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Research Report 218

Marketing Operations of Dairy Cooperatives, 2007

Abstract

A total of 49,675 member-producers of the Nation's 155 dairy cooperatives marketed 152.5 billion pounds of milk, or 82.6 percent of all milk marketed, in 2007. Forty-five cooperatives operated 176 dairy processing and manufacturing plants, 12 handled milk through receiving stations only, and 98 had no milk handling facilities. Cooperatives marketed 71 percent of the Nation's butter, 96 percent of nonfat and skim milk powders, 26 percent of natural cheese, 7 percent of packaged fluid milk products, 4 percent of ice cream, 13 percent of ice cream mix, 11 percent of yogurt, 42 percent of dry whey products, 14 percent of sour cream, and 20 percent of condensed buttermilk. Cooperatives in the 1-billion-to-2-billion-pounds of milk group showed the most significant increase in the share of total cooperative milk volume, while the milk share of the larger sized groups, as a whole, was slightly lower. A total of 86 dairy cooperatives reported having 21,475 full-time and 2,944 part-time employees. Complete financial data submitted by 94 dairy cooperatives showed that total assets for the fiscal year were $8.41 per hundredweight (cwt); total liabilities, $6.09 per cwt; members' equity, $2.32 per cwt; and net margin before taxes, 28 cents per cwt, which represented a return on equity of 12.2 percent.

Key Words: Cooperatives, milk, dairy products, marketing.

MARKETING OPERATIONS OF DAIRY COOPERATIVES, 2007

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On the Cover: Top two photos by Mark Johnson, courtesy of Tennessee Farmers Cooperative. Bottom left: photo by Sheryl Meshke, courtesy of Associated Milk Producers Inc. Bottom right: USDA archival photo.

Preface

Information for this report came primarily from the responses to a once-every-5-year USDA survey of all U.S. dairy cooperatives. The dairy-specific data were collected in conjunction with the annual survey of all cooperatives by the Cooperative Programs' Statistical Services staff of USDA Rural Development. In some cases, data were estimated for non-respondents based on their financial statements or other sources.

Cooperatives were asked to supply information on their milk-marketing operations for the fiscal year ending in calendar 2007. These fiscal years vary within the calendar year, so the data reflect some differences in time periods.

This report also updates and revises Rural Business-Cooperative Service (RBS) Research Report 201, which was based on cooperative operations for the fiscal year ending in calendar 2002. Revisions were made for consistency in interpreting data between the two surveys.

Unless otherwise specified, when calculating cooperative marketing shares of various products, information for U.S. total volumes was from the statistics reported by USDA National Agricultural Statistics Service: *Milk Disposition and Income, Final Estimates 1998-2002, May 2004; Milk Disposition and Income, Final Estimates 2003-2007, May 2009; Dairy Products, 2003 Summary, April 2004; and Dairy Products, 2008 Summary, May 2009.*

The cooperation of the responding cooperatives and other persons who supplied the necessary data for this report is gratefully acknowledged.

The historical summaries of the results of this and previous surveys may be accessed at http://www.rurdev.usda.gov/rbs/coops/dairy.htm.

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Highlights

Member-producers of dairy cooperatives marketed 152.5 billion pounds of milk in 2007, a 9.6 percent increase from 2002. This volume represented 82.6 percent of the milk marketed by farmers nationally, a slight increase from 82.4 percent 5 years earlier. The number of dairy cooperatives during this period decreased from 194 to 155. There were 45 cooperatives that processed and manufactured dairy products, the same number as in 2002, while 12 cooperatives operated receiving stations only and 98 had no milk-handling facilities.

Sixty-three percent of total cooperative volume was sold as raw milk in 2007 versus 61 percent in 2002. The other 37 percent was manufactured at plants owned and operated by cooperatives.

There were 49,675 member producers marketing milk in 2007, 19 percent (11,715) fewer than 5 years earlier. Three regions - East North Central, North Atlantic, and West North Central - together accounted for 85 percent of all member producers and 51 percent of cooperative milk volume. The Western region was the top source of cooperative milk. At 58.1 billion pounds, it represented 38 percent of all cooperative milk.

Dairy cooperatives owned and operated 193 plants, 17 for receiving and shipping milk only, 34 for manufacturing American cheese, 17 for making Italian cheese, 49 for packaging fluid milk products, 24 for churning butter, 39 plants for drying milk products, and 24 for whey products. Other plants made various other dairy products. (A plant may perform more than one function.)

Volumes of butter and nonfat and skim milk powders increased from 2002 to 2007. Cooperatives' share of butter, at 1,087 million pounds, remained at 71 percent of U.S. production, and their share of nonfat and skim milk powders, at 1,444 million pounds, was an overwhelming 96 percent. However, cheese made by cooperatives had a substantial drop, decreasing by 15 percent from 5 years earlier to 2,513 million pounds and accounting for 26 percent (versus 34 percent in 2002) of U.S. production. Cooperatives' share of dry whey products also declined, from 52 percent to 42 percent in 2007.

Sales of packaged fluid milk products by cooperatives increased both in volume and in market share. The 4,035 million pounds marketed was 7.4 percent of the Nation's production, up from 7 percent in 2002. Share of ice cream increased from 3 percent to 4 percent, while share of ice cream mix increased from 6 percent to 13 percent. In 2007, cooperatives marketed 11 percent of the Nation's yogurt, 14 percent of the sour cream, and 20 percent of the condensed buttermilk.

As in 2002, there were four cooperatives that each handled more than 6 billion pounds of member milk in 2007. The four accounted for 49.2 percent of cooperative milk volume in 2007, the same share as reported for 2002. Together, the 17 cooperatives in the more-than-2-billion-pounds-size groups had a very slight decrease in the share of cooperative milk, 0.3 percentage point, from 80.6 percent in 2002 to 80.3 percent in 2007.

Both the cooperative number and the milk volume of the 1-billion-to-2-billion-pounds group more than doubled over the 5-year period. This is the size group to show the most significant increase in the share of total cooperative milk volume (from 5.1 percent in 2002 to 10.1 percent), mostly at the expense of the groups of cooperatives with smaller milk volumes.

The four largest cooperatives had only a slightly higher share of the Nation's milk, moving from 40.5 percent in 2002 to 40.7 percent in 2007. Broadening the focus to the largest 8 dairy cooperatives and the largest 20, their shares of cooperative milk or total U.S. milk changed little or not at all. In terms of milk volume, the relative position of dairy cooperatives to the rest of the industry has been remarkably stable.

Sixty-five dairy cooperatives reported having a total of 21,475 full-time and 2,938 part-time employees in 2007. Six other cooperatives each had only one part-time employee. Another 15 cooperatives reportedly had no employees. These 86 cooperatives marketed 86 percent of cooperative milk.

Complete financial data submitted by 94 dairy cooperatives showed that total assets for the fiscal year ending in 2007 were $12 billion ($8.41 per cwt), total liabilities were $8.7 billion ($6.09 per cwt), and members' equity was $3.3 billion ($2.32 per cwt). Eighty-two percent of the equity was allocated to members. Net margin before taxes was $404 million (28 cents per cwt), a return on equity of 12.2 percent. Together these cooperatives marketed 94 percent of total cooperative milk volume.

MARKETING OPERATIONS OF DAIRY COOPERATIVES, 2007

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Farmer owned and operated dairy cooperatives continue to provide the most significant channel for marketing milk from the Nation's dairy farms.

In line with industry and dairy farm trends, the number of cooperatives is declining, but those remaining are handling larger volumes. In addition, many cooperatives own and operate plants to process, manufacture, and market various dairy products.

This report, ninth in a series of periodic appraisals of the scope and performance of dairy cooperatives, describes their continuing evolution in an ever-changing market environment.

Cooperative Industry Profile

Between 2002 and 2007, the number of dairy cooperatives decreased by 39 (20 percent), from 194 to 155. The pace was faster than the reduction of 32 cooperatives (14 percent) recorded from 1997 to 2002. In 2007, 129 (83 percent of all dairy cooperatives) were headquartered in the North Atlantic, East North Central, and West North Central regions; the North Atlantic region had the most with 55 dairy cooperatives (table 1). These three regions also showed a drop of dairy cooperative numbers from 2002. The steepest reduction was 30 in the North Atlantic region. The South Atlantic region had an increase of two cooperatives. The number of dairy cooperatives in the South Central and Western regions remained unchanged.

In 2007, 45 cooperatives (29 percent of all dairy cooperatives) processed and manufactured dairy products, the same number as in 2002. The number of cooperatives with plant operations increased by one both in the South Atlantic and South Central regions, and it decreased by one each in the North Atlantic and West North Central regions. The East North Central region still had the most cooperatives (20) with plant operations.

Cooperatives that operated only milk receiving stations decreased from 19 to 12 by 2007. The West North Central region dropped five cooperatives, while the East North Central and South Central dropped two each. There was a gain of two cooperatives that operated only milk-receiving stations in the Western region.

Cooperatives that did not have plants or milk-receiving facilities decreased from 130 to 98. Almost half of these were in the North Atlantic region. However, the 48 such cooperatives in that region represented a decrease of 29 from 2002, the steepest decline among the 3 regions that showed a decline. The South Atlantic, West North Central, and South Central regions each gained one such cooperative.

Most cooperatives (88 percent of all dairy cooperatives) sold at least some bulk raw milk (table 2). The number of cooperatives that marketed butter, Italian cheese, sour cream and yogurt remained unchanged from 2002. There was a gain of four cooperatives that made specialty cheeses and a gain of one each that made dry whole milk and condensed milk. On the other hand, six fewer cooperatives than in 2002 made American cheese. Cooperatives that handled other selected dairy products all declined in number.

Milk Volume and Utilization

In 2007, cooperative member-producers marketed 152.5 billion pounds of milk, or 82.6 percent of milk marketed by all U.S. producers (table 3). The cooperative share of milk was an increase of 0.2 percentage point from 2002, when it was 82.4 percent. Over the 5-year period, milk marketed by cooperative members increased 9.6 percent, while the increase was 9.2 percent by all U.S. producers.

Milk received from nonmembers and non-cooperative firms decreased by almost 2 billion pounds (37 percent) when compared with 2002. In total, coopera-

Figure 1—Number of Cooperatives Operating in Each Region, Member-Producers, Member Milk, and Milk per Producer, 2007

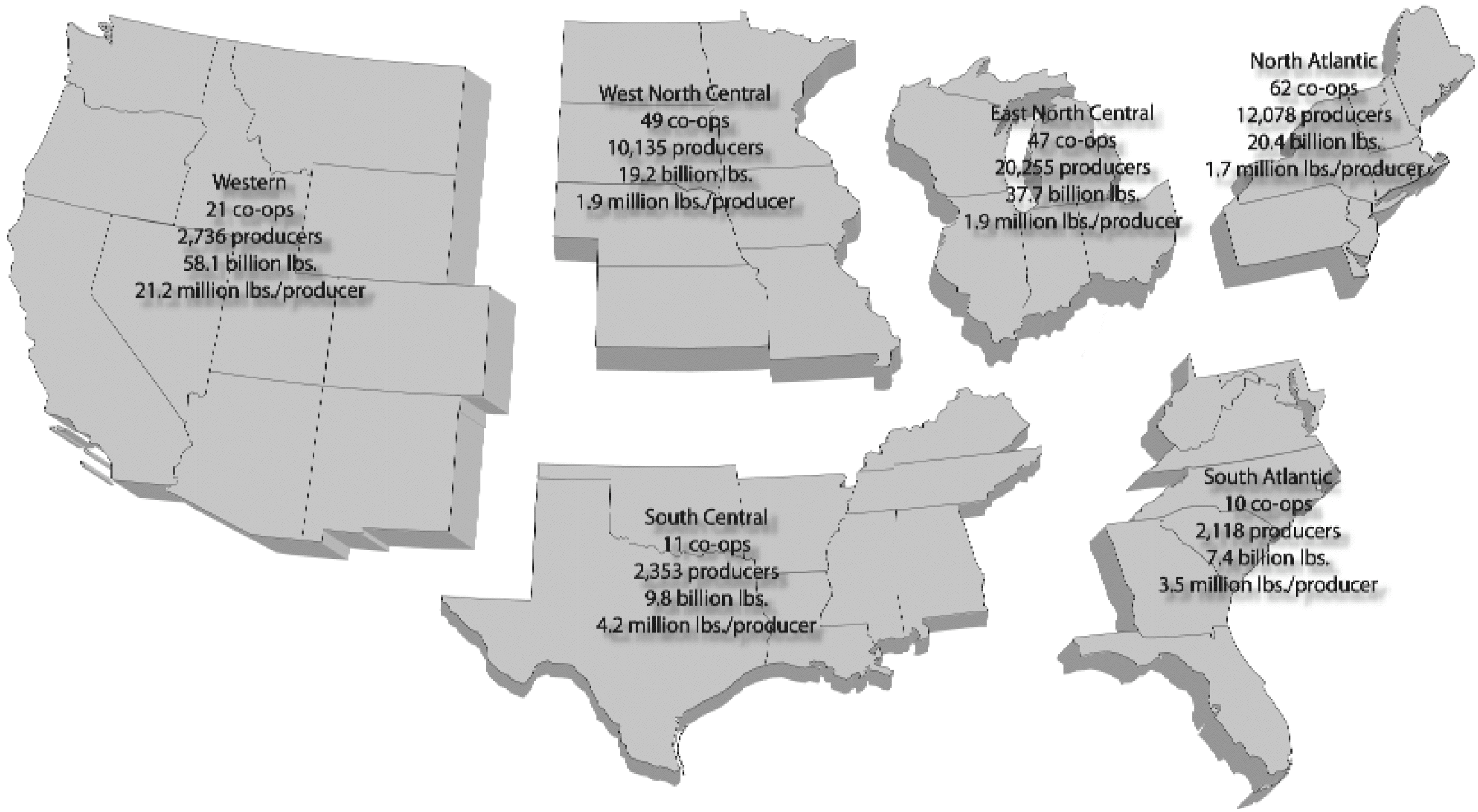

Table 1—Dairy cooperatives by type of operation and by headquarters region, 2002 and 2007

Region[1]	Processing and manufacturing dairy products		Operating milk receiving facilities only		Not operating milk plants or receiving facilities		Total	
	2002	2007	2002	2007	2002	2007	2002	2007
	Number							
North Atlantic	7	6	1	1	77	48	85	55
South Atlantic	1	2	0	0	2	3	3	5
East North Central	20	20	5	3	16	12	41	35
West North Central	10	9	10	5	24	25	44	39
South Central	0	1	2	0	1	2	3	3
West	7	7	1	3	10	8	18	18
All regions	45	45	19	12	130	98	194	155
	Percent							
Share of total cooperatives	23	29	10	8	67	63	100	100

[1]Figure 1 shows States by region.

Table 2—Cooperatives marketing selected dairy products, 2002 and 2007[1]

Item	2002	2007	5-year change
	Number of cooperatives		
Bulk raw milk	168	136	-32
Butter	19	19	0
Nonfat dry milk	17	14	-3
Dry whole milk	4	5	+1
Dry buttermilk	11	10	-1
Natural cheese other than cottage cheese	32	31	-1
American cheese	24	18	-6
Italian cheese	6	6	0
Swiss cheese	5	4	-1
Other (specialty) cheeses	11	15	+4
Cottage cheese	9	6	-3
Sour cream	8	8	0
Packaged fluid milk products	16	13	-3
Ice cream	7	6	-1
Ice cream mix	8	6	-2
Yogurt	6	6	0
Condensed milk	14	15	+1
Condensed whey	10	7	-3
Condensed buttermilk	6	4	-2
Dry whey products	13	11	-2
Whey protein concentrates & isolates[2]		6	
Lactose[2]		4	

[1] A cooperative may market several products.
[2] Separately counted for 2007

Table 3—Cooperative share of milk marketed by producers, 2002 and 2007

Year	Milk from member-producers	Milk from sources other than cooperatives[1]	Total milk handled by cooperatives[2]	United States total	Cooperative share of U.S. Total: Member milk	Cooperative share of U.S. Total: Total milk handled
	---Million pounds---				---Percent---	
2002	139,205	5,144	144,349	168,944	82.4	85.4
2007	152,514	3,272	155,786	184,565	82.6	84.4
	---Percent---					
5-year change	9.6%	-36.7%	7.9%	9.2%		

[1] Milk from nonmembers and non-cooperative firms.
[2] Handled by physical receipt, bargaining or servicing transactions. Excludes inter-cooperative shipment.

tives received or bargained for 155.8 billion pounds of milk, or 84.4 percent of total volume marketed by all U.S. producers. Cooperatives' share was 1 percentage point lower than in 2002. Cooperatives sold 63 percent of this volume as raw milk, up 2 percentage points from 2002 (table 4). In other words, cooperatives processed or manufactured 37 percent of the milk in the plants they directly operated.

Market strategy changes and industry restructuring in recent years caused a large volume of the raw milk to be shipped to dairy plants in which cooperatives had an investment but did not directly operate.

Table 4—Utilization of milk marketed by cooperatives, 2002 and 2007[1]

Year	Milk marketed	Utilization rate
	---Million pounds---	---Percent---
2002		
Sold raw[2]	88,073	61
Processed or manufactured	56,276	39
Total	144,349	100
2007		
Sold raw[2]	98,288	63
Processed or manufactured	57,498	37
Total	155,786	100

[1] Excludes inter-cooperative volume and includes milk from non-member producers and non-cooperative firms.
[2] Includes milk shipped to plants which cooperatives invested in.

To some extent, declining cooperative plant numbers and decreases in market shares of some products were the results of this market evolution.

Member Supply and Location

There were 49,675 cooperative member-producers marketing milk in 2007. Most (20,255 producers) were in the East North Central region, followed by the North Atlantic region (12,078 producers) and the West North Central region (10,135 producers). Together, these regions had 85 percent of total member producers, but only 51 percent of member milk (table 5).

Following the national trend of decreasing dairy farm numbers, dairy cooperatives reported a 19-percent decline in the number of member-producers in 5 years — from 61,390 to 49,675. The greatest declines were in the two North Central regions, each of which had 4,000 fewer member-producers.

Every region of the Nation seemed to be adequately served by dairy cooperatives. The South Atlantic was served by 10 cooperatives, while 62 cooperatives had members in the North Atlantic region.

In 2007, the Western region remained the top source of cooperative milk volume. The 2,736 producers there (5.5 percent of all dairy cooperative members) marketed 58.1 billion pounds of member milk. This represented 38 percent of member milk marketed by all cooperatives, up from 35 percent in 2002. The East North Central region accounted for 25 percent of total member milk volume, unchanged from 2002. The North Atlantic and West North Central regions each supplied 13 percent of the total U.S. cooperative member volume.

Table 5—Cooperative member milk by region, number of producers, and milk per producer, 2002 and 2007

Year and region[1]	Cooperatives[2]	Member-producers	Member milk	Milk per producer	Co-op regional share of milk[3]
	--------*Number*--------		---*Million pounds*---		---*Percent*---
2002					
North Atlantic	87	12,886	19,826	1.5	69
South Atlantic	8	2,770	8,448	3.0	90
East North Central	53	24,314	34,210	1.4	90
West North Central	53	14,199	17,893	1.3	94
South Central	8	3,617	9,752	2.7	89
Western	24	3,604	49,076	13.6	73
All[4]	194	61,390	139,205	2.3	82.4
2007					
North Atlantic	62	12,078	20,428	1.7	76
South Atlantic	10	2,118	7,350	3.5	94
East North Central	47	20,255	37,675	1.9	91
West North Central	49	10,135	19,192	1.9	97
South Central	11	2,353	9,788	4.2	83
Western	21	2,736	58,081	21.2	76
All[4]	155	49,675	152,514	3.1	82.6

[1] Figure 1 shows States by region.
[2] Cooperatives having member-producers in the region.
[3] Cooperative member milk volume as a percentage of regional volume marketed by producers.
[4] Sum of cooperatives not equal to all-region total because many had member-producers in more than one region.

All regions except the South Atlantic increased milk volumes from cooperative members. The greatest increase was in the Western region, up 9 billion pounds in 5 years.

Milk deliveries per member-producer were up in all regions in the last 5 years. Nationally, it increased 35 percent from 2.3 million pounds to 3.1 million pounds. Per member delivery was highest in the Western region at 21.2 million pounds, a 56-percent increase from 13.6 million pounds in 2002, and was more than 12 times that of the North Atlantic region in 2007.

Plant Operations

Cooperatives owned and operated a total of 193 dairy plants in 2007, 18 fewer than in 2002 (table 6). More than one-third of the plants (66 plants) were in the East North Central region. The region was also the most prominent in almost all categories of dairy plants, except for churning butter, drying milk products, and making ice cream. The Western region had the most plants for manufacturing butter and dry milk products.

Three regions had more plants in 2007 than in 2002: the North Atlantic region gained one plant, the South Atlantic region gained five, and the South Central region gained two. On the other hand, the 2 North Central regions and the Western region had fewer plants operated by cooperatives, with the East North Central region showing 17 fewer plants.

Seventeen plants served only as milk-receiving stations, compared with 35 in 2002. Manufacturing operations were carried out in 176 plants, unchanged from 2002.

Forty-nine cooperative plants packaged fluid milk products, up seven from 2002. The East North Central region had the most, with 14, followed by the West Central region, with 12. Butter-manufacturing plants declined from 25 to 24. Thirty-nine plants manufactured dry milk products (other than dry whey products), down four from 5 years earlier.

Many manufacturing operations were devoted to cheesemaking — 34 American, 17 Italian, and 18 other cheeses. The East North Central region had the most cooperative cheese plants in every category.

In 2007, 11 cooperative plants made cultured products and the same number made ice cream. Fiftysix plants produced condensed milk and whey products. Dry whey products were made in 24 cooperative plants. Twenty-six plants performed functions that are not listed in table 6.

Dairy Products Marketed

This section and the accompanying tables (tables 7 and 8) describe the net volumes of selected dairy products marketed by cooperatives. Comparisons are made between the volumes marketed by cooperatives and total U.S. production.

Butter — Cooperatives churned 1,087 million pounds of butter in 2007, up 14 percent from 2002. Cooperatives' share of U.S. production remained at 71 percent.

Table 6—Number of dairy plants owned and operated by cooperatives performing various marketing functions, by plant location, 2002 and 2007[1]

Marketing function	Region[2]						
	North Atlantic	South Atlantic	East North Central	West North Central	South Central	Western	Total
	Number						
2002							
Receive and ship milk[3]	11	1	43	41	7	22	125
Churn butter	5	2	6	4	1	7	25
Make dry products	6	2	8	7	3	17	43
Make American cheese	3	0	23	11	0	11	48
Make Italian cheese	2	0	13	4	0	2	21
Make other cheeses	0	0	15	3	0	0	18
Package fluid milk	4	1	14	13	4	6	42
Make cultured products	2	1	5	4	2	1	15
Make ice cream	0	1	9	5	1	4	20
Make condensed products[4]	4	2	26	14	4	16	66
Make dry whey products	2	0	12	10	0	4	28
Other dairy-related activities	6	0	4	6	1	1	18
Total[5]	18	3	83	57	13	37	211[3]
2007							
Receive and ship milk[3]	9	0	42	35	11	26	23
Churn butter	3	2	5	5	1	8	24
Make dry products	6	2	7	6	2	16	39
Make American cheese	4	0	15	9	0	6	34
Make Italian cheese	1	0	11	3	0	2	17
Make other cheeses	1	0	13	4	0	0	18
Package fluid milk	3	5	14	12	9	6	49
Make cultured products	2	0	4	4	0	1	11
Make ice cream	0	0	3	4	1	3	11
Make condensed products[4]	5	3	20	12	2	14	56
Make dry whey products	2	0	10	8	0	4	24
Other dairy-related activities	8	0	3	9	1	5	26
Total[5]	19	8	66	50	15	35	193[3]

1 All dairy plants, including joint-venture plants operated by co-ops.
2 Figure 1 shows States by region.
3 Of plants performing milk receiving and shipping function, 35 were receiving stations only in 2002 and 17 in 2007. Thus, 176 plants in both years were dairy products manufacturing plants.
4 Includes condensed whey and concentrated milk products.
5 Sum of plants not equal to totals because some perform more than one function.

Table 7—Selected dairy products marketed by cooperatives, 2002 and 2007

Item	2002	2007	5-year change	
	---Thousand pounds---			-Percent-
Butter	956,211	1,087,012	130,801	14
Dry milk products				
Dry whole milk	22,425	16,322	-6,103	-27
Dry buttermilk	48,104	53,043	4,939	10
Nonfat and skim milk powders[1]	1,352,016	1,444,395	92,379	7
Nonfat dry milk, human		1,357,782		
Skim milk powders		83,790		
Dry skim milk, animal		2,823		
Natural cheese other than cottage cheese	2,948,084	2,512,713	-435,371	-15
American cheese	2,112,011	1,698,485	-413,526	-20
Italian cheese	765,426	742,830	-22,596	-3
Swiss cheese	39,509	36,921	-2,588	-7
Other (specialty) cheeses	31,138	34,477	3,339	11
Dry whey products	1,104,000	1,027,144	-76,856	-7
Dry whey (including modified whey)[2]		739,877		
Whey protein concentrates & isolates		171,077		
Lactose		116,190		
Packaged fluid milk products	3,795,462	4,034,808	239,346	6
Sour cream	132,690	162,827	30,137	23
Cottage cheese	111,424	100,205	-11,219	-10
Condensed whole and skim milk (solids)[3]	629,684	765,221	135,537	22
Condensed buttermilk (solids)	19,000	11,040	-7,960	-42
Bulk fluid cream (butterfat)	326,516	485,536	159,020	49
Bulk fluid skim	294,604	390,331	95,727	32
	---Thousand gallons---			
Ice cream	38,000	49,268	11,268	30
Ice cream mix	47,000	93,411	46,411	99
Yogurt	4,405	8,129	3,724	85

[1] The three nonfat and skim milk powders are separately counted for 2007. However, nonfat dry milk (human) may be over-counted and skim milk powders and dry skim milk (animal) under-counted, because some cooperatives reported the three products as a lump sum number

[2] The three dry whey products are separately counted for 2007. Dry whey may include some dry permeate and whey protein concentrates and isolates.

[3] Bulk and canned, including blends and ultrafiltered products.

Dry milk products — A total of 1,444 million pounds of nonfat and skim milk powders (nonfat dry milk, skim milk powders, and dry skim milk for animal) were marketed in 2007 by cooperatives. They had a 96-percent share of U.S. production of these dry milk products. (Skim milk powder is a new category of dry product being reported since 2005. It includes protein standardized and blends.)

Cooperatives marketed 51 percent of the Nation's dry whole milk, up from 47 percent in 2002. Their share of dry buttermilk was 65 percent in 2007.

Cheese — In 2007, cooperatives marketed 2,513 million pounds of natural cheese, excluding cottage cheese, a decline of 15 percent from 2002. As a result, cooperatives' share of U.S. natural cheese production was reduced by 8 percentage points, from 34 percent to 26 percent.

Among the natural cheese produced by cooperatives, over two-thirds (1,698 million pounds or 68 percent) was American cheese, followed by Italian cheese (743 million pounds or 30 percent).

Table 8—Selected dairy products marketed by cooperatives and shares of U.S. production, 2002 and 2007

Item	2002 co-ops	2002 U.S.	Co-op share	2007 co-ops	2007 U.S.	Co-op share
	-----------*Thousand pounds*---------		--*Percent*--	----------*Thousand pounds*--------		--*Percent*--
Butter	956,211	1,355,147	71	1,087,012	1,532,717	71
Dry milk products						
Dry whole milk	22,425	47,411	47	16,322	31,746	51
Dry buttermilk	48,104	54,886	88	53,043	81,386	65
Nonfat and skim milk powders[1]	1,352,016	1,603,504	84	1,444,395	1, 503,992	96
Natural cheese other than cottage cheese	2,948,084	8,547,267	34	2,512,713	9,776,785	26
American cheese	2,112,011	3,690,978	57	1,698,485	3,877,214	44
Italian cheese	765,426	3,470,014	22	742,830	4,198,800	18
Swiss cheese	39,509	254,096	16	36,921	313,689	12
Other (specialty) cheeses	31,138	1,132,179	3	34,477	1,387,082	2
Dry whey products	1,104,000	2,116,340	52	1,027,144	2,420,250	42
Dry whey (including modified whey)[2]				739,877	1,231,798	60
Whey protein concentrates & isolates				171,077	432,928	40
Lactose				116,190	755,525	15
Packaged fluid milk products[3]	3,795,462	54,216,000	7.0	4,034,808	54,619,000	7.4
Sour cream	132,690	*n.a.	n.a.	162,827	1,135,468	14
Condensed buttermilk (solids)	19,000	55,875	34	11,040	55,754	20
	-----------*Thousand gallons*---------		--*Percent*--	-------------*Thousand gallons*---------		--*Percent*--
Ice cream	38,000	1,364,580	3	49,268	1,352,445	4
Ice cream mix	47,000	728,701	6	93,411	721,877	13
Yogurt	4,405	70,771	6	8,129	74,722	11

[1] Nonfat dry milk (human) and dry skim milk (animal) for 2002. 2007 data includes skim milk powders.
[2] Dry whey reported by cooperatives may include some dry permeate, and whey protein concentrates and isolates.
[3] U.S. beverage milk volume adopted from http://www/ers.usda.gov/publications/ldp/LDPTables.htm.
*- not available.

American cheese made by cooperatives was down 20 percent from 2002, while U.S. production increased 5 percent, resulting in a decreased cooperative share of 44 percent, down from 57 percent in 2002.

In the same 5 years, cooperative Italian cheese marketing decreased by 3 percent, and cooperative share of U.S. total Italian cheese dipped to 18 percent.

Cooperative Swiss cheese production in 2007 was 37 million pounds, 7 percent lower than in 2002. Cooperative share of U.S. production was down to 12 percent.

Cooperatives also marketed 34 million pounds of natural cheese other than American, Italian, or Swiss cheese, an 11-percent increase from 2002. However, this accounted for only 2 percent of U.S. production of other cheeses, unchanged from 2002.

Packaged fluid milk products — Cooperatives marketed 4,035 million pounds of packaged fluid milk products in 2007, up 6 percent from 2002. However, cooperatives' share of U.S. total beverage milk volume increased only slightly, from 7 percent 5 years earlier to 7.4 percent in 2007.

Ice cream and ice cream mix — Cooperatives' role in the ice cream business is relatively minor, marketing 49 million gallons in 2007. Their share of the Nation's production increased from 3 to 4 percent. Ice cream made by cooperatives increased 30 percent while U.S. production decreased slightly.

Cooperatives reported manufacture of 93 million gallons of ice cream mix or 13 percent of U.S. production in 2007. This market share was more than double the 6 percent share in 2002. In the 5-year period, U.S. production decreased slightly while cooperative volume almost doubled.

Yogurt — The volume of yogurt marketed by cooperatives increased 85 percent since 2002, and market share occupied by cooperatives increased from 6 percent to 11 percent.

Dry whey products — In 2007, cooperatives marketed 1,027 million pounds of dry whey products, down 7 percent from 2002, while U.S. production increased 14 percent in the same period. The percentage of dry whey products made by cooperatives decreased from 52 percent to 42 percent of U.S. production in 5 years.

Sour cream and cottage cheese — Cooperatives marketed 163 million pounds of sour cream in 2007, an increase of 23 percent over the 5-year period and representing a 14-percent share of U.S. production. Cottage cheese produced by cooperatives decreased by 10 percent to 100 million pounds.

Condensed milk products — Condensed whole and skim milk, both bulk and canned, and including blends and ultrafiltered products, totaled 765 million pounds of milk solids. This was a 22-percent increase over 2002. Cooperatives' share of condensed buttermilk dropped to 20 percent of U.S. total in 2007, down from 34 percent.

Cooperative Sizes

There were four cooperatives that each handled more than 6 billion pounds of member milk in 2007, the same number as in 2002 (table 9). The four accounted for 49.2 percent of cooperative milk in 2007, the same share as reported for 2002.

The number of cooperatives in the next size group (3 billion to 6 billion pounds of milk) increased by one, to eight, by 2007. The milk volume of this group occupied a 22.9-percent share of cooperative milk, an increase of 2 percentage points from 2002.

The 2-billion-to-3-billion-pounds group saw a decrease of one cooperative from 2002, and the group's share of cooperative milk decreased by 2.3 percentage points, from 10.5 percent to 8.3 percent.

The most significant change was the 1-billion-to-2-billion-pounds group. The number of cooperatives in this group more than doubled from 5 to 11, as did their milk volume. Their share of cooperative milk almost doubled, from 5.1 percent to 10.1 percent in 2007.

The 0.5-billion-to-1-billion-pounds group had eight cooperatives in 2007, five fewer than in 2002. The milk volume accounted for by this group declined the most (by 3.9 billion pounds, or 43 percent), and showed the most substantial decrease in the share of cooperative milk volume, from 6.5 percent to 3.4 percent.

Thirty-two cooperatives were in the group that marketed between 100 million and 500 million pounds of milk in 2007, an increase of two cooperatives. Together, this group had a slightly lower milk volume and had a 4.4-percent share of cooperative milk, down from 4.9 percent in 2002.

There were 87 cooperatives in the smallest sized group, which marketed less than 100 million pounds of milk in 2007. This was a steep (33 percent) decline from 2002, when 129 cooperatives in this group were counted. The group's milk volume declined by 34 percent and held only a 1.8-percent share of cooperative milk, a marked decline from the 2.9-percent share in 2002.

Relative to others, the 1-billion-to-2-billion-pounds-of-milk group of cooperatives grew the most in terms of market share. While as a group, the 17 largest sized cooperatives (greater than 2 billion pounds of milk) by and large held steady, decreasing their share of cooperative milk by only 0.3 percentage point from 80.6 percent in 2002 to 80.3 percent in 2007, the smaller sized groups lost more ground.

Concentration Ratio

A measure commonly used to gauge the concentration of a sector (or market) is the share occupied by the four largest firms in the sector.

The share of the largest four dairy cooperatives remained at 49.2 percent of cooperative milk in 2007, as it was in 2002 (tables 9 and 10). Because there was a slight increase in total cooperative milk relative to total U.S. milk marketed (table 3), the largest four dairy cooperatives also had a slightly higher share of the Nation's milk, increasing from 40.5 percent in 2002 to 40.7 percent in 2007.

When the focus was expanded to the largest eight dairy cooperatives, their milk as a share of cooperative milk and as a share of total U.S. milk both went down somewhat from 2002 to 2007.

Meanwhile, the largest 20 dairy cooperatives had a slight decline in their share of cooperative milk. However, their share of the Nation's milk was unchanged.

In terms of milk volume, the relative position of dairy cooperatives to the rest of the industry has been remarkably stable.

Employees

A total of 65 dairy cooperatives (42 percent of all dairy cooperatives) reported having 21,475 full-time

Table 9—Size of dairy cooperatives in terms of milk marketed by members, 2002 and 2007

Milk marketed by members	Cooperatives		Share of cooperatives		Member milk		Share of co-op milk	
	2002	2007	2002	2007	2002	2007	2002	2007
	---Number---		*---Percent---*		*--Million Pounds--*		*---Percent---*	
More than 6 billion pounds	4	4	2.1	2.6	68,499	75,089	49.2	49.2
3 to 6 billon pounds	7	8	3.6	5.2	29,040	34,899	20.9	22.9
2 to 3 billon pounds	6	5	3.1	3.2	14,615	12,504	10.5	8.2
1 to 2 billion pounds	5	11	2.6	7.1	7,120	15,439	5.1	10.1
0.5 to 1 billion pounds	13	8	6.7	5.2	9,101	5,176	6.5	3.4
100 to 500 million pounds	30	32	15.5	20.6	6,761	6,740	4.9	4.4
Less than 100 million pounds	129	87	66.5	56.1	4,063	2,681	2.9	1.8
Total	194	155	100.0	100.0	139,199	152,528	100.0	100.0

Table 10—Share of milk marketed by members of dairy cooperatives, 2002 and 2007

Category	2002	2007
	-----Percent-----	
Share of cooperative volume		
4 largest cooperatives	49.2	49.2
8 largest cooperatives	62.9	62.3
20 largest cooperatives	84.0	83.7
Share of total U.S. volume		
4 largest cooperatives	40.5	40.7
8 largest cooperatives	51.8	51.5
20 largest cooperatives	69.2	69.2

and 2,938 part-time employees in 2007 (table 11). These cooperatives marketed 127.4 billion pounds of member milk, or 84 percent of cooperative milk.

(In addition to the main business of marketing milk, some cooperatives also handled farm supplies and/or other commodities. Therefore, not all employees were engaged in the business of handling milk and dairy products.)

Six other cooperatives had only part-time employees. These were small bargaining cooperatives, each employing a part-time employee.

Another 15 cooperatives reportedly had no employees. Again, most of them were small bargaining cooperatives.

In total, these 86 cooperatives represented 55 percent of all dairy cooperatives and marketed 86 percent of cooperative milk. The remaining 14 percent of the milk was handled by the 45 percent of dairy cooperatives that did not supply employment information.

Financial Performance

Complete financial data submitted by 94 dairy cooperatives showed that their total assets for the fiscal year ending in 2007 were $12 billion (table 12). Current assets accounted for $7.3 billion, and fixed assets (net property, plant, and equipment (PP&E) and other assets) were $4.6 billion.

Total liabilities for the 94 cooperatives were $8.7 billion. They owed $6.3 billion in current liabilities, and incurred $2.4 billion long-term debt.

Members' equity, the balance of assets and liabilities, was $3.3 billion. Most equity (82 percent or $2.7 billion) was allocated to members.

On a per-hundredweight-of-milk basis, total assets were $8.41, total liabilities were $6.09, and member equity was $2.32.

(Dairy cooperatives typically pay members for their milk twice a month. A large proportion of the current assets and the current liabilities are related to such periodic cash payments to members. This is a unique characteristic of the balance sheet of dairy cooperatives.)

The 94 cooperatives marketed 142.9 billion pounds of milk in 2007. They represented 61 percent of all dairy cooperatives and 94 percent of cooperative milk volume.

Total income reported by the 94 cooperatives was $44.2 billion (table 13). Of this amount, 87.6 percent ($38.8 billion) was from milk and dairy products sales, 11.6 percent ($5.1 billion) was from supply and other sales, and less than 1 percent was from other income.

Substracting total costs and expenses from total income, net margin before taxes was $404 million or 28 cents per hundredweight of milk marketed. This represents a before-tax return on equity of 12.2 percent.

Some cooperatives reported the value of the milk they bargained for as sales in the income statements, while others did not. For this latter group, an estimated value of the milk that was bargained for was included in the milk and dairy products sales in order for the cooperative sales figures to be consistent. The estimated value is offset by the equal amount of the cost of goods sold and, therefore, does not affect the $404 million net savings reported. Milk and dairy product sales may also include some inter-cooperative transactions; again, this does not affect the reported total net savings of dairy cooperatives as a group.

Table 11—Number of employees of 86 dairy cooperatives, 2007

	Cooperatives reporting	Full-time employees	Part-time employees	Member milk
	Number			Million lbs
Having full-time employees	65	21,475	2,938	127,422
Having only part-time employees	6	-	6	296
Having no employee	15	-	-	3,767
Total reported	86	21,475	2,944	131,485
	Percent			
Share of total cooperatives	55%	*n.a.	n.a.	86%

*- not available.

Table 12—Aggregated balance sheet of 94 dairy cooperatives, 2007

	--Thousand dollars--
Assets:	
Current assets	7,258,423
Net PP&E and other assets	4,609,394
Investments in other co-ops	152,067
Assets not categorized	935
Total assets	12,020,819
Liabilities & equity:	
Current liabilities	6,290,839
Long-term & other liabilities	2,409,129
Liabilities not categorized	677
Total liabilities	8,700,645
Members' equity	
Common stock	1,857
Preferred stock	232,595
Allocated equity	2,727,249
Un-allocated equity	358,473
Total equity	3,320,174
Total liabilities and equity	12,020,819
Number of dairy cooperatives reporting	94
Member milk (million pounds)	142,865
Total assets per hundredweight	$8.41
Total liabilities per hundredweight	$6.09
Members' equity per hundredweight	$2.32

Table 13—Aggregated income statement of 94 dairy cooperatives, 2007

	--Thousand dollars--
Milk & dairy product sales[1]	38,765,715
Supply and other sales	5,128,272
Service receipts, subsidiary and other income	318,880
Patronage refunds received	8,377
Non-recurring gains	15,733
Total income	44,236,977
Cost of goods sold[1]	41,221,393
Expenses	2,606,133
Non-recurring losses	5,161
Total costs and expenses	43,832,687
Net margin before taxes	404,290
Number of dairy cooperatives reporting	94
Member milk (million pounds)	142,865
Net margin before taxes per hundredweight	$0.28
Before-tax return on members' equity	12.2%

[1] Includes the estimated value of milk that was bargained for by some cooperatives but was not reported in their income statements. Both items may also include some inter-cooperative transactions.

USDA Rural Development

Rural Business–Cooperative Programs

Stop 3250

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USDA Rural Development provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The cooperative segment of USDA Rural Development (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs. Rural Development also publishes research and educational materials and issues *Rural Cooperatives* magazine.