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Understanding Federal Milk Marketing Orders and Current Dairy Risk Management Tools

June 16, 2021, Noon EDT

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Wednesday, June 16, 2021

12:00 – 1:00 (EST)

11:00 – 12:00 (CST)

Thanks to Our Partners

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Agenda:

- The United States Department of Agriculture's (USDA) Agricultural Marketing Service (AMS) administers **eleven Federal Milk Market Orders (FMMOs)** which are authorized by statutes dating back to 1933 and which directly prescribe payment for approximately 75% of the total U.S. milk supply. Yet **nothing in agricultural law is perceived as more impenetrable to comprehension.**
- This webinar will **unpack the arcane terminology and process** surrounding the administration of current FMMOs. It will explain in simple terms how the value of all milk 'pooled' in a FMMO's designated marketing area, regardless of the products into which it is made ('utilization'), is shared by its producers via the establishment of a uniform blended price. In addition, the **common criticisms** of present FMMO administration will be highlighted and explored.
- Lastly, while FMMOs address price disparity based upon utilization of milk, the availability of risk management tools for dairy against market volatility have only been available in recent years and have changed rapidly almost yearly. This webinar will also outline the three **current dairy risk management products**: Livestock Gross Margin for Dairy (LGM-Dairy), Dairy Margin Coverage (DMC), and Dairy Revenue Protection (Dairy-RP).



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FURTHER IN-DEPTH MATERIALS ON 2021 FMMO ISSUES



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Current Resources of Interest

Making Sense of Your Milk Price in the Pandemic Economy:

Negative PPDs, Depooling, and Reblending

By Mark Stephenson and Andrew Novakovic

June 26, 2020



Information Letter Series



Current Resources of Interest

- **Federal Milk Marketing Order Education and Reform Impacts** - Webinar by Dr. Marin Bozic (April 13 , 2021).
 - The link above Includes video of the webinar and the powerpoint, as well access to two documents prepared by Dr. Bozic.
 - Negative Producer Price Differentials in Federal Milk Marketing Orders: Explanations, Implications and Policy Options - examines the causes of negative PPDs and policy options which could change the outcomes
 - Analysis of Producer Price Differentials for March 2021 looks at the negative PPDs in seven Federal Orders for the month of March 2021 - looks at the negative PPDs in seven Federal Orders for the month of March 2021.



HISTORICAL CONTEXT WHICH SETS THE STAGE



AFBF Market Intel (February 26, 2021)

AFBF published [USDA Report: U.S. Dairy Farm Numbers Continue to Decline](#)

- It analyzed [USDA NASS' February 2021 Milk Production Report](#) providing year-end data for 2020.
- **Year-over-year decline in the number of dairy operations continues** a long trend of farmers deciding to exit the dairy business. Since 2003, the U.S. has lost more than half of its licensed dairy operations, now just shy of 32,000 dairy operations.
- USDA's Milk Production report showed that annual milk production in the United States in 2020 was 223 billion pounds, **increasing just over 2%** from the 218 billion pounds produced in 2019.
- While the **total milk cow inventory at the end of 2020 was the highest since 1995**, herd **expansion is likely to stop this year** and the cow inventory could potentially decline. In addition to a higher cow inventory at the end of 2020, the January cattle inventory report showed a **decline in heifers being retained** for milk cow replacement. The replacement heifer as a percentage total milk cows rate sits at 48.8%, the lowest level since 2009.
- Milk produced per cow in the U.S. averaged 23,777 pounds for 2020, 382 pounds above 2019's 23,395, marking a strong year-over-year gain. Unlike the fluctuating overall number of cows, **milk production per cow has steadily increased** approximately 11.5% from 2011. In 2021, USDA predicts that daily output per cow will increase nearly 1.7%, which would be the **highest rate of growth since 2014**.

Figure 1. Milk Cow Increase in 2020, Uncertainty in 2021

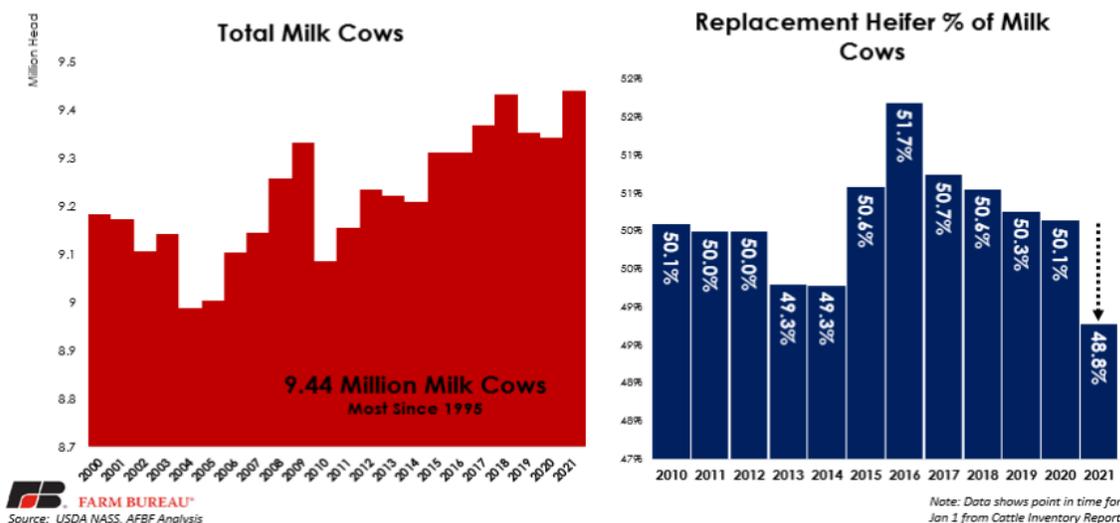


Figure 2. U.S. Milk Production by State

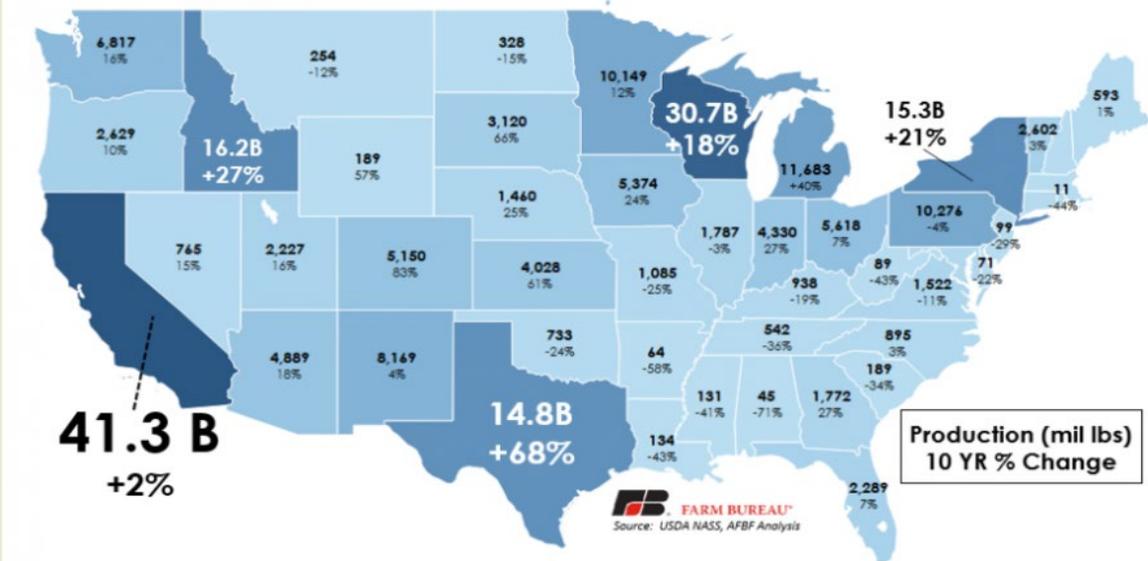


Figure 3. Declining Number of Licensed Dairy Herds

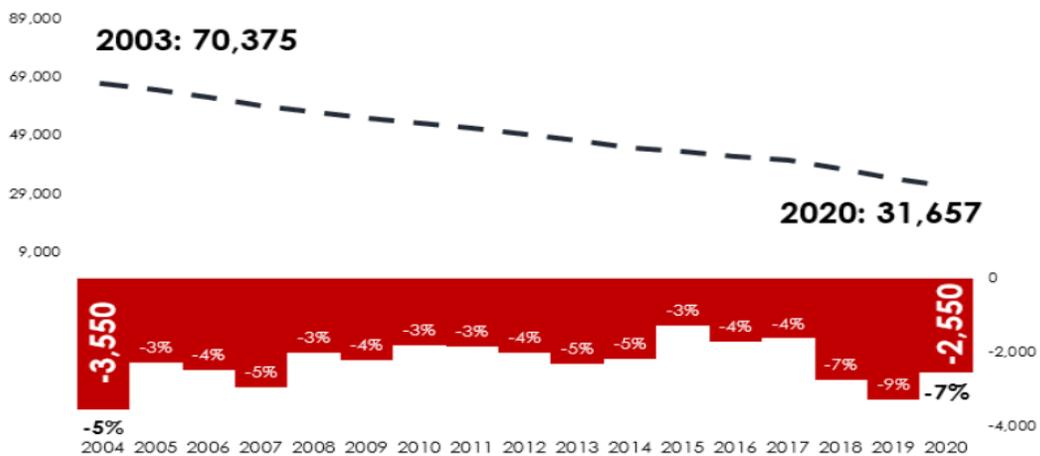
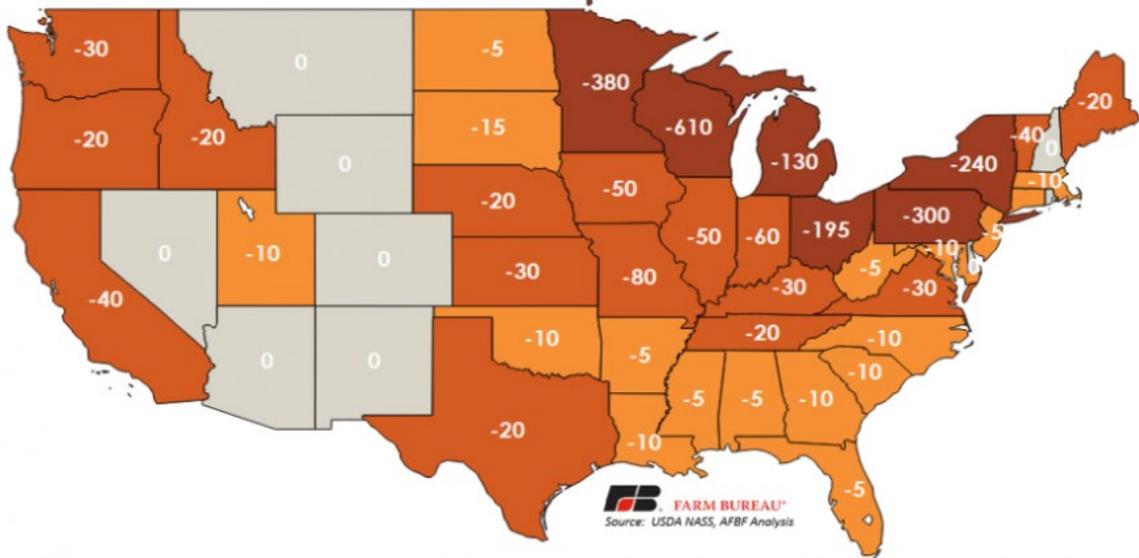


Figure 4. 2020 YOY Change In Licensed Dairy Operations By State

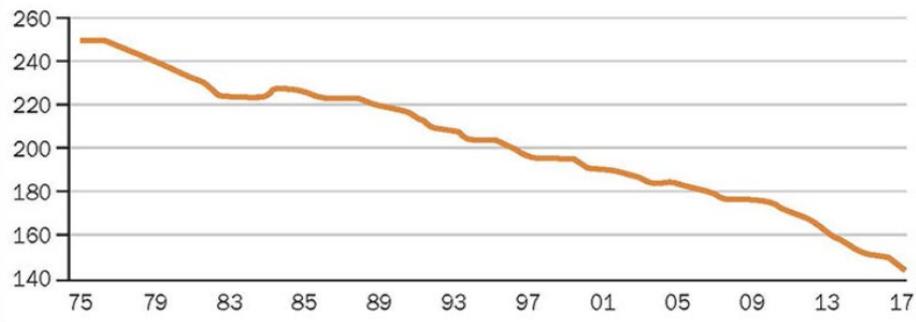


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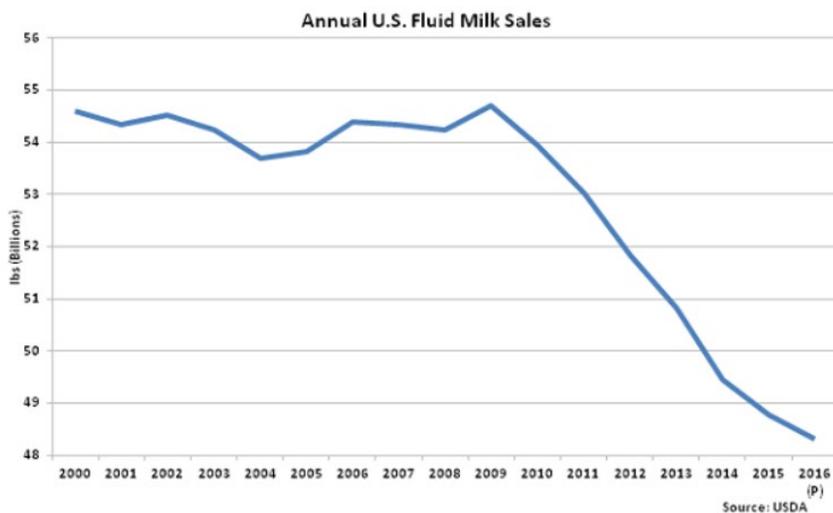
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Decades Long Decline in Fluid Milk Consumption & Sales

Figure 1. Fluid milk consumption (pounds per capita)



Source: Hoard's Dairyman

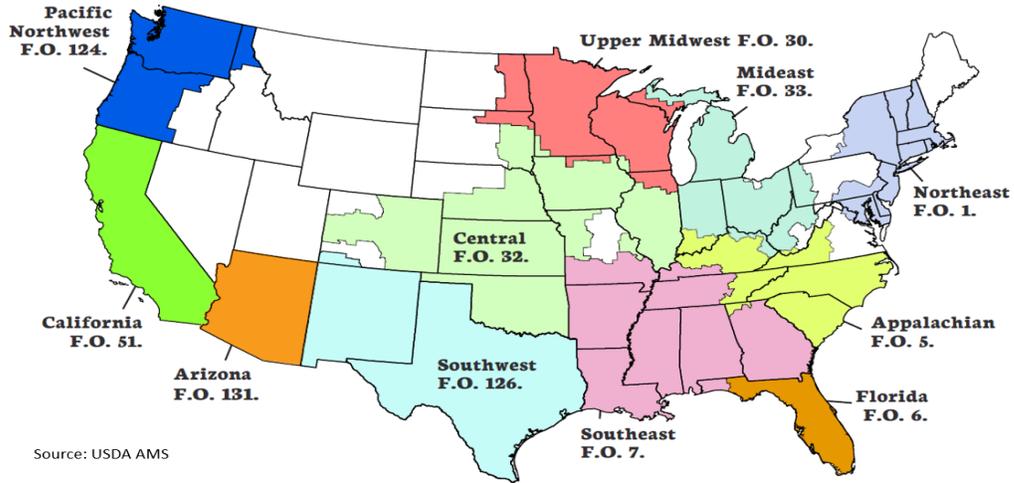


HOW FMMO PRICING WORKS

- **[Agricultural Marketing Agreement Act](#)** - 7 U.S. Code § 608c
- **[Federal Milk Marketing Orders: An Overview](#)**, CRS Report 12/13/17
- USDA AMS Home: <https://www.ams.usda.gov/rules-regulations/moa/dairy>
- USDA AMS FMMO Statistics: <https://www.ams.usda.gov/resources/marketing-order-statistics>
- Milk Market Administrator Web Sites: <https://www.ams.usda.gov/rules-regulations/moa/dairy/mmadmin>



Figure 1. Federal Milk Marketing Orders



Classes of Milk

| CLASS I | CLASS II | CLASS III | CLASS IV |
|--|---|---|--|
| Milk used for beverage purposes | Milk used for "soft" mfg. products and aseptic fluid prod. | Milk used for "hard" cheeses | Milk used for butter and dry milk products |
| (e.g., whole and reduced fat milk, skim milk, flavored milk, eggnog, fluid buttermilk) | (e.g., cream, ice cream, cottage cheese, yogurt, sour cream, dips, cream cheese products, aerosol and whipping cream) | (e.g., hard American cheeses, hard Italian cheeses) | (e.g., butter and butter based spread, whole milk powder, nonfat dry milk) |
| Poured | Spooned | Cut with a knife | Spread with a knife Mixed with water or fluid |



Laying a little foundation

- *Advance apology for extreme over-simplification (and occasional near-“misstatement” for the purposes of teachability)*
- *I know first-hand how “eyes can glaze over” on this topic.*

Single objective of all FMMOs:

**Spread the benefit of
Class I fluid milk sales revenues
across the most producers possible**



HOW?

- Create a market-wide mandatory “pool” of Class I revenues (and optional “eligible” Class II, III, IV revenues) and try to divide it up equally to all producers who contributed.
- Establish a monthly system of: Setting “advance” minimum pay prices for each class; Let the market’s monthly pooled sales to processors proceed; Establish final class prices according to the formulas in the marketing order; “true up” each processor’s obligations to the pool based upon the volume of purchases utilized for each class.
- Establish the uniform pay price to all producers who generated the milk included in the market pool.



**Figure 4. FMMO Pricing Regulations:
Component and Skim-Fat Orders**

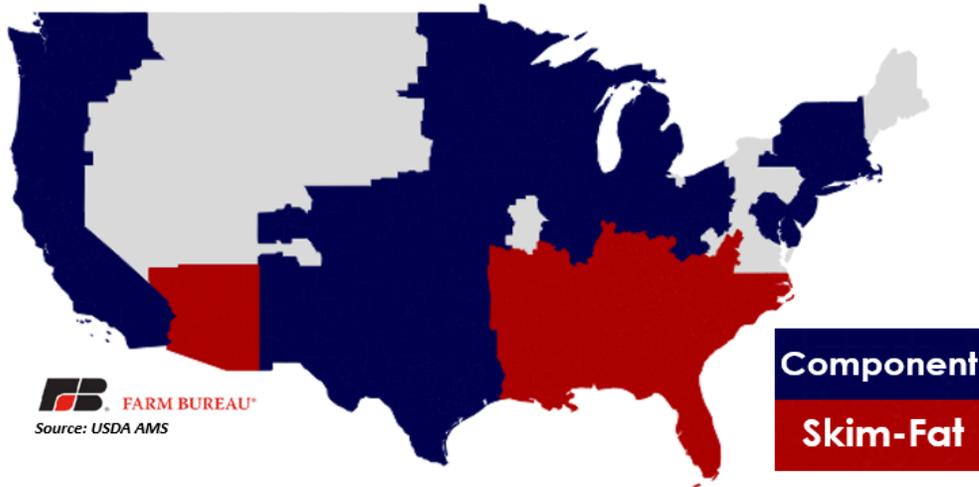
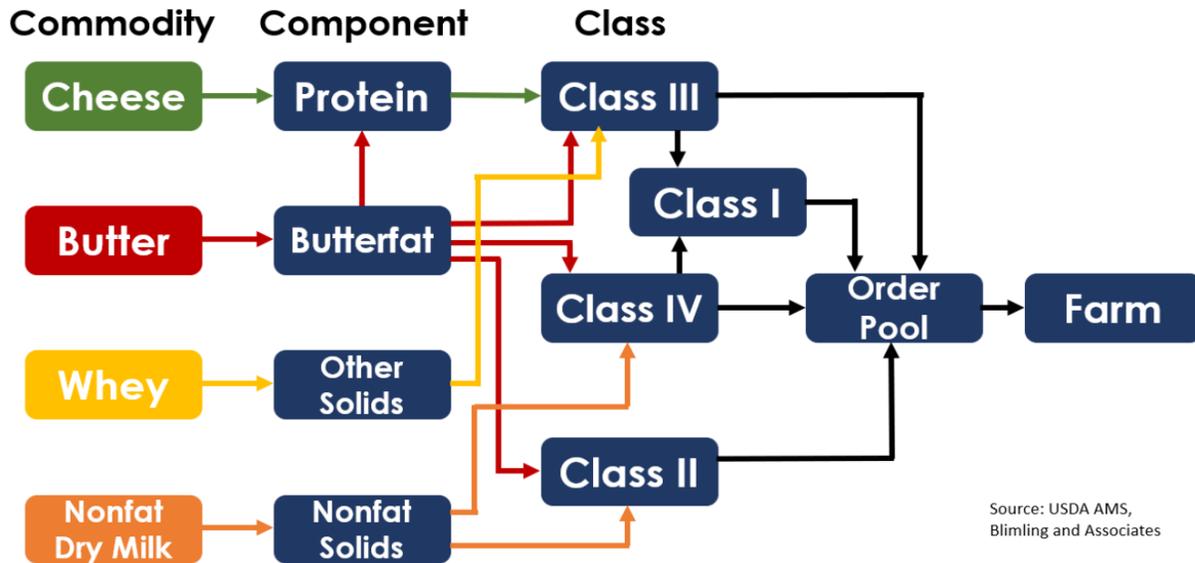


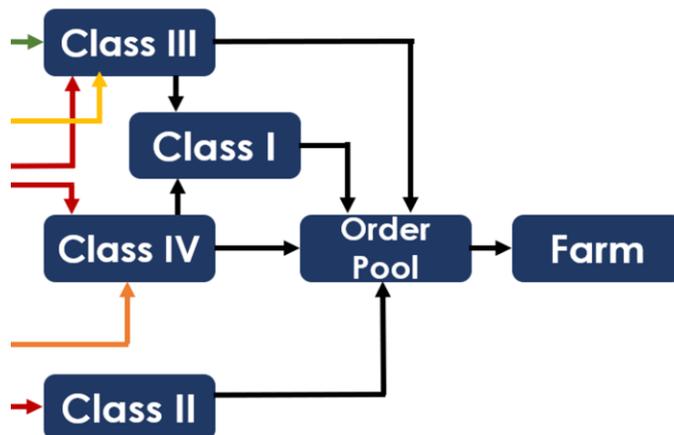
Figure 2. Commodity Value Flows in Pricing





ESTABLISHING THE POOL PRICE

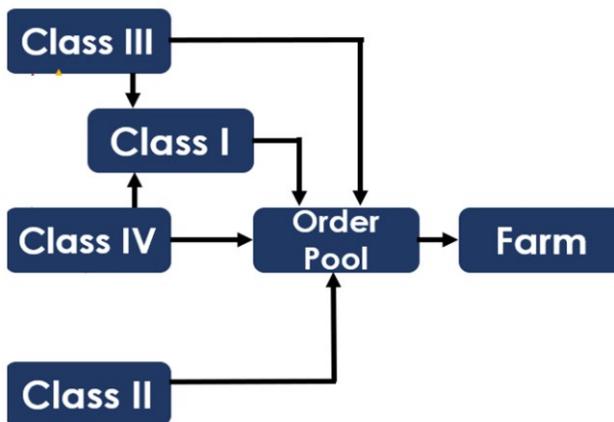
- Final monthly price to all producers whose milk is included in the pool is not set until after market activity for the month is concluded.
- However, a projected “Advance Price” for each class is announced 6 weeks before the month commences for planning purposes. Sometimes it is higher than the final which market activity dictated, sometimes it is lower.
- This produces the need for each processor to “true up” its contributions to the aggregate pool revenues once the month concludes in order to meet the “payroll” that was paid by processors depending upon their class usage.



- FMMO component pricing dates back to 2000 “reform.”
- 64 FR 70868 and see USDA AMS’ dedicated [webpage](#) for adopted Orders.

Understanding this →

is enough to say you know more than 99% of the population. But there is one more thing . . .





“Depooling” Class II, III and IV Milk

- Only Class I milk must be mandatorily included in the market pool. That is a recurrent provision in all FMMOs because historically the entire system was just focused upon capturing the Class I “gravy” to spread around. There was lots of “gravy.”
- Historically, it was a benefit to a processor to pool other classes of milk because they could pay more and attract a steady supply of necessary milk for other products.
- So, the result is Classes II, III & IV can be “depoiled” unilaterally by a processor and removed from the pool. This is done in order to avoid federal paying minimums on that milk.
- This creates problems with consistently funding the pool as intended and of course reduces producer revenues overall.

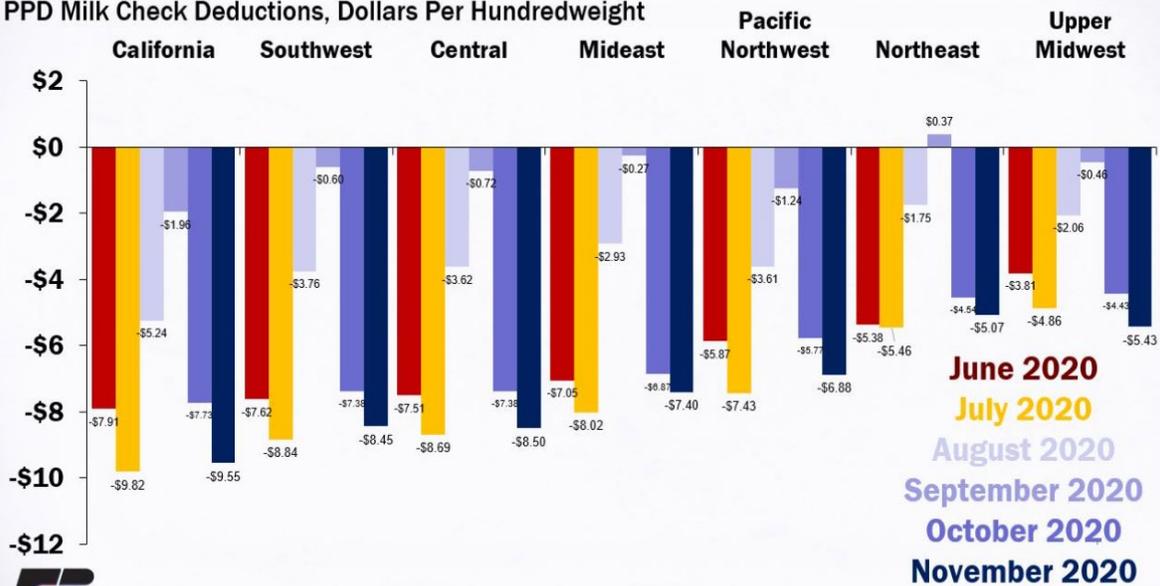


Pandemic-induced distortion of system

- Attention intensifies perception that the “system is broken.”
- Class III price was been abnormally high, skewing the Class I final price downward due to a 2019 change in the way Class I price is calculated. (see below).
- Also, due to high Class III price, milk destined for Class III is being de-pooled.
- Class I sales maintain chronic downward trend. The general trend is that there is not enough revenue in the market pool generally to operate the FMMO system as intended.
- May 2019 – a change was made in the calculation of the Class I price to one component called the “*Producer Price Differential*” (PPD). This was done pursuant to a 2018 Farm Bill amendment – not by a FMMO admin proceeding with hearings, evidence, etc.

June Through November Producer Price Differentials

PPD Milk Check Deductions, Dollars Per Hundredweight



AMERICAN FARM BUREAU FEDERATION*

Source: USDA AMS



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Latest Development - Producer Price Differential's "Class I Mover"

- The current sore spot in Class I Price Determination

DAIRY FARMERS TO SEEK EMERGENCY USDA HEARING ON CLASS I MOVER REFORM

April 23, 2021

The National Milk Producers Federation's Board of Directors voted today to request an emergency USDA hearing on a Federal Milk Marketing Order proposal to restore fairness for farmers in the Class I fluid milk price mover. . . The current mover was adopted in the 2018 farm bill and intended to be revenue neutral while facilitating increased price risk management by fluid milk bottlers. But the new Class I mover contributed to disorderly marketing conditions last year during the height of the pandemic and cost dairy farmers over \$725 million in lost income.





From National Milk Producers Federation (cont.):

“While the current Class I mover was designed to improve the ability of fluid milk handlers to hedge milk prices using the futures market, it was also expected to be revenue-neutral compared to the formula it replaced. But that has not been the case.

The significant gaps between Class III and IV prices that developed during the pandemic exposed dairy farmers to losses that were not experienced by processors, showing the need for a formula that better accounts for disorderly market conditions.

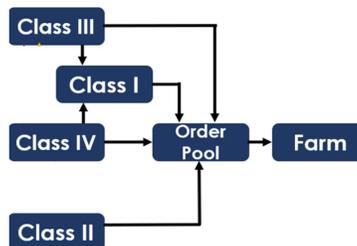
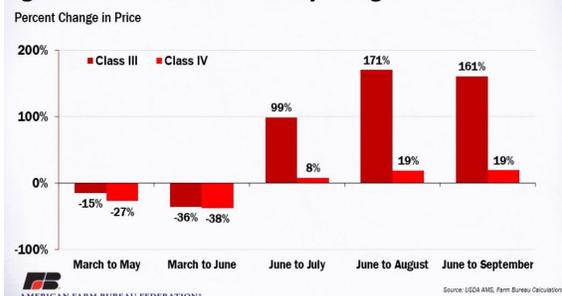
NMPF’s proposal would modify the current Class I mover, which adds \$0.74/cwt to the monthly average of Classes III and IV, by adjusting this amount every two years based on conditions over the prior 24 months, with the current mover remaining the floor. NMPF’s request will be to limit the hearing specifically to proposed changes to the mover, after which USDA would have 30 days to issue an action plan that would determine whether USDA would act on an emergency basis.”



Source : [Impact of the Farm Bill Change to the Class I Milk Price on Dairy Farm Income](#), AFBF Market Intel, 10/5/20.

“For nearly two decades the price for Class I milk, i.e., milk used to produce beverage milk products, was based on the **higher-of** the advanced Class III and Class IV skim milk price. Class III milk is used to produce cheese and Class IV milk is used to produce nonfat dry milk powders. Advanced pricing allows fluid milk processors to know their milk procurement costs up to six weeks in advance and the higher-of element ensured fluid milk prices were always based on the highest-priced manufacturing class of milk.”

Figure 1. Class I Milk Price Volatility During COVID-19





“The 2018 farm bill eliminated the higher-of component of the Class I milk price formula and replaced it with a formula based on the simple average of the Class III and Class IV advanced prices plus 74 cents. The 74 cents was based on the historical difference between the Class III and IV skim prices to make dairy farmers and milk prices indifferent to this change over a long time horizon. However, anytime the spread between Class III and IV is wider than \$1.48 per hundredweight, dairy farmers will end up with a lower Class I milk price than would have been the case under the higher-of. For perspective, from January 2000 to April 2019, the spread between the advanced Class III and Class IV price was larger than \$1.48 nearly 40% of the time.”

Source : [Impact of the Farm Bill Change to the Class I Milk Price on Dairy Farm Income](#), AFBF Market Intel, 10/5/20.



PENDING BEFORE USDA AMS

[Industry Hearing Request](#)

Emergency Hearing Requests for all Federal Milk Marketing Orders

Temporary Average Class I Price Mover due to COVID-19

- [Proponent Cooperatives and Marketing Agencies in Common \(pdf\)](#)
- [Amended Attachment A \(pdf\)](#)
- [USDA Response \(pdf\)](#)

Temporary Class I Price Floor due to COVID-19

- [Central Milk Producers Cooperative \(pdf\)](#)
- [Dairy Cooperative Marketing Association, Inc. \(pdf\)](#)
- [Great Lakes Milk Marketing Agency \(pdf\)](#)
- [Southwest Cooperative Marketing Agency \(pdf\)](#)
- [Upper Midwest Marketing Agency \(pdf\)](#)



Over the years, there have been various other FMMO reform proposals.

Some common reform areas/issues:

- Role of Cooperatives
- Price Determination (& its foundational elements) – PPD problem is part of that.
- Administrative Hearing and Referendum Vote vs. Statutory Amendment of the [Agricultural Marketing Agreement Act](#).
- “All or Nothing:” To be implemented, any amendment must be voted upon by a referendum vote of all affected producers. If the amendment is voted down, the entire FMMO is voted down.



USDA RMA Dairy Risk Management

- 1. [Livestock Gross Margin-Dairy \(LGM-D\)](#)**— Since 2008. Clearly the oldest program, but never really caught on.
- 2. [Dairy Margin Coverage \(DMC\)](#)** — 2018 Farm Bill successor to several previous programs. Most recent was [Margin Protection Program](#)-Dairy authorized in 2014 Farm Bill
 - 23,000 enrollment in 2019; 13,000 enrollment in 2020, according to [USDA](#)
 - 50% enrollment in 2020. (Closed December 2019, pre-COVID-19)
 - 68% enrollment in 2121. (Closed December 2020)
- 3. [Dairy Revenue Protection](#)** — new in 2018 Farm Bill. Developed by American Farm Bureau Federation. Getting away from measuring by a margin over feed.



Livestock Gross Margin-Dairy

- Adapted for dairy from long-standing livestock coverages. (The “market value” of milk determination is viewed as inflexible. Benefit of a feed cost decrease is lost if simultaneous with a milk price decrease.)
- Indemnity for the difference between a gross margin guarantee (calculated based upon futures feed prices for corn and soybean meal) and an imputed gross margin (market value of milk minus feed costs), measured annually.
- Uses the producers feed usage and milk production volume, but not the producers’ actual feed costs nor actual milk sales revenue.
- ***Hedges risks of both feed cost increases and milk price decreases, based primarily upon statistical data.***
- LGM-Dairy is similar to buying both a call option to limit higher feed costs and a put option to set a floor on milk prices.



Dairy Margin Coverage Program

- Indemnity when the difference between a defined national “all-milk” price and an average feed price (the margin) falls below the coverage margin selected. (\$4.00 - \$9.50 /cwt)
- \$100 fee = free catastrophic coverage of \$4/cwt guaranteed margin
- USDA announces monthly if DMC is triggered (i.e. margin fell below \$9.50)
- Coverage selection of 5 – 95% of production history.
- For the 2021 DMC program year, a payment has triggered for April – income over feed cost margin is \$6.94 per hundredweight (cwt). Payments also triggered in January, February and March.
- For the 2020 DMC program year, payments have triggered for March, April, May, September and December.
- For the 2019 DMC program year, payments triggered in January, February, March, April, May, June and July.



Premium for DMC

Approximately \$2000 annual premium per 100 cows to be insured at a guaranteed \$7.50 margin.
(approx. 225 cows = 5 mil lbs)

| Coverage Level | Tier 1 Premium per cwt for covered production history of 5 mil lbs. or less | Tier 2 Premium per cwt, all years for covered production history over 5 mil lbs. |
|----------------|---|--|
| \$4.00 | None | None |
| \$4.50 | \$0.0025 | \$0.0025 |
| \$5.00 | \$0.005 | \$0.005 |
| \$5.50 | \$0.030 | \$0.100 |
| \$6.00 | \$0.050 | \$0.310 |
| \$6.50 | \$0.070 | \$0.650 |
| \$7.00 | \$0.080 | \$1.107 |
| \$7.50 | \$0.090 | \$1.413 |
| \$8.00 | \$0.100 | \$1.813 |
| \$8.50 | \$0.105 | N/A |
| \$9.00 | \$0.110 | N/A |
| \$9.50 | \$0.150 | N/A |

USDA Program Data

| 2020 Dairy Margin Coverage Program Enrollment Report by State - June 1, 2021 - 7:00 AM | | | | | | | | | |
|--|---|---|-----------------------------------|-----------------------------------|---|--|---|--|--|
| State/Territory Name | Licensed Dairy Operations (NASS Data: 2018) | Dairy Operations with Established Production History (2020 DMC) | DMC Dairy Operations Enrolled (#) | DMC Dairy Operations Enrolled (%) | 2019 DMC Enrolled Production History (pounds) | 2020 DMC Established Production History (pounds) | 2020 DMC Production History Enrolled (pounds) | 2020 DMC Production History Enrolled (%) | Estimated DMC Payments for Disbursement * (\$) |
| Totals | 37,468 | 26,897 | 13,502 | 50.20% | 182,220,456,195 | 224,658,151,958 | 122,983,027,359 | 54.74% | \$217,692,006 |

| 2021 Dairy Margin Coverage Program Enrollment Report by State - June 1, 2021 - 7:00 AM | | | | | | | | | |
|--|---|---|-----------------------------------|-----------------------------------|---|--|---|--|--|
| State/Territory Name | Licensed Dairy Operations (NASS Data: 2018) | Dairy Operations with Established Production History (2021 DMC) | DMC Dairy Operations Enrolled (#) | DMC Dairy Operations Enrolled (%) | 2020 DMC Enrolled Production History (pounds) | 2021 DMC Established Production History (pounds) | 2021 DMC Production History Enrolled (pounds) | 2021 DMC Production History Enrolled (%) | Estimated DMC Payments for Disbursement * (\$) |
| Totals | 37,468 | 25,476 | 18,877 | 74.10% | 122,983,027,359 | 208,948,794,916 | 165,288,156,535 | 79.10% | \$445,772,991 |



Dairy Revenue Protection (eff. 2019 -)

- Developed by AFBF; adopted by USDA RMA pursuant to 2018 Farm Bill
- Indemnity for decline in quarterly revenue from milk sales relative to guaranteed expected revenue from a selected milk production level.
- ***Hedges risk of both milk price decreases and milk production decreases, based upon statistical data and a selected production level respectively, not the producer's actual revenue or production.***
 - Two pricing options: (1) Class Pricing Option (Class III/IV combo); (2) Component Pricing Option (tied to FMMO component pricing).
 - Coverages available in 5% increments between 80% - 95% of quarterly revenue, with premium subsidy of 44% - 55%.



Dairy Revenue Protection - June 2021, PSU Extension

Class III

| Highest DRP Prices (as of May 26, 2021) | Date Occurred | Expected Market Price (on that date) | DRP Price Guarantee (95% of Expected Market Price) | PA Premium (\$/cwt) | Actual Market Price (at completion of quarter) |
|---|---------------|--------------------------------------|--|---------------------|--|
| 3Q2020 | 6/9/20 | \$18.34 | \$17.42 | \$0.2788 | \$20.25 |
| 4Q2020 | 1/24/20 | \$17.96 | \$17.06 | \$0.1646 | \$20.22 |
| 1Q2021 | 11/10/20 | \$17.46 | \$16.59 | \$0.3692 | \$15.98 |
| 2Q2021 | 3/11/21 | \$18.29 | \$17.38 | \$0.2008 | TBD |
| 3Q2021 | 5/12/21 | \$20.03 | \$19.03 | \$0.3119 | TBD |
| 4Q2021 | 5/12/21 | \$19.30 | \$18.34 | \$0.4285 | TBD |
| 1Q2022 | 5/12/21 | \$18.26 | \$17.35 | \$0.4748 | TBD |
| 2Q2022 | 5/12/21 | \$18.11 | \$17.20 | \$0.4980 | TBD |
| 3Q2022 | 5/14/21 | \$18.13 | \$17.22 | \$0.3692 | TBD |



Dairy Revenue Protection - June 2021, PSU Extension

Class IV

| Highest DRP Prices (as of May 26, 2021) | Date Occurred | Expected Market Price (on that date) | DRP Price Guarantee (95% of Expected Market Price) | PA Premium (\$/cwt) | Actual Market Price (at completion of quarter) |
|---|---------------|--------------------------------------|--|---------------------|--|
| 3Q2020 | 1/21/20 | \$18.40 | \$17.48 | \$0.1317 | \$13.01 |
| 4Q2020 | 1/24/20 | \$18.38 | \$17.46 | \$0.1727 | \$13.38 |
| 1Q2021 | 1/24/20 | \$17.83 | \$16.94 | \$0.1802 | \$13.71 |
| 2Q2021 | 1/17/20 | \$17.95 | \$17.05 | \$0.1906 | TBD |
| 3Q2021 | 5/18/21 | \$17.74 | \$16.85 | \$0.2309 | TBD |
| 4Q2021 | 5/19/21 | \$18.06 | \$17.16 | \$0.4226 | TBD |
| 1Q2022 | 5/21/21 | \$17.93 | \$17.03 | \$0.4044 | TBD |
| 2Q2022 | 5/25/21 | \$17.90 | \$17.01 | \$0.4635 | TBD |
| 3Q2022 | 5/25/21 | \$17.90 | \$17.01 | \$0.5260 | TBD |



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Thank you!

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