



U.S. GOVERNMENT ACCOUNTABILITY OFFICE

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September 27, 2019

The Honorable Kirsten E. Gillibrand
Ranking Member
Subcommittee on Livestock, Marketing and Agriculture Security
Committee on Agriculture, Nutrition and Forestry
United States Senate

Dairy Cooperatives: Potential Implications of Consolidation and Investments in Dairy Processing for Farmers

Dear Senator Gillibrand:

Farmer-owned dairy cooperatives are a major player in the U.S. dairy industry. In 2017, cooperatives handled almost 85 percent of milk marketed by U.S. producers.¹ Farmers form agricultural cooperatives, including dairy cooperatives, for purposes such as marketing milk and other farm products. In addition to marketing milk, some dairy cooperatives have diversified to also own and operate processing plants in an effort to earn revenue from the sale of products made from milk, such as butter, cheese, and yogurt.² Legislation was enacted in 1922 to provide agricultural cooperatives with limited exemptions from antitrust legislation, enabling farmers who operate relatively small farms to bargain more effectively with companies that purchase farm products—such as dairy processors—by increasing their market power.³

Like other U.S. agricultural industries, the dairy industry has changed significantly over time. One major change has been consolidation (the shift to fewer and larger firms) along the dairy production and marketing chain, including among farms, processors, and retailers. As the industry has consolidated, dairy cooperatives have also consolidated. For example, in 1998, four dairy cooperatives merged to form Dairy Farmers of America, the largest dairy cooperative in the United States. As a result of consolidation, the number of U.S. cooperatives that market milk has decreased significantly over time.

The U.S. Department of Agriculture (USDA) has primary federal oversight responsibility related to the dairy industry, including dairy cooperatives. USDA oversees the Federal Milk Marketing Order (FMMO) program, which establishes certain provisions under which dairy producers

¹2017 is the most recent year for which data are available from the U.S. Department of Agriculture.

²In this report, dairy processors include facilities that process milk for fluid consumption as well as those that manufacture dairy products.

³Pub. L. No. 67-146, 42 Stat. 388 (codified at 7 U.S.C. §291).

market their milk to fluid milk processors with sales in geographically defined marketing areas, called “orders.” For fluid milk processors, including dairy product manufacturers, that participate in the program, USDA establishes minimum prices that processors must pay to purchase fluid milk. USDA also qualifies cooperatives to participate in the FMMO program. In addition to overseeing the FMMO program, USDA may notify the Department of Justice’s Antitrust Division, which is responsible for investigating and enforcing federal antitrust laws, in instances in which USDA believes that a cooperative’s market power has resulted in inappropriate price increases for consumers.⁴

You asked us to review issues related to dairy cooperatives and the U.S. dairy industry. This report describes what is known about how the consolidation of dairy cooperatives and their investments in dairy processing may affect farmers.

To address this objective, we reviewed USDA publications on governance, financing, and operations of dairy cooperatives. We focused our review on publications that evaluated the effects of dairy cooperative consolidation and investments in processing on cooperative ownership, control, and member earnings. To corroborate the information in USDA publications, we reviewed other relevant government publications, such as reports by extension services, as well as peer-reviewed literature on cooperatives. We reviewed the methodologies of studies we reported on to ensure that they were sound, and we determined that they were sufficiently reliable for the purpose of summarizing effects on farmers of cooperative consolidation and investments in processing. We examined governance documents, including bylaws and articles of incorporation, for cooperatives participating in the FMMO program at the time of our review because information on these cooperatives was available from USDA. We also examined available annual financial reports for the 10 largest U.S. dairy cooperatives by volume of milk produced by members in 2017. In addition, we interviewed USDA officials and dairy industry stakeholders, including academics, farmers, and representatives from farm associations. We identified these stakeholders based on our research and on recommendations from interviewees knowledgeable about the industry.

We conducted this performance audit from November 2017 to September 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Dairy cooperatives perform a wide range of services for the benefit of their member farmers, and different cooperatives can provide different services. Services that dairy cooperatives provide can include

- negotiating with dairy processors on behalf of farmers for price and other terms of sale, such as quality and timing of delivery;
- coordinating the collection and hauling of milk, including weighing and any testing for quality and safety;
- milk processing, including bottling, production of milk products, and branding of products; and

⁴See 7 U.S.C. §292.

- other services such as farming assistance, sales of equipment and supplies, and provision of insurance and financing.

The following characteristics are generally associated with agricultural cooperatives: (1) they are owned and democratically controlled by the individuals that use the cooperative, such as through an elected board of directors; (2) they are financed mostly by the member farmers and those who use the cooperative; and (3) they distribute earnings to member farmers as patronage refunds in proportion to the farmers' use of services.⁵ A cooperative's bylaws specify the composition, terms, responsibilities, and limitations of the board of directors. Farmers exercise control over their cooperatives by voting at annual and other membership meetings, including voting to elect a board of directors. Cooperatives distribute patronage refunds partly in cash; the remainder is retained as an addition to each farmer's equity account in a given cooperative. Cooperatives' accumulation of farmers' retained patronage refunds helps finance cooperatives' operations, growth, and investments.

The dairy industry has undergone consolidation. Nationally, the number of dairy farms has decreased, and the average dairy farm size has increased. According to USDA data, from 1997 to 2017, the total number of U.S. dairy farms decreased by more than half (from 125,041 to 54,599) while the number of dairy cows per farm more than doubled (from 73 to 175).⁶ The number of dairy processors, after generally decreasing for many years, has increased since 2005. According to USDA data, in 1970, there were 3,749 dairy processing plants; by 2005, the number of plants had dropped to a low of 1,088. By 2017, the number of plants had increased to 1,305.⁷

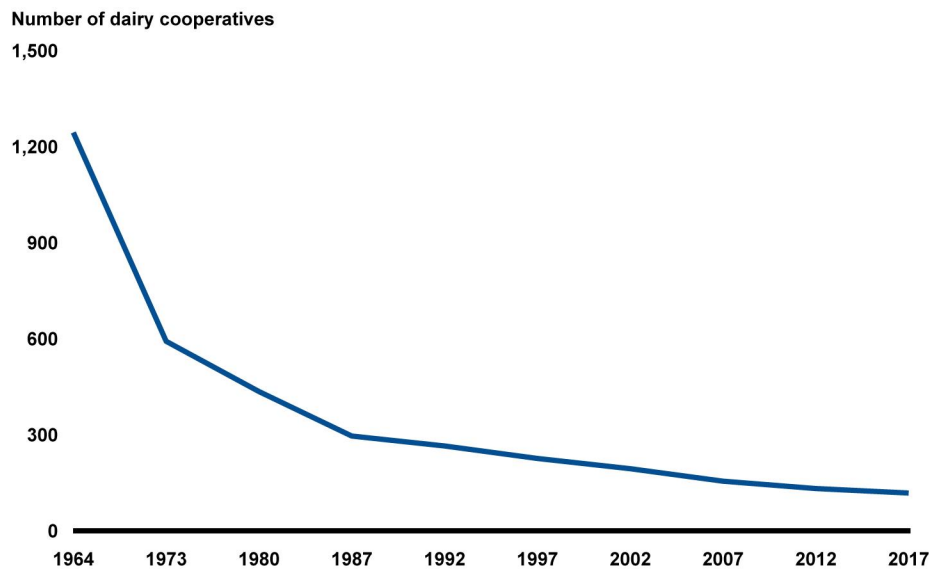
Dairy cooperatives have also consolidated, and some of those remaining now cover larger regions. According to USDA data, in 1964 there were 1,244 dairy cooperatives in the United States; in 2017, there were 118. (See fig. 1.)

⁵Another distinction is a cooperative's tax-exempt status. As described in 26 U.S.C. §521, the objective of business conducted on a cooperative basis is not to generate earnings for the cooperative but to increase the income of the members.

⁶For the data reported here, a dairy farm is defined as any farm having one or more head of milk cows on hand.

⁷Data reported do not include processors that do not make a manufactured dairy product, according to USDA officials.

Figure 1: Decrease in the Number of U.S. Dairy Cooperatives, 1964–2017



Source: U.S. Department of Agriculture. | GAO-19-695R

Data table for Figure 1: Decrease in the Number of U.S. Dairy Cooperatives, 1964–2017

	1964	1973	1980	1987	1992	1997	2002	2007	2012	2017
Number of dairy cooperatives	1244	592	435	296	265	226	194	155	132	118

Note: Years displayed in figure are based on availability of data.

Having fewer players in the dairy industry can lead to a greater degree of concentration in the industry. Concentration refers to the extent to which a small number of firms control most of the sales or purchases in a specific market. In 2017, the four largest dairy cooperatives marketed 41.3 percent of all milk marketed by U.S. producers.⁸ This percentage has remained relatively unchanged since 2002. (See enclosure for a list of the 50 largest U.S. cooperatives by volume of milk produced by members in 2017.)

Some dairy cooperatives have diversified their operations to include investments in processing facilities. For example, a cooperative may form a joint venture with a dairy processor, acquire a dairy processor, or build a dairy processing facility to secure increased market access and the additional earnings from the manufacturing of dairy products.⁹ As of 2017, cooperatives owned and operated 198 dairy processing facilities in the United States, which represented about 15 percent of all U.S. dairy processing facilities.

⁸Concentration on a regional or local basis, or for specific products within the dairy sector, may differ from the aggregate, national-level data presented here.

⁹In this report, we define a joint venture as an association of two or more cooperatives or other business entities to carry on a specific economic operation, such as a processing facility.

Consolidation of Dairy Cooperatives and Investments in Processing Can Create Competing Interests and Power Imbalances among Farmers, and Can Affect Earnings

Based on our review of USDA and other publications, and our interviews with dairy industry stakeholders, we found that the consolidation of dairy cooperatives can affect farmers' control of those cooperatives and that cooperatives' investments in dairy processing can affect farmers' earnings. In particular, farmers' control of cooperatives may be affected by the expansion of cooperatives to include competing interests and by voting structures that may create power imbalances.

- **Consolidation can create competing interests.** As dairy cooperatives consolidate and potentially represent farmers across larger regions, some cooperatives may have increasingly diverse memberships. Cooperatives with diverse memberships may represent farmers whose farms differ in characteristics such as size, type of operations, and ownership (e.g., corporate or family owned). Cooperatives' members may also differ in other ways, including whether they are full-time or part-time farmers, or seasoned farmers with generations of dairy experience or farmers new to the dairy industry. As a result, according to USDA, farmers in a cooperative can have different expectations of, and needs from, the cooperative.¹⁰ Dairy industry stakeholders we interviewed commented that cooperatives may struggle to ensure they meet the differing needs of their members. Further, according to studies we reviewed and industry stakeholders we interviewed, as a cooperative grows and encompasses potentially competing interests, some farmers may feel that they have lost control over the cooperative's priorities and strategic direction.¹¹ In reviewing a draft of this report, USDA noted that, despite this, there is also some support among farmers for consolidation of cooperatives, given the complex and competitive nature of the dairy industry.
- **Consolidation and voting structures can create power imbalances.** Publications we reviewed and dairy industry stakeholders we interviewed indicated that, as dairy cooperatives consolidate, their voting structures can create control imbalances among farmers. Traditional cooperative voting structures often established equal voting rights among farmers based on the principle of one member, one vote. While many states require that cooperatives adhere to an equal voting rights structure, some states have permitted cooperatives to adopt a voting structure that ties voting rights to member productivity. For example, a member who markets a greater volume of milk through the cooperative may have more voting power than a member who markets a smaller volume.¹² According to one publication we reviewed, the number of states that allow such a structure has increased over time, in part because farm sizes have become more diverse within cooperatives.¹³ Equal voting rights are a disadvantage for members with large farms when compared with a voting structure that ties voting to member

¹⁰U.S. Department of Agriculture, Rural Business-Cooperative Service, *Agricultural Cooperatives in the 21st Century*, Cooperative Information Report 60 (Washington, D.C.: November 2002).

¹¹N. Kalogeras, et al., "Understanding Heterogeneous Preferences of Cooperative Members," *Agribusiness*, vol. 25, no. 1 (2009); P. Osterberg, K. Hakelius, and J. Nilsson, "Members' Perception of their Participation in the Governance of Cooperatives: The Key to Trust and Commitment in Agricultural Cooperatives," *Agribusiness*, vol. 25, no. 2 (2009).

¹²A cooperative member's voting power is usually limited by state law to no more than a small percentage, typically 3 percent, of the total number of qualified votes in the cooperative.

¹³J. Royer, "Cooperative Principles and Equity Financing: A Critical Discussion," *Journal of Agricultural Cooperation*, vol. 7 (1992).

productivity; conversely, a voting structure that ties voting rights to member productivity is a disadvantage for members with small farms. Tension may exist within cooperatives about the appropriate voting structure and which structure members may view as more equitable, according to one industry stakeholder we interviewed.

In addition, dairy cooperatives' investments in processing facilities and the mechanisms used to finance those investments can result in higher earnings for farmers in a cooperative in the long term but lower earnings in the short term, while potentially reducing market access for farmers outside the cooperative. Dairy cooperatives' issuance of preferred stock also affects how earnings are distributed among farmers in a cooperative.

- **Investments in processing facilities can benefit farmers within a cooperative while reducing market access for farmers outside of the cooperative.** According to USDA documents we reviewed and industry experts we interviewed, increased market access from cooperatives' investments in processing can have a positive impact on earnings for farmers within the cooperative but may reduce market access for farmers outside of the cooperative. One dairy industry expert we interviewed told us that the best way for a cooperative to secure market share is to invest in processing facilities. For example, in 2018, Dairy Farmers of America, Select Milk Producers, and a nutrition company, Glanbia Nutritionals, formed a joint venture to build a new cheese and whey processing facility in Michigan. Dairy Farmers of America and Select Milk Producers are to supply milk to the facility. This joint venture may result in higher margins for these cooperatives and greater earnings passed on to their members; however, such a venture may restrict access to the processing facility, and thus restrict market access, for farmers who are not members of the cooperative. In reviewing a draft of this report, USDA noted that, while these investment opportunities may not allow non-members market access, market outlets resulting from these investments did not exist before the cooperative and its members decided to make the investment.
- **Retention of patronage refunds reduces farmers' earnings in the short term with expectations of long-term gains.** Cooperatives may finance investments in dairy processing through the retention of patronage refunds and, according to one publication we reviewed, the retention of these refunds can reduce farmers' earnings in the short term.¹⁴ Retention of patronage refunds is the primary means by which cooperatives build equity. For example, member equity, of which retained patronage refunds is a part, represented 84 percent of the total equity for one of the 10 largest dairy cooperatives in the United States in 2017 (\$106 million in member equity out of \$126 million in total equity).¹⁵ Across all dairy cooperatives in 2017, member equity represented 76 percent of total equity, according to USDA data. There is a trade-off between the amount of patronage refunds that cooperatives distribute as cash payouts to farmers and the amount that cooperatives retain for longer-term investments and other activities. In the short term, when cooperatives retain patronage refunds for investments, farmers may receive smaller cash payouts with the expectation that, over the long term, cooperatives will undertake investments that increase farmers' earnings.¹⁶ One farmer we interviewed commented that the financial decisions of cooperatives can be complicated and stressed

¹⁴J. Royer, "Financing agricultural cooperatives with retained earnings," *Agricultural Finance Review*, vol. 77 (3) (2017).

¹⁵Financial information reported on this cooperative is as of July 31, 2017.

¹⁶A cooperative's board of directors decides how to allocate patronage refunds. For tax exempt status, federal law requires that at least 20 percent of the patronage refund be paid in cash.

the importance of effective communication between the cooperative's board of directors and member farmers on decisions regarding the retention of patronage refunds.

- **Issuance of preferred stock affects the distribution of earnings paid out by cooperatives.** Cooperatives can raise equity from member farmers as well as from nonmembers outside of the cooperative by issuing what is known as preferred stock. According to literature we reviewed, preferred stock creates incentives for farmers to invest in their cooperative because farmers holding preferred stock have a higher claim to any earnings the cooperative distributes when compared with farmers without preferred stock. Specifically, earnings are distributed first to preferred stockholders as stock dividends, and any remaining earnings are distributed as patronage refunds to all farmers.¹⁷ For example, one of the 10 largest dairy cooperatives in the United States has issued preferred stock as recently as 2016. As of 2017, the cooperative held equity from this preferred stock of \$375 million, representing 36 percent of the cooperative's total equity of \$1 billion.¹⁸ A cooperative can offer preferred stock to nonmembers because this type of stock typically does not confer voting rights.¹⁹ With the inclusion of nonmembers as equity holders, the cooperative then has two types of stockholders—members and nonmembers—and the objective of the cooperative shifts from generating only a return on patronage for farmers to also generating a return on investment for nonmembers. This shift can impact farmers' earnings in the cooperative. On the one hand, dividends paid out to nonmember preferred stockholders reduce cooperative earnings available to be paid out as patronage refunds to farmers. On the other hand, over time, the additional equity raised through issuing preferred stock to nonmembers may result in investments that produce higher overall earnings for the cooperative, which may result in higher earnings for farmers. According to one USDA official we interviewed, the issuance of preferred stock by cooperatives to nonmembers is relatively rare.

Agency Comments

We provided a draft of this report to USDA and the Department of Justice for review and comment. Both departments provided technical comments, which we incorporated as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committees, the Secretary of Agriculture and the

¹⁷Cooperative dividends to preferred shareholders are paid at the discretion of the board of directors. Federal law requires a maximum limit of 8 percent on returns on investments in preferred stock, unless no members of the cooperative are allowed more than one vote because of the amount of stock or membership equity they own. 7 U.S.C. §291. Furthermore, 26 U.S.C. §521 requires that the dividend rate of preferred stock not exceed the legal rate of interest in the state of incorporation or 8 percent per year, whichever is greater, on the value of the consideration for which the stock was issued in order to receive an exemption. Some states may allow for higher rates.

¹⁸Financial information reported on this cooperative is as of December 31, 2017.

¹⁹One industry stakeholder we interviewed said that there is a growing movement in some states to change laws to open cooperative membership to outside investors as a means to raise additional equity. For example, since 2001, Minnesota, Iowa, Tennessee, and Wisconsin, among other states, have adopted new laws that open cooperative memberships to include nonmember investors. Some cooperatives, such as Land O'Lakes, Inc., and Organic Valley, have offered their stock to outside investors.

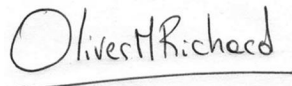
Attorney General of the United States, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or morriss@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report include Thomas Cook (Assistant Director), Ramsey Asaly (Analyst in Charge), Rose Almoguera, James Duke, Barbara El-Osta, Jaci Evans, and Lauren Mosteller. Also contributing to the report were Kevin Bray, Clayton Clark, Ellen Fried, Gina Hoover, Dawn Locke, and Dan Royer.

Sincerely yours,

Handwritten signature of Steve D. Morris in black ink.

Steve D. Morris
Director, Natural Resources and Environment

Handwritten signature of Oliver M. Richard in black ink, underlined.

Oliver M. Richard
Director, Applied Research and Methods

Enclosure

Enclosure: List of 50 Largest U.S. Dairy Cooperatives, 2017

Table 1: List of 50 Largest U.S. Dairy Cooperatives, 2017

Rank	Dairy cooperative	Headquarters location	Member milk volume (million lbs)	Number of member farms
1	Dairy Farmers of America, Inc.	Kansas City, KS	47,300	7,938
2	California Dairies, Inc.	Visalia, CA	17,000	425
3	Land O'Lakes, Inc.	Arden Hills, MN	13,000	2,079
4	FarmFirst Dairy Cooperative	Madison, WI	10,145	3,642
5	Edge (formerly Dairy Business Milk Marketing Cooperative)	Green Bay, WI	9,597	797
6	Northwest Dairy Association	Seattle, WA	8,400	425
7	Select Milk Producers, Inc.	Artesia, NM	7,095	99
8	Foremost Farms USA	Baraboo, WI	6,200	1,400
9	Associated Milk Producers, Inc.	New Ulm, MN	5,500	2,100
10	Michigan Milk Producers Association	Novi, MI	4,800	1,141
11	United Dairymen of Arizona	Tempe, AZ	4,222	61
12	Agri-Mark, Inc.	Lawrence, MA	3,200	1,070
13	Maryland and Virginia Milk Producers Cooperative Association, Inc.	Reston, VA	3,100	1,401
14	Southeast Milk, Inc.	Belleview, FL	2,600	166
15	Upstate Niagara Cooperative, Inc.	Buffalo, NY	2,200	360
16	Lone Star Milk Producers	Wichita, TX	2,135	109
17	First District Association	Litchfield, MN	2,033	629
18	Prairie Farms Dairy, Inc.	Edwardsville, IL	1,812	625
19	Organic Valley	La Farge, WI	1,533	2,013
20	National Farmers Organization, Inc.	Ames, IA	1,321	1,337
21	St. Albans Cooperative Creamery, Inc.	St. Albans, VT	1,207	350
22	Cayuga Marketing LLC	Auburn, NY	1,154	30
23	Tillamook County Creamery Association	Tillamook, OR	1,100	91
24	Magic Valley Quality Milk Producers, Inc.	Jerome, ID	1,014	35
25	Bongards' Creameries	Chanhausen, MN	1,000	247
26	Swiss Valley Farms	Davenport, IA	985	414
27	Zia Milk Producers, Inc.	Roswell, NM	827	16
28	Lanco-Pennland Quality Milk Producers	Hagerstown, MD	757	617
29	Mount Joy Farmers Cooperative Association	Mount Joy, PA	711	324
30	Ellsworth Cooperative Creamery	Ellsworth, WI	706	386
31	High Desert Milk, Inc.	Burley, ID	680	6
32	Cobblestone Milk Cooperative, Inc.	Chatham, VA	550	17
33	Scenic Central Milk Producers Cooperative Association	Boscobel, WI	524	274
34	Woodstock Progressive Milk Producers Association	Woodstock, IL	478	164
35	White Eagle Cooperative Association	South Bend, IN	476	42
36	Plainview Milk Products Cooperative	Plainview, MN	462	178
37	Rolling Hills Dairy Producers Cooperative	Monroe, WI	418	154
38	Burnett Dairy Cooperative	Grantsburg, WI	358	178
39	Lowville Producers Dairy Cooperative, Inc.	Lowville, NY	338	147
40	Mid-West Dairymen's Company	Rockford, IL	267	116
41	Cortland Bulk Milk Producers Cooperative, Inc.	Cortland, NY	260	60

Rank	Dairy cooperative	Headquarters location	Member milk volume (million lbs)	Number of member farms
42	Hastings Cooperative Creamery	Hastings, MN	252	95
43	Northwest Independent Milk Producers Association	East Olympia, WA	218	20
44	Sunrise Ag Cooperative	Buckman, MN	206	120
45	Premier Milk, Inc.	Ocala, FL	205	15
46	Cooperative Milk Producers Association	Blackstone, VA	192	81
47	Westby Cooperative Creamery	Westby, WI	185	225
48	Preble Milk Cooperative Association, Inc.	Preble, NY	180	35
49	Central Equity Milk Cooperative	Springfield, MO	173	134
50	Konhokton Milk Producers Cooperative Association	Stanley, NY	172	26

Source: *Hoard's Dairyman* | GAO-19-695R

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