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Cass-Clay Creamery: A New Direction for an Old Brand

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North Dakota (ND) was not known for being especially warm in December and 2006 was no different than any other December. Keith Pagel, general manager of Cass-Clay Creamery (Cass-Clay), was preparing for a board meeting. For several years, the board had been discussing the future of Cass-Clay. In recent years, it had developed a successful regional brand by co-branding its products with upper Midwest professional and collegiate sports teams. The brand marketing efforts had been successful, but it had not enabled the cooperative to offset long-term industry trends with regard to a declining number of dairy cows and members; excess capacity in the upper Midwest dairy industry, which meant price competition for the declining milk supplies; and increased costs due to energy and transportation. The reality is that Cass-Clay was not generating enough income to enable the board to shorten its equity management program and enable it to use its assets efficiently. The cooperative had net income losses in 2004, 2005 and 2006.

During this time period, the board and Keith had considered different options including generating more income off of its value-added brand marketing, reducing its assets base as a means of reducing costs, finding another partner who would provide equity by buying into the cooperative or considering a unification (e.g., merger) with another dairy cooperative. The first option of generating additional income had worked, but Keith and his management team had negotiated as best as possible and believed that they were getting the best possible price in the market. The second option of asset reduction had already been tried, and the remaining assets were valuable due to the integrative nature of their business. The third option was not feasible because an outside investor was not likely to emerge because of Cass-Clay's financial position and because the board was not willing to relinquish governance rights in the cooperative. Thus, Keith had been seeking other opportunities with various other dairy cooperatives. One such partner, Associated Milk Producers, Inc., had emerged and Keith was prepared to discuss the proposal with the board tonight. Regardless of what it decided to do, Cass-Clay's future was going to take a new direction.

Background on Cass Clay Creamery

Cass-Clay Creamery (Cass-Clay) is a dairy cooperative that both bottles milk and processes it into other dairy products. Established in 1934, it originally marketed milk produced by member dairy farms in the Cass County, North Dakota (ND) and Clay County, Minnesota (MN) area. These adjacent counties lie along the middle of the eastern border of North Dakota and western border of Minnesota, respectively, separated by the Red River. Today, Cass-Clay markets milk from members in North and South Dakota, Montana and Minnesota. In recent years, its revenues have been at or above $100 million.

Cass-Clay processes milk into a broad line of products. Fluid milk products include traditional skim, 1%, 2% and whole milk products and chocolate milk. Other dairy products include cottage cheese, chip dips, Romano and Parmesan cheeses, ice cream, yogurt, butter and sour cream. All of its operations occur at facilities in North Dakota, Minnesota and South Dakota, with its headquarters at the Fargo, ND facility. Given the location of these facilities and associated transportation costs, Cass-Clay has traditionally marketed its products to consumers in North Dakota and western Minnesota.

Keith Pagel has been general manager of Cass-Clay since 2000. During his tenure, he and his management team have developed strategies to generate economic benefits for the cooperative's membership. These efforts have been made with a goal to maintain strong ties to its membership and to grow in economic size over time. Keith works with a board of directors. The board is comprised of dairy farmers operating in North and South Dakota, Minnesota and Montana. This nine-member board makes general business policy decisions and represents all member (who are the patrons, members and owners of Cass-Clay) investors in making decisions about investment policies for new equipment, milk purchasing incentives and quantity and timing of giving financial benefits to the general membership.

Due to changes in North Dakota and Minnesota's dairy industry during Keith's tenure, the number of members in the cooperative has declined from a high of approximately 1,300 members to only 137 today. This had reduced the number of producers available to provide equity into the cooperative.

Industrial Structure of Milk Supply and Processing

The primary challenge Cass-Clay faces is to acquire equity capital for purposes of making updates to its aging equipment, most of which were purchased for its facility constructed in 1957. Cooperatives such as Cass-Clay pass earnings on to the users based on level of use and therefore cannot attract equity from a wide group of investors as in other types of firms. Cooperatives usually obtain equity capital from members using three strategies. These include direct investment, retained earnings and retained portions of sales volume-known as equity retains. The amount of funds from these strategies depends on the number of members in the cooperative.

Decline in Size of Dairy Industry in North Dakota and Minnesota

The number of members in the cooperative has been affected by forces controlling milk supply and demand. First, the numbers of dairy farms and dairy cows have persistently declined in Cass-Clay's trade area. Some members have moved their operations to other states. Others have switched from dairy production to more lucrative grain-only or grain and beef farming. Still others have quit farming entirely.

In North Dakota, for example, the number of dairy cows declined from 375,000 head in 1950 to 32,000 head in 2006 (U.S. Department of Agriculture 2008). Total statewide milk production during the same period declined from 1,699 million pounds to 470 million pounds (U.S. Department of Agriculture 2008). The number of dairy farms declined from 2,839 in 1987 to less than 200 in 2002. In Cass County, the number of dairy farms declined from 21 in 1987 to 5 in 2002, with 900 total head in 1987 reduced to 59 in 2002 (U.S. Department of Agriculture 1992, 2002). Similar trends exist in Montana and South Dakota.

The declining numbers of dairy cows and farms have increased the geographic spread of members in Cass-Clay's trade area. This increasing spread has affected Cass-Clay's freight costs and reduced the pool of profits from which it could acquire retained earnings. The cooperative acquires approximately 70 percent of the milk used from only 12 farms. These farms are as far away as eastern Montana, over 350 miles from Fargo; Mandan, about 200 miles west of Fargo; and locations in western Minnesota. The long distances, coupled with increasing fuel costs,

contribute to high freight costs. In an effort to attract large, distant members, the board had maintained a policy of charging all members the same rate for freight costs but recently started charging freight rates in proportion to distance travelled.

The Upper Midwest has had little success at encouraging new producers to enter the dairy industry because of other career opportunities, low profitability, lifestyles and similar issues. Dairy industry leaders, such as Gary Hoffman of the North Dakota Dairy Coalition, make specific efforts to grow the industry in Cass-Clay's trade area. Although a handful of new dairies will be started in North Dakota this year, these efforts are hampered by lifestyle preferences of the next generation of farmers. Many prefer lifestyles that permit vacations and time for pursuits other than farming. The trends in cow numbers and producers appears to be irreversible.

Consolidation of Dairy Processing Industry in North Dakota and Minnesota

These trends have contributed to the consolidation and shrinking of the dairy processing industry in the upper Midwest (Minnesota, Montana, North Dakota and South Dakota). As the number of dairy farms and total number of dairy cows in the state declined, the need for processors decreased. For example, in 1977, 17 plants manufactured dairy products in North Dakota and 72 in Minnesota (U.S. Department of Commerce, 1980). By 2002, only five remained in North Dakota and 44 in Minnesota. In 1977, only ten facilities bottled milk in North Dakota and seven facilities processed butter. Today, two bottling facilities remain, with one owned by Cass-Clay and the other owned by Dean's Foods. One butter producing facility remains, owned and operated by the Pride Dairy Cooperative in Bottineau. Only one cheese plant and one dry milk plant remain in the state. Cass-Clay had adjusted to these changes by purchasing the assets of other cooperatives or private companies in an effort to increase membership and enlarge the geographic market Cass-Clay served. This occurred in the 1970s and 1980s by purchasing companies in cities throughout the state such as Grand Forks, Jamestown, Minot, Mandan, Medina, Rugby and Valley City, as well as purchases in South Dakota and Minnesota. These had the effect of increasing the number of members and expanding the territory Cass-Clay could market its products.

Competitors of Cass-Clay

The cooperative supplies milk products in competition with several processed dairy product producers (Table 1). These include other cooperatives and investor-owned firms. Major companies in the North Dakota and Minnesota geographical market include Bongards' Creameries, First District Association, Swiss Valley Farms, Foremost Farms, Kemps, Land O'Lakes, Dairy Farmers of America, Associated Milk Producers and Hastings Creamery. Bongards' Creameries (Bongards, MN) operates a plant in Bongards and owns a plant in Perham. The cooperative manufactures various dairy products and has 421 patrons with another 2,000 retired equity holders. In 2007, the cooperative wrote down the value of its equity by almost 66 percent to account for almost $20 million in losses that had accrued since 1998 but had not been passed through to the members.

First District Association (Litchfield, MN) operates a plant in Litchfield. The cooperative has 803 patrons and ten member creameries (700 patrons in these creameries) in west central and northeastern Minnesota, northeastern Iowa and western Wisconsin. The cooperative operates with no long-term debt. The name came from the fact that it was the first district in the

Minnesota Cooperative Creameries Association that began marketing the sweet cream butter under the name “Land O' Lakes.” It later began marketing under its own brand name of “Fieldgate.”

Swiss Valley Farms (Davenport, IA) operates plants in southeastern Minnesota, northeastern Iowa, northern Illinois and southwestern Wisconsin. It has 867 patrons and produces a broad line of differentiated dairy products under its own retail label, Swiss Family Farms, as well as private label and ingredient markets.

Associated Milk Producers Inc. or AMPI (New Ulm, MN) has 3,400 patrons in Iowa, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota and Wisconsin. It produces a broad line of dairy products for the private label market. Foremost Farms USA (Baraboo, WI) has 3,697 patrons in Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio and Wisconsin. Its retail brands include Golden Guernsey Dairy®, Morning Glory™ and Grip It, Sip It.™ brands. Kemps LLC (Chelsea, MA) is owned by HP Hood LLC. It has fluid milk processing plants in Rochester, Minneapolis and Duluth (MN); Rapid City (SD); and Cedarburg (WI). Its brands include Kemps, Hood, Hagan, Green’s and Arrowhead. Hastings Cooperative Creamery (Hastings, MN) had 128 members.

These cooperatives can be described as regional, with almost all of the membership and business activity concentrated in a particular area, such as the Midwestern United States. Two other cooperatives, Land O'Lakes, Inc. and Dairy Farmers of America, Inc., are national in scope. Land O'Lakes, Inc. (Arden Hills, MN) is a diversified cooperative with 4,610 dairy producers. Its dairy products are sold under the Land O’Lakes label and much of its milk collection and processing operations are conducted through long-term supply agreements with different companies. Dairy Farmers of America, Inc., or DFA, (Kansas City, MO) has over 11,306 dairy producers, supplying almost a third of the domestic U.S. fluid milk market. It owns the Borden and Golden retail brands.

Changes in Demand: Industrialization and Population

The cooperative is also faced with changes in demand for dairy products in the area. The single largest source of change in demand for dairy products is the changing nature of the way these products flow from farms to consumers. Traditionally, retailers have purchased dairy products from regional producers. Increasingly, vertical relationships between dairy product producers, such as Cass-Clay and its members, and retailers, such as grocery outlets and institutional food outlets, govern the flow of these products. To improve the coordination and flow of these products among participants, dairy product retailers are increasingly forming relationships with a single producer. Dairy cooperatives are responding to this by forming marketing relationships with larger companies. For example, in 2002 Land O’Lakes Inc. and Dean Foods Company (Dean’s) formed an alliance to allow the members of Land O’Lakes to market their milk throughout Dean’s nationwide system of retail customers.

Another source of increased demand is population. Although per capita milk product disappearance in the United States has remained steady since 1982 (Table 2), the combination of steady population levels in North Dakota and population growth in Minnesota, has increased the total demand for all dairy products in the North Dakota and Minnesota region.

Capital Improvements

Cass-Clay has responded to these changes in demand by investing millions in capital updates in its facilities. Updates to its Fargo facility include a new freeze tunnel, which freezes ice cream more rapidly and preserves freshness better than older technology; high-speed bottling lines and material-handling equipment; and enlarging the cooler to three times its original size. At its Mandan, ND facility, updates include a cooler and loading dock for speedier delivery truck loading. New boilers have been installed in its Hoven, S.D. cheese-processing facility. These investments totaled more than $5 million between 2002 and 2004. These improvements are coupled with commitments from the board of directors to encourage facility update expenditures of about $1 million annually (Thompson 2004). These improvements and policies together are intended to expand Cass-Clay's volume of production and efficiency of distribution.

Branding

Production Costs, Milk Prices and Government Policy

Cass-Clay contributes to the welfare of its member farmers by providing a guaranteed market for their output. Declines in real raw milk prices and increasing dairy input costs have also contributed to the cooperative's difficulties in obtaining equity from the cooperative's members. For example, the relatively small dairy farm size forces North Dakota and Minnesota members to have relatively high milk production costs, which many dairy farms in other parts of the nation reduce through consolidation (McDonald et al. 2007). A nationwide study of costs and returns in 2005 indicated that a typical farm receives $17.03 in gross production value per hundredweight of milk but receives net returns of -$1.43 after total production costs and allocated overhead are considered. Losses are not uniform across herd size, however. Farms with fewer than 50 head, for example, received net returns of -12.22 in 2005 per hundredweight of milk (Table 3).

Milk prices are affected by government policy. Congress has passed legislation establishing federal milk marketing orders. These regulations are intended to promote the orderly marketing of milk in sufficient quantity to meet consumer demand at reasonable prices. According to Miller and Blayney (2006), more than 80 percent of all milk is marketed under these and other regulated pricing systems. In 2006 and 2007, prices for milk received by farmers was relatively low (Table 4), having declined steadily since 1997 from $13.34 to $9.71 per hundredweight for milk types.

Marketing orders have recently had the effect of increasing the supply of milk available in North Dakota and further depressing its price. Companies and cooperatives operating in North Dakota and Minnesota that have chosen to participate in the policies declared in Federal Milk Marketing Order #30 have found they have been harmed by some of it policies. The Order permits handlers of "distant" milk to pick and choose when to participate in the marketing pool created by the Order, thus drawing revenue funds from the marketing area. Sue Beitlich, president of the Wisconsin Farmers Union, indicated that "over twenty counties in Idaho delivered milk into the Upper Midwest Milk Marketing Order in December 2003, with one particular county in that state ranking number one overall in delivery into the order. More than 180 producers from Idaho delivered more than 260 million pounds of producer milk, representing 12 percent of the Order's market during the same period," reducing the payments made to dairy producers in the North Dakota, Minnesota and Wisconsin area (Beitlich 2004).

Cooperatives and Branding

To increase margins from dairy product sales, Cass-Clay began an intensive brand marketing program. Public efforts began in earnest in 1996, with the release of its current "sunburst" design logo. Since that time, the logo has been used on many of its products and on its publicly-visible equipment. In total, 35 percent of the annual product volume produced by Cass-Clay is packaged in a branded container. By 2004, Cass-Clay spent about $1 million annually in its advertising (Thompson 2004). This was expensive to maintain and with declining profitability and increased competition, it was doubtful whether Cass-Clay could continue such expenditures in the future. The fact that Cass-Clay chose to brand several of its products is interesting because of its cooperative business status. Both Beverland (2007) and Hardesty (2005) noted that because of the traditional cooperative principles of user benefits, user financing and user control, few cooperatives have nationally prominent brand names. For agricultural cooperatives, the user-benefit principle tends to contribute to seasonal product availability and inability to provide long-term returns to members who invest in brand building. The user-financing principle contributes to a cooperative's comparative limited access to capital to invest in branding. The user-control principle may lead to a homogenous board of directors with no brand-building experience.

Having a cooperative develop its own brand can benefit consumers, however. Haller (1992) found that cooperatives that branded their own cottage cheese tended to price lower than competing brands, had higher sales volume than other brands in which their products were sold and were more aggressive in merchandising their brands than all other types of businesses except in-store brands. Hence, branding may allow cooperatives to increase sales by increasing the distribution of their products within current markets.

Success with the Cass-Clay Brand

Cass-Clay has been able to use its branding strategy to broaden its geographic product distribution. Cass-Clay brand products have obtained shelf space in stores where they had not sold previously, such as in SuperValu stores operating under the Cub brand in the Twin Cities market.

The brand has also gained significant recognition through its relationship with the Minnesota Vikings football team, which began in 2003. Cass-Clay worked with Gameday Sports Company to align its brand with the Minneapolis football franchise. Now several Cass-Clay products feature the official team logo, including ice cream flavors like Touchdown Toffee and Victory Vanilla, chocolate milk and French onion snack dip. The relationship has also enabled Cass-Clay to develop business relationships with clients.

Cass-Clay has formed relationships to promote its brand through other sports teams and venues. In 2005, Cass-Clay began selling products at the Excel Energy Center, home of the Minnesota Timberwolves. Other relationships exist with North Dakota State University and the University of North Dakota, featuring these schools in connection with ice cream flavors, Bison Crunch and Championship Sioux, respectively. Alumni support exists for relationships with schools in western North Dakota and Minnesota.

Cass-Clay also enhanced its brand identity by offering products differentiated by packaging innovations. The company developed an exclusive 97-ounce container for chocolate milk, a unique volume among the typical selections of products. Other products have received containers that are more lively and colorful than previous designs. Cass-Clay also followed changes in ice cream packaging by promoting its line of "scrounds," ice cream containers with rounded edges, making it easier for removal of all contents. Together all of these efforts contributed to a well-respected brand by consumers in all geographic markets Cass-Clay participates in.

The Decision Faced by the Board

Despite these successful brand marketing efforts, Cass-Clay was still a regional dairy cooperative with a niche. However, this niche was due to contracts with these sports teams, which were renegotiable in the future. Other competitors were keen to have access to similar branding efforts, and it was conceivable that Cass-Clay could lose these contracts in the future to a larger dairy company.

Keith had studied other dairy competitors in the Upper Midwest to find possible candidates for a unification. The board desired firms that had a similar organizational culture and would preserve Cass-Clay's brand marketing efforts. In addition, the board wanted to ensure that its members had representation on the board of directors. Finally, the board was sensitive to the fact that its profitability had declined in recent years, but it still wanted to preserve the equity of its past members who had helped provide equity in the past.

One company, Associated Milk Producers Inc. (AMPI), attracted Keith's attention. AMPI, based in New Ulm, Minnesota, is a dairy cooperative that is owned by dairy farmers in Iowa, Minnesota, Nebraska, South Dakota and Wisconsin. While it competed with Cass-Clay, AMPI did not have members in Cass-Clay's trade territory. At the end of 2006, AMPI had approximately 3,400 members and processed 5.1 billion pounds of member milk. By contrast, Cass-Clay had 172 member farms and processed 0.3 billion pounds of member milk (Jackson 2007). Sales of AMPI are now approximately $1 billion annually, making it one of the ten largest milk processing cooperatives in the country. AMPI markets a full line of dairy products and ingredients for the retail, food service and food ingredient sectors, including cheese, butter, instant milk, shelf-stable cheese and pudding, and other items. In addition to commercial and institutional sales, it also retails some of its products under numerous private labels.

As a cooperative, AMPI shares Cass-Clay's member-focused philosophy. As a result, Keith believed that if Cass-Clay's assets were sold to AMPI, AMPI would likely continue to operate existing facilities and to guarantee a market for milk produced by member dairies. Keith feared that acquisitions by other companies would lead to a splintering of the parts of the company into joint ventures with other firms. Such a division would tend to be confusing to the membership and remove any sense of member business control.

AMPI liked the idea of acquiring Cass-Clay for purposes of diversification. AMPI primarily produces cheddar cheese and other products for private labels. Cass-Clay, in contrast, bottled fluid milk and produced several other branded dairy products. AMPI viewed the acquisition of Cass-Clay as an opportunity to expand its product line and expand its retail presence by using an

already-developed and well-recognized name. Since significant expenses are required to develop a brand, AMPI intended to take advantage of the already-existing value of the Cass-Clay brand.

AMPI's board of directors was prepared to acquire Cass-Clay (with a proposed date of May 1, 2007) and establish it as its Fargo division. The equity of Cass-Clay would be exchanged with AMPI, net of passed losses from previous years which had not yet been allocated to Cass-Clay's members' equity. The acquisition would fold Cass-Clay's equity management program into AMPI's program. The net result was that it would reduce the revolving period from 19 to 12 years because AMPI was on a 12-year revolving fund compared to Cass-Clay's 19 year revolving fund. Another benefit that the board liked was that AMPI would make lump sum equity payments over five years to any retired producer over the age of 65.

The acquisition also generated economies of scale. Production costs declined for Cass-Clay, by almost one-third in some cases, relative to costs prior to the acquisition. Lower costs would result in increased profitability and have more income available to revolve equity and invest in new assets.

The acquisition created other financial benefits. The acquisition generated economies of scope, making available new and increased levels of professional resources, such as technical and financial expertise, which members of Cass-Clay did not previously have access to. The acquisition also enabled members to take advantage of selling whey, a byproduct of milk processing into dairy products. Sales into this market added to the revenues of Cass-Clay members, as dry whey sells for approximately $0.44 per pound.

AMPI was prepared to create two temporary seats on its twenty-four member board of directors in order to accommodate two members of Cass-Clay. After two years, AMPI's board will return to its original size and reallocate its seats based on the number of members within each of its divisions. Thus, membership would have representation in Cass-Clay's trade territory.

Summary

There were many benefits to the proposed acquisition by AMPI. Keith had developed a list of issues to discuss with the board. These were

1. AMPI desired to maintain the Cass-Clay brand. However, now the brand might include milk from all AMPI members, including those outside the new Fargo division.
2. Cass-Clay had a long-established corporate giving program in their member communities. However, this would now be part of AMPI's corporate giving program. It was likely that there would be changes in philosophy.
3. To best optimize the entire system of AMPI, the AMPI board of directors might decide to introduce changes in transportation allowances and pricing that might be advantageous and disadvantageous to producers in the new Fargo division.
4. The new 24-member board of directors for AMPI would include as many as two directors from its Fargo division. This was understandable since Cass-Clay was much smaller than AMPI.
5. Cass-Clay's success in recent years was due to its relationships and contracts with local sports teams, larger warehouses and wholesale groups. This required marketing expenditures.

However, Cass-Clay was losing money despite such branding. AMPI might decide to reduce such expenditures to increase profitability.

All of these issues were important to Cass-Clay's directors and the members it represented who provided the equity capital and patronized and used the cooperative to market its milk. It was important that the effect of these changes on Cass-Clay's membership be analyzed because cooperative directors represented the members.

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Table 1. Name and size of dairy product producers selling in Cass-Clay's trade area, 2007.

Rank	Name and Headquarter Location	Pounds of Milk (billions)	Number of producers
1	Dairy Farmers of America, Kansas City MO	37.599	11,306
3	Land O'Lakes Inc., St. Paul MN	12.260	3,178
7	Associated Milk Producers Inc., New Ulm MN	5.100	3,400
8	Foremost Farms USA, Baraboo WI	4.859	3,697
16	Swiss Valley Farms Co., Davenport IA	1.402	867
20	First District Association, Litchfield MN	1.246	803
28	Bongards Creameries, Bongards MN	0.807	421
40	Cass-Clay Creamery Inc., Fargo ND	0.352	388
45	Sunrise Ag Cooperative, Buckman MN	0.196	169
50	Hastings Cooperative Creamery Association, Hastings MN	0.198	128

Source: Hoard's Dairyman, October 17, 2007.

Table 2. U.S. per capita consumption of all dairy products.

Year	U.S. population, July 1 (Millions)	Total Disappearance (Million lbs)	Per capita consumption (lbs)
1982	232.188	128,747	554.5
1983	234.307	134,206	572.8
1984	236.348	137,505	581.8
1985	238.466	141,551	593.6
1986	240.651	142,313	591.4
1987	242.804	145,963	601.2
1988	245.021	142,721	582.5
1989	247.342	139,455	563.8
1990	250.132	142,063	568.0
1991	253.493	142,895	563.7
1992	256.894	144,517	562.6
1993	260.255	148,153	569.3
1994	263.436	152,685	579.6
1995	266.557	153,597	576.2
1996	269.667	152,695	566.2
1997	272.912	154,794	567.2
1998	276.115	157,988	572.2
1999	279.295	163,139	584.1
2000	282.403	167,246	592.2
2001	285.335	167,351	586.5
2002	288.216	168,996	586.4
2003	291.089	172,895	594.0
2004	293.908	174,273	592.9
2005	296.639	178,146	600.5

Source: USDA/Economic Research Service. Data last updated Feb. 15, 2007.

Includes all commercial sales and USDA donations.

www.ers.usda.gov/Data/FoodConsumption/spreadsheets/dymfg.xls

Table 3. Dairy costs of production, by herd size, 2005.

	Enterprise size (number of milk cows)					
	<50	50-99	100-199	200-499	500-999	>999
Mean herd size	35	69	133	295	666	2,083
Output per cow (lbs)	15,055	17,149	18,228	19,487	20,719	20,195
	Dollars per hundredweight					
Total operating costs	12.30	12.94	11.51	11.31	11.07	9.74
Purchased feed	3.60	3.75	4.12	5.00	5.64	5.99
Homegrown feed	5.02	5.07	4.06	3.01	2.58	1.47
Grazed feed	0.41	0.15	0.11	0.10	0.02	0.01
Allocated overhead	17.79	12.56	9.31	6.61	5.00	3.85
Hired labor	0.50	0.80	1.34	1.84	1.80	1.61
Unpaid labor	10.60	6.10	6.13	1.34	0.54	0.17
Capital recovery	5.26	4.56	3.89	2.55	2.03	1.66
Total costs	30.09	25.50	20.82	17.92	16.07	13.59
Gross value of production	17.87	17.56	17.20	17.25	16.56	16.54
Net returns	-12.22	-7.94	-3.62	-0.67	0.49	2.95

Source: McDonald et al., 2007.

Table 4. Prices received by farmers, all milk.

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual	Deflator	Real Price
			Dollars per hundredweight				
1997	13.50	12.70	12.63	14.53	13.34	100.0	13.34
1998	14.70	13.83	15.53	17.93	15.50	106.1	14.61
1999	15.93	12.80	14.83	13.83	14.35	109.7	13.08
2000	11.87	12.07	12.63	12.67	12.31	109.3	11.26
2001	13.33	15.43	16.60	14.50	14.97	114.1	13.12
2002	13.10	12.03	11.33	11.97	12.11	109.9	11.02
2003	11.37	11.00	13.30	14.40	12.52	117.5	10.65
2004	14.07	18.53	15.50	16.07	16.04	124.4	12.90
2005	15.67	14.83	14.97	15.10	15.14	127.0	11.92
2006	13.53	12.00	12.23	13.87	12.91	125.5	10.28
2007	13.95	13.10	13.35	14.05	13.61	140.1	9.71

Deflated to 1997 dollars

http://future.aae.wisc.edu/data/monthly_values/by_area/316?area=US&tab=prices&grid=true

http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1207