMS, *National Dairy Products Prices—Monthly*, database, accessed June 10, 2022, https://mpr.datamart.ams.usda.gov/menu.do?path=Products\Dairy\All%20Dairy.

First, for the month of June 2020, the AMS two-week surveyed cheese price for calculating the advanced Class III skim milk price factor was nearly $1.19 per pound, as reported in May 2020. However, by the end of June, the final announced cheese price jumped 87% to about $2.22 per pound. Wholesale cheese prices increased in June as USDA's Farmers to Families Food Box program, announced in April 2020 and funded through the Coronavirus Food Assistance Program, resulted in strong demand for cheese for food boxes.[38]

The Class III price for June totaled $21.04 per cwt, compared with $12.14 per cwt in May. The June base Class I mover, without differential adjustments, was about $11.41 per cwt (well below the Class III price), resulting in an average PPD of -$6.31 for June, with PPDs ranging from -$3.81 in the Upper Midwest order to -$7.91 in the California order. With the exception of December 2020, this pattern continued through May 2021. Thus far in 2022, PPDs have been positive in all seven orders.[39]

Secondly, the 2018 farm bill amendment that changed the Class I skim milk price formula to the *average of* the advanced Class III and Class IV skim milk pricing factors, *plus $0.74*, instead of the *higher of* the factors, lowered the base Class I skim price. The Class III and Class IV prices diverged as cheese prices strengthened, and butter prices were steady to marginally higher. Milk producers did not fully benefit from the cheese price gains because rising Class III prices were partially offset by lower Class IV prices. In 2019, the annual average advanced Class III skim milk pricing factor was $0.24 per cwt higher than the advanced Class IV factor. In 2020, this spread expanded to $4.99 per cwt, and averaged $1.28 per cwt in 2021. In 2022, the spread has reversed, with the advanced Class IV skim milk pricing factor averaging $1.76 per cwt higher than Class III. In December 2020, the American Farm Bureau Federation (AFBF) estimated that the negative PPDs from June to November 2020 resulted in a loss of $2.7 billion in pooled revenue for milk producers.[40]

The third reason behind large negative PPDs in 2020 was that strong Class III prices incentivized dairy product handlers, particularly cheesemakers, to withdraw milk from the FMMO pool, or de-pool. As shown in **Figure 2**, cheesemakers/handlers typically would withdraw funds from pool revenue to pay milk producers. But, when Class III prices are higher than Class I, the cheesemaker will likely pay into the revenue pool. Since handlers of Class III milk are not required to be in the pool, they have the option to de-pool. As a result, in June 2020, Class III utilization of producer milk dropped 70% to 1.4 billion pounds in all milk orders from 4.6 billion pounds in May 2020. Class III utilization fell below previous-year levels through May 2021.[41]

Make Allowances

Make allowances in FMMO pricing formulas are manufacturing credits to milk handlers that are funded through deductions from wholesale product prices used in formulas (see **Appendix A**).

[38] USDA, AMS, *USDA Farmers to Families Food Box*, accessed June 9, 2022, https://www.ams.usda.gov/selling-food-to-usda/farmers-to-families-food-box.

[39] USDA, AMS, *Uniform Prices*, spreadsheets, accessed June 9, 2022, https://www.ams.usda.gov/resources/marketing-order-statistics/uniform-price.

[40] John Newton, *More Negative PPDs and De-Pooling Reignite Federal Milk Marketing Order Debate*, American Farm Bureau Federation, Market Intel, December 15, 2020, https://www.fb.org/market-intel/more-negative-ppds-and-de-pooling-reignite-federal-milk-marketing-order-deb.

[41] USDA, AMS, *Utilization of Producer Milk in Class III*, spreadsheets, accessed June 9, 2022, https://www.ams.usda.gov/resources/marketing-order-statistics/class-iii-utilization.

FMMO make allowances are fixed and were last changed in 2007.[42] On February 14, 2022, USDA released the *Cost of Processing Study for Cheese, Whey, Butter and Nonfat Dry Milk Plants*.[43] The study reviewed the costs of production for the cheese, butter, nonfat dry milk, and whey from dairy plants around the United States.

The study surveyed dairy plants that produce dairy products that are reported in the National Dairy Products Sales Report, the source of dairy product wholesale prices for FMMO formulas. The study collected cost data from 10 cheddar cheese plants, 14 butter plants, 29 nonfat dry milk/skim milk powder plants, and 8 dry whey/whey protein concentrate plants. The reported data results included estimates for low-cost plants, high-cost plants, and for all plants (see **Table 1**).

Compared with current make allowances, the all-plant study results indicate that nonfat dry milk costs are about $0.12 per pound higher, cheese about $0.05 per pound higher, and whey nearly $0.07 per pound higher. Only butter costs are lower by about $0.03 per pound than the make allowance.

This 2021 study could be the basis for reviewing and amending make allowances. A similar study was conducted in 2006, and through the hearing process, the current make allowances were set higher than the 2006 study results.[44] If the 2021 study's cost estimates had been in use during 2021, AFBF estimated that an additional $1.45 billion would have been deducted from the revenue pool paid to milk producers.[45]

Table 1. Current Make Allowances and Study Results

$ per pound

	Nonfat Dry Milk	Butter	Cheese	Whey
2006 Study	$0.1410	$0.1108	$0.1638	$0.1941
Current Make Allowance	$0.1678	$0.1715	$0.2003	$0.1991
2021 Study:				
Low Cost	$0.2128	$0.1151	$0.1454	$0.1895
High Cost	$0.4323	$0.2289	$0.3792	$0.3502
All Plants	$0.2933	$0.1411	$0.2476	$0.2650

Source: AMS; and *Cost of Processing Study for Cheese, Whey, Butter and Nonfat Dry Milk Plants*, pp. 11-14.

Note: Volume-weighted average price for all plants in 2006 and 2021 studies.

[42] Make allowance hearings began in 2007. An interim final rule was issued in July 2008, see 73 *Fed. Reg.* 44617 (July 31, 2008). The final rule was issued in April 2013, see 78 *Fed. Reg.* 24334 (April 25, 2013).

[43] Mark Stephenson, Ph.D., *Cost of Processing Study for Cheese, Whey, Butter and Nonfat Dry Milk Plants*, commission by USDA, AMS, December 2021, https://dairymarkets.org/cop/.

[44] Mark Stephenson, Ph.D., *Cost of Processing in Cheese, Whey, Butter and Nonfat Dry Milk Plants*, commissioned by USDA, AMS, September 1, 2006, https://dairymarkets.org/cop/.

[45] Daniel Munch, *Unwrapping USDA's New Dairy Processing Cost Study and How It Could Impact Make Allowances*, American Farm Bureau Federation, Market Intel, March 1, 2022, https://www.fb.org/market-intel/unwrapping-usdas-new-dairy-processing-cost-study-and-how-it-could-impact-ma.

Dairy Forward Contracts

In 1999, Congress authorized the dairy forward contract pilot program to provide dairy producers with a risk management tool used by other agricultural commodity producers.[46] The program allowed producers who were not members of cooperatives to forward contract with proprietary handlers in exemption of FMMO minimum price requirements. (Dairy cooperatives had already been forward contracting and are not required to pay federal order minimum prices to their members.) Milk used for Class II, Class III, and Class IV purposes could be included in the program. Forward contracting on milk used for Class I (fluid milk) was prohibited.

After the pilot program expired in December 2004, Congress established the Dairy Forward Pricing Program (DFPP) in Section 1502 of the 2008 farm bill (P.L. 110-246). The DFPP included most of the language of the pilot program. Alternatively, producers and cooperatives were free to continue to price milk under FMMO minimum payment provisions. The DFPP was authorized through September 30, 2012.

After the 2008 farm bill provision expired in 2012, Congress extended the DFPP through September 30, 2013.[47] Congress then reauthorized the DFPP in Section 1424 of the 2014 farm bill (P.L. 113-79), extending the forward contract program through September 30, 2018, with contracts signed by September 2018 to expire by September 30, 2021. Section 1402(a) of the 2018 farm bill (P.L. 115-334) reauthorized the program through September 30, 2023, with no contracts extending beyond September 30, 2026.[48] Forward contracts continue to be restricted to Class II, III, and IV milk.

In a 2002 report mandated by Congress, USDA concluded that the pilot program was effective in reducing price volatility—the goal of forward contracting. It did not return a higher average payment price for milk.[49] The study found that about 4% of eligible producers participated in the forward contracting pilot, pricing 5.3% of eligible milk under forward contracts. Twenty-two milk handlers offered producers forward contracts, and during the study period, an average of 25 plants received forward contracted milk monthly, ranging from 11 plants in the first month of the study to a high of 35 plants from August 2001 to November 2001.

Participation in the DFPP continued to be low. In 2011, AMS Deputy Administrator Dana Coale stated in written testimony to the House Agriculture Committee, "Participation in the program has been minimal, approximately 300 producers of a possible 10,000 to 15,000. Low participation rates may be attributed to perceived unfavorable price relationships and a limited number of processors offering forward contracts."[50] This would indicate that 2% to 3% of producers who are not members of cooperatives use forward contracts.

In testimony before the House Committee on Agriculture in March 2017, the International Dairy Foods Association (IDFA) stated that Congress should make the DFPP permanent in the next farm bill. Making the DFPP permanent would eliminate the uncertainty that forward contract

[46] Under forward contracts, producers agree to sell commodities for a specified price at a future date. The dairy forward contract pilot program was established in the Consolidated Appropriations Act, 2000 (Appendix H).

[47] American Taxpayer Relief Act of 2012 (P.L. 112-240).

[48] 7 U.S.C. §8772(e).

[49] AMS, "A Study of the Dairy Forward Pricing Pilot Program and Its Effect on Prices Paid Producers for Milk," October 2002, https://www.ams.usda.gov/sites/default/files/media/Dairy%20Forward%20Pricing%20Program%20Full%20Report.pdf.

[50] Dana Coale, Deputy Administrator, AMS, written testimony, House Agriculture Subcommittee on Livestock, Dairy, and Poultry, and Foreign Agriculture, "Agricultural Program Audit," Serial No. 112-20, September 8, 2011, p. 950.

users face as the program's termination approaches at the end of a farm bill. In addition, IDFA said Congress should expand the program to include Class I milk to provide fluid processors with the same risk management tool available to dairy product manufacturers.[51] At the same hearing, the National Milk Producers Federation (NMPF) stated that it supported the extension of DFPP but was noncommittal on extending it to Class I milk because of uncertainty on how this change would impact the price computations of milk.[52] Those who oppose forward contracting for Class I milk might argue that it could undermine FMMO minimum pricing since Class I handlers effectively would not be required to pay the Class I price for milk.

Organic Milk

Handlers of certified organic milk who operate in FMMO marketing areas are obligated to participate in the FMMO pool for fluid products (Class I). According to the Organic Trade Association (OTA), most organic milk is purchased on long-term forward contracts, and about 65% of organic milk is processed into Class I products. Organic milk handlers pay prices well above the FMMO Class I price for fluid milk and for milk going into manufactured organic dairy products. AMS treats certified organic and conventional milk the same for minimum pricing and pooling under the FMMO system. However, conventional milk cannot be sold as organic milk, and OTA argues that the FMMO system disfavors organic milk handlers and producers.

In September 2015, OTA requested a USDA hearing to consider amending how FMMOs treat certified organic milk.[53] Organic milk is pooled in the FMMOs, and organic fluid milk handlers are obligated to pay the FMMO Class I price into the producer-settlement fund. In addition, the FMMO system is supposed to balance fluid supplies with manufacturing milk supplies when necessary. However, an organic fluid bottler would not be able to rely on conventional milk handlers in the FMMO to supply organic milk, because milk handlers cannot substitute conventional milk for organic milk. According to FMMO statistics, organic milk accounted for 6.5% of total fluid milk products across all orders in 2021.[54]

OTA proposed that organic milk handlers receive a producer-settlement fund credit. The proposal was based on 7 C.F.R. 1000.76(b), referred to as the "Wichita Option," which governs milk payments by partially regulated distributing plants—plants that occasionally market fluid milk in the order.[55] Under this section, if partially regulated handlers demonstrate that they pay producers more than the FMMO uniform price, they may be exempt from paying into the producer-settlement fund.

Under the OTA proposal, if organic milk handlers pay producers a price for all milk—regardless of class usage—above the FMMO Class I price, plus a $2.90 per cwt threshold, they would be eligible for a producer-settlement fund credit. This proposed threshold is the premium for organic milk over conventional milk as calculated by the Central Milk Producers Cooperative, a large

[51] Testimony of Michael Dykes, IDFA, House Committee on Agriculture, "The Next Farm Bill: Dairy Policy," March 22, 2017.

[52] Jim Mulhern, NMPF, "The Next Farm Bill: Dairy Policy," March 22, 2017. Archived video of the hearing is at https://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3748.

[53] Letter from Charles M. English Jr., Davis Wright Tremaine LLP, for OTA, to Anne Alonzo, Administrator, AMS, September 29, 2015, https://www.ams.usda.gov/sites/default/files/media/.USDA%20Organic%20Exemption%20Proposal%20Submission%209-29-15%20with%20Attachments.pdf.

[54] AMS, "Estimated Fluid Milk Products Sales Report," EFMS-0322, May 13, 2022.

[55] The Wichita Option originated in the Wichita Milk Order in 1951 from a hearing on a milk cooperative that sold its milk primarily outside the order. 16 *Federal Register* 2519 (March 17, 1951).

marketing agency that supplies milk to various markets. For example, if the FMMO Class I price were $22.00 per cwt and organic handlers paid $26.60 per cwt, the credit would be calculated as ($26.60 - ($22.00 + $2.90)) = $1.70 per cwt credit. If all handlers of Class I milk were obligated to pay $2.00 per cwt into the producer-settlement fund for a certain month, the organic milk handler would be obligated to pay in only $0.30 per cwt ($2.00 - $1.70). If the credit were higher than the monthly Class I handler obligation, organic handlers would not withdraw the difference from the pool.[56]

NMPF and 10 milk cooperatives opposed the OTA proposal in comments submitted to USDA.[57] They argue that it would essentially exempt organic milk from FMMO revenue sharing and that it does not ensure that organic milk producers would receive the money, or a share of the money, that handlers kept by not paying into the producer-settlement fund. Also, opponents believed the proposal could harm conventionally produced milk in the balancing function between fluid and manufactured products. For example, if supplies of organic milk were larger than demand for fluid organic milk, the excess organic milk would likely end up being used as Class I fluid milk, resulting in conventional milk typically used as Class I being pushed into manufacturing classes, lowering uniform prices for all producers.

OTA withdrew its request for a hearing on January 12, 2017.[58] OTA noted that the public record provided no explanation for why no hearing had been scheduled during the 16 months that had lapsed since OTA had requested a hearing. In the withdrawal letter, OTA noted that it could resubmit the proposal in the future.

To date, OTA has not resubmitted a request for a hearing on its proposal to USDA. OTA's Dairy Council noted in its 2021 Annual Report that it has continued to evaluate FMMOs and that the system continues to disadvantage organic milk producers, as they are required to pay into FMMOs but do not receive benefits from them.[59]

[56] This example is from the OTA letter requesting a hearing, p. 5.

[57] Letter from Jim Mulhern, President and CEO of NMPF, to Tom Vilsack, Secretary of Agriculture, October 22, 2015, https://www.ams.usda.gov/sites/default/files/media/NMPF%20Comments%20Opposition%20to%20Modified%20Wichita%20Option.pdf. Comments in opposition to the OTA proposal from 10 dairy cooperatives are available at https://www.ams.usda.gov/rules-regulations/moa/dairy/organic-amendment.

[58] Letter from Charles M. English Jr., Davis Wright Tremaine LLP, for OTA, to Elanor Starmer, Administrator, AMS, January 2017, https://www.ams.usda.gov/sites/default/files/media/OTA%20Withdrawal%20Letter%201-12-17.pdf.

[59] OTA, Dairy Council, *Dairy Council Annual Report 2021*, undated, https://ota.com/sites/default/files/indexed_files/OTA_Annual%20Report_Dairy%20Council_2021.pdf.

Appendix A. USDA Classified Milk Formulas

Below are the FMMO price formulas for each of the four classes of milk. Each class price is the sum of its skim milk and butterfat components derived from wholesale prices for Grade AA butter, 40-pound blocks and 500-pound barrels of cheddar cheese, nonfat dry milk (NDM), and dry whey that USDA reports each month. The component prices (protein, butterfat, other solids, and nonfat solids) are derived from the wholesale products and then used to compute skim milk and butterfat values. All classes of milk are priced on a standardized hundredweight basis (cwt, 100 pounds) that assumes that they are 96.5% skim milk and 3.5% butterfat. Skim milk prices are reported on a per cwt basis and butterfat on a per pound basis. The class formulas are adjusted to reflect the different weight reporting basis—0.965 for cwt and 3.5 for pounds.[60]

Class I (fluid milk) = (Class I skim milk price x 0.965) + (Class I butterfat price x 3.5)

- Class I Skim Milk Price = Average of advanced Class III and IV skim milk pricing factors + $0.74 + applicable Class I differential.
- Class I Butterfat Price = Advanced butterfat pricing factor + (applicable Class I differential divided by 100).

The advanced pricing factors are computed using price formulas for skim and butterfat from the Class III and Class IV formulas below, except they are based on a two-week weighted average. The advanced factors are announced by the 23rd of the month prior to the specific pricing month.

Class II (soft products) = (Class II skim milk price x 0.965) + (Class II butterfat price x 3.5)

- Class II Skim Milk Price = Advanced Class IV skim milk pricing factor + $0.70.
- Class II Butterfat Price = Butterfat price + $0.007.

The advanced class IV skim milk pricing factor is also announced by the 23rd of the month, but the butterfat price for Class II milk is based on the actual monthly butterfat price and not an advanced price. A premium of $0.70 (for cwt) and $0.007 (for pounds) is added to the skim and butterfat price, respectively, to attract milk to Class II use.

Class III (cheese) = (Class III skim milk price x 0.965) + (Butterfat price x 3.5)

- Class III Skim Milk Price = (Protein price x 3.1) + (Other solids price x 5.9).
  - Protein Price = ((Cheese price - $0.2003) x 1.383) + ((((Cheese price - $0.2003) x 1.572) - Butterfat price x 0.9) x 1.17).
  - Other Solids Price = (Dry whey price - $0.1991) times 1.03.
- Butterfat Price = (Butter price - $0.1715) times 1.211.

The formulas include a four- or five-week weighted average of wholesale prices for cheese, dry whey, and butter with a make allowance deduction of $0.2003 for cheese and $0.1991 for dry whey. The yield factors are 1.383 and 1.572 for cheese and 1.03 for dry whey. The butterfat price is the same for Class IV.

Class IV (butter/nonfat dry milk) = (Class IV skim milk price x 0.965) + (Butterfat price x 3.5)

- Class IV Skim Milk Price = Nonfat solids price x 9.
  - Nonfat solids price = (Nonfat dry milk price - $0.1678) x 0.99.

[60] USDA, AMS, *Price Formulas*, October 2019, https://www.ams.usda.gov/resources/price-formulas.

- Butterfat price = (Butter price - $0.1715) times 1.211.

The Class IV price formulas include a four- or five-week weighted average of NDM and butter wholesale prices with a make allowance deduction of $0.1678 for NDM and $0.1715 for butter. The yield factors are 0.99 for NDM, 1.211 for butter, and 9 for the pounds of nonfat solids in 100 pounds of milk.

Appendix B. The Amendment Process for Federal Orders

Amending an existing milk marketing order follows procedures similar to what would be followed to create a new marketing order. The process can be summarized in six steps:[61]

1. Prehearing procedures including preliminary investigation by USDA. Although any producer or handler can petition USDA for a change in the federal order system, such a request usually emanates from dairy producers or their cooperative associations. USDA then investigates their proposals and determines whether a hearing is necessary. The amendment process requires that a formal notice of a hearing be published in the *Federal Register*, giving the time and place of the hearing and the proposals to be considered.

2. Public hearing. The principal participants at the hearing are representatives of producers, handlers, and consumers, who appear as witnesses and present evidence on how a proposed change in an order would affect their interests. The hearing is presided over by a USDA administrative law judge, who handles procedural questions and decides on the order of witnesses. Except for official documents, the public hearing record is the sole source of information for appraising the issues. At the close of a hearing, the judge presiding over the case sets a time period within which witnesses may file written briefs.

3. Recommended decision issued by USDA. After the hearing, the record is turned over to the AMS Dairy Program for study and preparation of a recommendation on the issues. The preparation time varies depending on the complexity of the issues. A proposed decision is made public by the Administrator of AMS. Interested persons appraise the potential effects of the proposed amended order and file written comments on the amended order.

4. Final decision issued by USDA. The Dairy Program is required to reexamine the findings and conclusions in light of the exceptions received and then provide a draft final decision to the Secretary of Agriculture for review, approval, and publication. The provisions of the order contained in the decision are USDA's final proposed regulations and are the provisions presented to producers for their approval.

5. Producer approval. Before USDA can issue an amended order, the affected producers and cooperatives must approve it by referendum. Approval is contingent on a favorable vote either by two-thirds of the eligible producers or by producers who supply two-thirds of the milk sold in the marketing area.

A dairy cooperative may bloc vote its membership on all questions involving new or amended orders. When this occurs, all producers within the cooperative are considered to have voted as the cooperative voted.

6. **Final order.** In the event of a favorable vote, USDA will publish the final order in the *Federal Register*. An important feature of the approval process is that producers are required to vote on the order as amended, not just the amendment to the order. This requirement is not explicit in the statute. Instead, it represents a long-standing USDA approach in carrying out the federal milk marketing order program. Although the amendment process usually allows for conflicting views to be resolved in advance of the final vote, some producers may conceivably have to choose between an order with which they are dissatisfied and no order at all.

[61] See AMS, "Federal Milk Marketing Order Program: Understanding the Milk Order Amendment Process," https://www.ams.usda.gov/sites/default/files/media/DairyMarketingOrderAmendmentBrochure.pdf.

Appendix C. Establishing the California FMMO

In February 2015, dairy producers in California petitioned USDA to hold a hearing to promulgate a federal milk marketing order for their state.[62] The petitioners stated that the way the California Department of Food and Agriculture (CDFA) was administering the state order had caused disorderly marketing within California and that the FMMO system would provide more income to California milk producers.

In the 1996 farm bill, Congress authorized a California FMMO if state producers petitioned and approved such an order.[63] The provision also allowed California to maintain the state order milk quota. The 2014 farm bill amended the provision on California orders in the 1996 farm bill to require regular rulemaking rather than the expedited process that was used for consolidation of federal orders in the 1996 farm bill.[64]

The California state order and FMMOs differ in several ways. As examples, California has five classes of milk, computes classified milk pricing differently than FMMO pricing, and has a milk quota system for Class I milk.[65]

The petitioning California dairy producers stated that the California order had failed to establish minimum prices in the California market that reflect national values. Specifically, California's Class 4b (equivalent to the FMMO Class III for cheese) formula undervalues whey in such a way that from August 2012 until February 2015, the minimum producer price was $1.96 per cwt lower than the FMMO Class III price.[66] The petitioners asserted that this difference in pricing benefited cheese processors in California at the expense of milk producers. The dairy producers argued that the California classified pricing had cost dairy farmers $1.5 billion from 2010 through 2014.[67]

The California milk producers stipulated in their petition that if California were to enter the FMMO system, the state quota system should be preserved. The quota system provides an additional payment from the state pool to quota holders. California originally established the milk quota in 1969 to pay producers of higher-valued fluid milk to join the state pooling system. Analysts estimate that the milk quota was valued at about $1.2 billion in 2015.[68]

USDA held public hearings on the California order from September 22 to November 8, 2015.[69] Subsequently, USDA published a proposed rule, or "recommended decision," in the *Federal*

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[62] Letter from Marvin Beshore, attorney for California Dairies, Dairy Farmers of America, and Land O'Lakes, to Anne Alonzo, Administrator, AMS, February 3, 2015, https://www.ams.usda.gov/sites/default/files/media/020315CADairyMOAProposal.pdf.

[63] P.L. 104-127, §143(a)(2).

[64] P.L. 113-79, §1410(d).

[65] For a brief description of California and FMMO differences, see John Geuss, "California vs. FMMO Milk Pricing," *Progressive Dairyman*, March 11, 2016, https://www.progressivedairy.com/news/industry-news/california-vs-fmmo-milk-pricing.

[66] See letter from Melvin Beshore, p. 6. The difference has varied over time, but since 2000, the Class III price has been at a premium to California Class 4b.

[67] Ibid., p. 2.

[68] Lon Hatamiya, "The Economic Importance of the California Dairy Quota Program," prepared for California Dairies, Dairy Farmers of America, and Land O'Lakes, October 2015, p. 14, https://www.ams.usda.gov/sites/default/files/media/Exhibit%2054%20-%20Testimony%20of%20Lon%20Hatamiya.pdf.

[69] Hearing documents are available at https://www.ams.usda.gov/rules-regulations/moa/dairy/hearings/regional-ca-2015.

Register on February 14, 2017, and included a 90-day comment period for the California FMMO.[70]

The recommended decision would allow California to maintain its quota system separately from the FMMO. Payments for the quota milk would be paid through authorized FMMO deductions, but CDFA would manage the quota. The California Order would adopt the four classes of milk of the FMMO system along with the FMMO make allowances and yield factors.

After evaluating the public comments, USDA announced on March 30, 2018, the final decision to establish a statewide California milk marketing order.[71] The producer referendum was conducted April 2-May 5, 2018, requiring a positive vote by either two-thirds of milk producers or by producers that represented two-thirds of milk production.

USDA announced on June 7, 2018, that California dairy producers approved the marketing order,[72] and it released the final rule on June 8, 2018.[73] USDA did not announce the vote tally, but the three largest dairy cooperatives in California—California Dairies, Inc., Dairy Farmers of America, and Land O'Lakes, Inc.—announced their support for the marketing order in May 2018. Each cooperative voted in bloc, meaning the single cooperative vote represented all members of the cooperative.[74] According to the California Milk Producers Council, the three cooperatives represent more the 75% of milk producers in the state, which would have resulted in a large positive approval margin for the referendum.[75]

The final rule went into effect on October 17, 2018, when advanced prices and pricing factors for Class I and II milk for November 2018 were released by USDA. California producer milk was priced under the FMMO system for the first time in November 2018.

[70] 82 *Federal Register* 10634 (February 14, 2017).

[71] USDA, "USDA Issues Final Decision on California Federal Milk Marketing Order," press release, March 30, 2018, https://www.usda.gov/media/press-releases/2018/03/30/usda-issues-final-decision-california-federal-milk-marketing-order. The proposed rule on the final decision is at 83 *Federal Register* 14110 (April 2, 2018).

[72] USDA, "USDA Announces Producer Approval of California Federal Milk Marketing Order," press release, June 7, 2018, https://www.usda.gov/media/press-releases/2018/06/07/usda-announces-producer-approval-california-federal-milk-marketing.

[73] 83 *Federal Register* 26547 (June 8, 2018).

[74] Three California Dairy Cooperatives, "California Dairies, Inc., Dairy Farmers of America and Land O'Lakes, Inc. Announce Unified Support of the California Federal Milk Marketing Order," press release, May 7, 2018, https://www.californiadairies.com/news/california-dairies-inc-dairy-farmers-america-and-land-olakes-inc-announce-unified-support.

[75] Geoff Vanden Heuvel, Milk Producers Council, weekly newsletter, May 4, 2018, p. 4, https://www.milkproducerscouncil.org/_files/ugd/730f13_e8520ed6d8d546ff8352b3ad531e00aa.pdf.

Appendix D. Advanced Class I Pricing

Some Class I milk processors engage in cross-hedging using the Class III and Class IV Chicago Mercantile Exchange (CME) futures contracts to reduce the risk of price swings that may occur in fluid milk.[76] Some analysts believe that FMMO advanced Class I pricing and the Class I formula of the "higher of" the Class III or Class IV skim milk pricing factors compromise the ability of processors to manage price risk in fluid milk (see "Class I and Class II"). The analysts believe that the advanced pricing factors contribute to large basis (cash price minus futures price) risk in using Class III or Class IV futures to hedge against risks for Class I milk.[77] The view is that the utility of a cross-hedge is compromised because the Class I price is set about six weeks in advance of the CME settlement of the Class III and Class IV contracts. During this six-week gap, there could be significant shifts in the cheese or butter/powder markets that alter Class III and Class IV settlement prices. This would undermine the effectiveness of this risk management technique. Also, the Class I mover or "higher of" Class III or Class IV provision results in a risk that Class I prices will not align well with either the Class III or Class IV futures contracts.

To address this situation, NMPF and IDFA proposed in 2017 that Congress change the way USDA calculates the Class I advanced price. Instead of using the higher of the Class III or Class IV advanced pricing factors, the proposal called for using the average of the advanced Class III and Class IV pricing factors, plus an additional $0.74 per cwt. According to analysis by the American Farm Bureau Federation, this change in the formula would have significantly reduced the basis risk (cash price minus futures price) on the CME contracts to about $0.02 per cwt, compared with an average of $0.47 per cwt on Class III and an average of $0.90 per cwt on Class IV during the 2001-2017 period.[78]

Supporters of this proposed change argue that it would create opportunity for fluid milk processors and large food companies seeking to hedge their costs of milk to more effectively manage price risk. Those that oppose the proposal may be concerned that this change would come through a legislative process instead of through the FMMO hearing process wherein producers and processors could express concerns about the proposal. Producers could also be concerned about the effect the proposed formula change could have on the Class I milk price.

Section 1403 of the 2018 farm bill (P.L. 115-334) amended the formula for calculating the Class I skim milk price from the *higher of* the advanced Class III and Class IV skim milk pricing factors to the *average of* the advanced Class III and Class IV skim milk pricing factors, plus $0.74.

[76] There is no fluid milk futures contract on the CME. When there is no futures contract for a cash commodity, cross-hedging is a risk management tool that uses a related futures contract that follows similar price trends as the cash market.

[77] John Newton and Cameron Thraen, "Road Block to Risk Management: How Federal Milk Pricing Provisions Complicate Class I Cross-Hedging Incentives," Proceedings of the NCCC-133 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, April 2012.

[78] John Newton, "Proposed Changes to Fluid Milk Pricing," American Farm Bureau Federation, September 28, 2017, https://www.fb.org/market-intel/proposed-changes-to-fluid-milk-pricing.

Author Information

Joel L. Greene
Analyst in Agricultural Policy

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