Consolidation and Concentration in the U.S. Dairy Industry

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Summary

The changing structure of U.S. agriculture has generated concerns about reduced competition in a wide variety of agricultural products markets, including dairy. Two primary areas of concern in the dairy industry are consolidation—the shift to fewer and larger firms—and industry concentration—the extent to which a small number of firms control most of the sales. On August 5, 2009, the Obama Administration announced that the U.S. Department of Agriculture (USDA) and the Department of Justice would hold several public workshops to consider competition issues affecting agriculture and the appropriate role for antitrust and regulatory enforcement. A workshop on the dairy industry is scheduled for June 25, 2010, in Madison, WI.

Consolidation has been a long-term trend in agriculture. Across the industry, including the dairy sector, rising productivity has led to fewer and larger operations along the production and marketing chain, including farms, cooperatives, processors, and retailers. Larger operations tend to have lower per-unit costs. As firms reduce their costs, they become more competitive and can increase sales and market share at the expense of less profitable firms. As a result, fewer dairy farms are needed to produce the same amount of milk. Firm size is a limiting factor for growth, however, once the gains to economies of scale have been exhausted.

At the farm level, the number of farms continues to decline, although at a much slower pace during the last decade than in previous periods. Consolidation at the cooperative and processor levels has followed a similar path, in order to offset market power of large downstream entities and to satisfy demands from retailers to serve them more efficiently.

Concentration has also been increasing in the dairy industry. Nearly all segments of the industry have become more concentrated over time. The primary concern many have with concentration is that it may reduce competition in the marketplace for agricultural and food products and result in market power (i.e., the ability of a firm to influence prices), putting at a disadvantage some segment of the population, such as producers or consumers. However, concentration may also result in efficiency gains, whereby cost savings are passed on to consumers through lower retail prices, which in turn can generate additional demand for commodities and benefit farmers. Another concern is how concentration affects price transparency in markets for dairy products and milk.

In summarizing research findings for several agricultural industries, including the dairy industry, the Government Accountability Office concluded that most of the studies it reviewed found either no evidence of market power, or efficiency effects that were larger than the market power effects of concentration. However, the agency said experts generally agreed that concentration is likely to increase in the future, potentially raising greater concerns about market power and the manipulation of commodity or food prices.

U.S. antitrust laws (specifically the Sherman Act and the Clayton Act) are concerned with competition in markets and not the protection of any individual competitor. These laws proscribe unlawful mergers and business practices in general terms, leaving courts to decide which are illegal based on the facts of each case. Two current court cases against Dean Foods, the largest fluid milk processor in the United States, highlight the ongoing concern about consolidation in the U.S. dairy industry.

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Introduction

The changing structure of U.S. agriculture has generated concerns about reduced competition in a wide variety of agricultural product markets, including dairy. Two primary areas of concern in the dairy industry are consolidation—the shift to fewer and larger firms—and industry concentration—the extent to which a small number of firms control most of the sales.

On August 5, 2009, the Administration announced that the U.S. Department of Agriculture (USDA) and the Department of Justice would hold several public workshops to consider competition issues affecting agriculture and the appropriate role for antitrust and regulatory enforcement. A workshop on the dairy industry is scheduled for June 25, 2010, in Madison, WI.[1]

This report provides background on the structure of the U.S. dairy industry and an overview of dairy issues. The first section briefly discusses recent financial stress for dairy farmers and the historical development of the dairy industry. The second section reviews disparate movements in farm and retail prices for milk and dairy products. The third section examines current industry structure in terms of consolidation and concentration at different market levels: farm, cooperative, processor, and retail. The fourth section considers the economic effects of consolidation and concentration. Finally, U.S. antitrust law is outlined, along with recent antitrust activity directed at the dairy industry.

Financial Stress for Dairy Farmers

The financial stress in the dairy industry in 2009, brought on largely by sharply lower milk prices, activated standing federal programs to support dairy farmers. In calendar year 2009, the federal government spent more than $1 billion to support the industry through various dairy programs. Following appeals from dairy farmers for more financial assistance, Congress granted $350 million in October 2009 in the form of supplemental payments as well as government purchases of dairy products for domestic feeding programs.

Despite the government payments and program support, the number of U.S. dairy farms declined during 2009 by 3% to 65,000 farms as of December 31, 2009. During the same period, the number of dairy cows fell, and the subsequent decline in milk production, along with a simultaneous rebound in foreign demand for dairy products, lifted average farm milk prices, estimated at $15.10 per hundredweight for March 2010, up from $11.80 per hundredweight a year earlier. (Prices averaged $14.68 per hundredweight during 2000-2009.) Still, financial concerns remain for dairy farmers who lost significant amounts of farm equity during the milk price collapse and continue to contend with feed prices that are well above historical averages.[2]

[1] U.S. Department of Agriculture, "USDA and Justice Department to Hold Public Workshops to Explore Competition Issues in the Agriculture Industry," press release, August 5, 2009, http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1RD?printable=true&contentidonly=true&contentid=2009/08/0368.xml. A list of dates and locations of the other agriculture workshops is available at http://www.justice.gov/atr/public/workshops/ag2010/index.htm.

[2] The farm price of corn for March 2010 was estimated by USDA at $3.49 per bushel, compared with an annual average of $2.75 per bushel during 2000-2009. In 2009, monthly corn prices averaged $4.01 in June, $3.60 in July, and $3.33 in August.

The financial stress of 2009 and similar episodes over the years have led the industry and Members of Congress to reconsider the options available to handle fluctuations in milk prices and income for dairy farmers.[3] For more information on dairy policy options, see CRS Report R41141, *Previewing Dairy Policy Options for the Next Farm Bill*. Financial stress in the dairy sector has also motivated the Obama Administration and some Members of Congress to examine issues of consolidation and concentration in the dairy industry.

Development of the U.S. Dairy Industry

Over the last 100 years, the U.S. dairy industry has evolved from a collection of local producing and consuming areas to a national milk and dairy product market, due in part to significant advancements in milk marketing, particularly the ability to transport milk more efficiently over long distances. The early history of the dairy industry was also shaped by significant government intervention in the market, which continues today.[4]

Marketing and Policy History

In the mid-1850s, most milk was consumed by families on farms or fed to livestock; some was sold off farms but only for very local use. As urban areas grew, milk was sent to processors to supply these areas with both fluid and manufactured products. By the turn of the 20th century, many producers had banded together into cooperative associations to bargain with milk handlers (fluid milk processors) as a way to offset handler market power. In the early 1900s, dairy farmers increasingly looked toward cooperatives to market their milk, specifically by negotiating with milk buyers using collective bargaining. The Capper-Volstead Act of 1922 confers limited exemption from antitrust liability to farmer cooperatives (see "U.S. Antitrust Law," below).

By 1925, handlers were paying farmers for fluid-grade milk according to its use (fluid or manufactured products). This concept, known as "classified pricing," is still in use today. Milk for fluid use is valued at the highest level, reflecting higher transportation and handling costs.

When the Great Depression hit, demand dropped sharply and the classified pricing system broke down. Federal milk marketing orders (FMMOs) were eventually established (and continue to function today) to stabilize the market and help equalize the market power of dairy farmers with dairy processors. Another motivation for establishing FMMOs was to ensure that consumers had adequate and dependable supplies of milk at reasonable prices. During this period, legislators also enacted import quotas on dairy products to protect producers from foreign competition. Eventually, during World War II, demand increased for farm commodities, including milk.

In the late 1940s, the government began supporting the price of milk (and other farm commodities) to protect against price declines through the dairy price support program, now

[3] For information on dairy pricing issues and federal dairy policy, see CRS Report R40903, *Dairy Pricing Issues*; and CRS Report R40205, *Dairy Market and Policy Issues*.

[4] Material for this section is drawn from Andrew M. Novakovic, "Economic History of Dairy Markets," presentations at the 16th Annual National Workshop for Dairy Economists and Policy Analysts, Washington, DC, April 24, 2009, http://www.cpdmp.cornell.edu/CPDMP/Pages/Workshops/Washington09/PDFs/Novakovic.pdf; and Alden C. Manchester, *The Public Role in the Dairy Economy—Why and How Governments Intervene in the Milk Business* (Boulder, CO: Westview Press, Inc., 1983).

called the Dairy Product Price Support Program (DPPSP). In 1985, an export subsidy program (Dairy Export Incentives Program or DEIP) was added to national dairy policy. Finally, a counter-cyclical income program (Milk Income Loss Contract or MILC) was authorized beginning in 2002. For more information on dairy programs, see CRS Report R40205, *Dairy Market and Policy Issues*.

Advancements in Milk Marketing

Advancements in milk marketing have dramatically changed the U.S. dairy industry over the last century. In the early 20th century, raw milk was transported by truck over short distances and by rail over longer distances (with milk packed in ice and sawdust) to processing plants. Distances ranged from just a few miles in "local" markets to several hundred miles in large markets such as New York, Boston, and Chicago. Milk was "bottled" mostly for home delivery, with only small amounts sold in stores.

Home delivery of milk characterized fluid milk marketing for decades, which highlights the historical "local" nature of production and consumption of fluid milk. However, throughout the second half the of 20th century, several factors combined to reduce the cost of moving milk from producers to consumers, and ensuring a transition to what is now a national milk and dairy product market.[5] These factors included improved roadways (e.g., the interstate highway system) and larger and faster trucks for bulk transport of milk (tanker trucks). By the 1970s, most retail milk was purchased in stores (or through food service), primarily in lightweight plastic or paper containers.

Bulk milk is now shipped, perhaps thousands of miles by truck, when market demands exceed local farm milk production. Similarly, individual dairy manufacturing plants ship products such as cheese, yogurt, and flavored milk to food distribution centers located across the country.

Farm and Retail Price Movements

A long-standing issue during the development of the dairy industry, and in other parts of agriculture, has been the relationship between farm and retail prices. Most recently, as farm prices of milk and other agricultural commodities fell in late 2008, retail food price declines were slow to follow. This decreased the farm value share—the portion of the retail dollar that flows to the farmer—and caused some in Congress to question whether processors and retailers were contributing to economic stress in the agricultural sector, particularly for dairy farmers.

In recent decades, across the agricultural sector, several factors have led to a declining farm share of the retail food dollar. These factors include gains in agricultural productivity, growth in demand for value-added products, and changes in food marketing. The farm share of the retail food dollar for all farm products (not just dairy) was 41% in 1950, a time when many food products were sold with much less value-added processing or packaging than today. In 2006, USDA estimated that the average farm-value share of all food products of U.S. farm origin

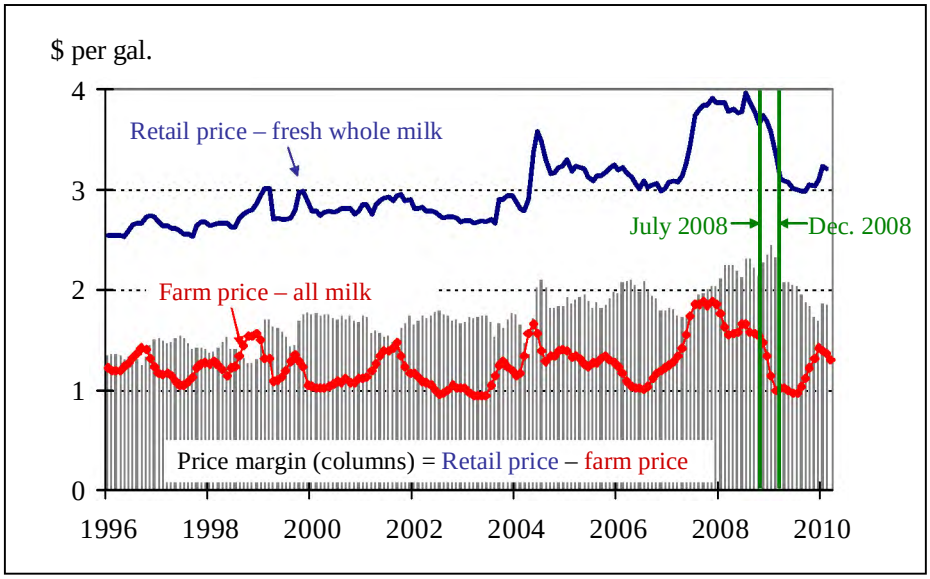
[5] Note that the national market for fluid milk is affected by federal milk marketing orders, which help maintain local milk production through a system of minimum prices that processors must pay for farm milk in federal marketing order areas.

consumed was 18.5%.[6] The remaining 81.5% was accounted for by a host of marketing factors, including labor (processing and retail sectors), packaging, profit, transportation, and energy.

For milk and dairy products, the farm share is approximately one-third of the retail dollar, which is greater than the all-food average, largely because other food categories such as cereals and bakery products have a higher overall degree of processing. While the farm share of the retail price bounces around from year to year, the overall trend for milk and dairy products was generally flat between 2000 and 2008. By product category, the farm-share trend was flat for whole milk, butter, and ice cream, with a slight uptrend for cheddar cheese.[7]

Examining changes in monthly farm and retail prices during 2008 and early 2009 indicates a decline in the farm-value share of retail product values and a widening of the marketing margin. Between July 2008 and December 2008, the farm price of milk reported by USDA fell by $0.33 per gallon (**Figure 1**). Meanwhile, the average retail milk price fell only $0.28, with the difference between the retail and farm price (i.e., the marketing margin) increasing to $2.35 per gallon. In January 2009, the difference between the average retail price of milk and the farm price of milk reached a record-high $2.43 per gallon.[8]

Figure 1. Monthly Farm and Retail Milk Prices



Sources: U.S. Department of Agriculture (all milk farm prices) and Bureau of Labor Statistics (retail prices).

Notes: Farm price is converted from hundredweight to gallons using a factor of 8.6 lbs. per gallon.

[6] See CRS Report R40621, *Farm-to-Food Price Dynamics*, by (name redacted). The report examines in detail the linkage between farm and retail food prices, including the nature and extent of price transmissions such as time lags between changes in farm prices and retail prices.

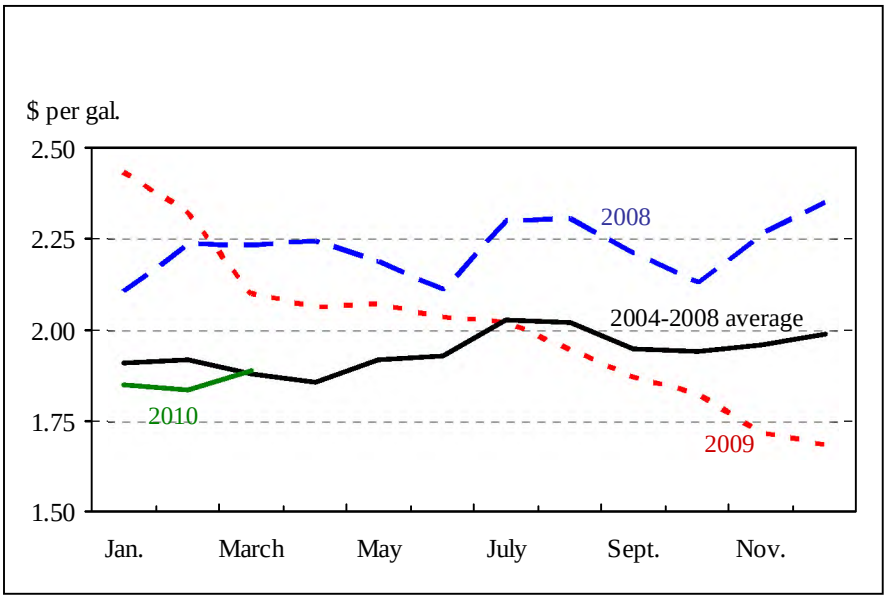
[7] U.S. Department of Agriculture, *Dairy Basket data*, http://www.ers.usda.gov/Data/FarmToConsumer/Data/2008_dairy_basket.xls.

[8] Note that this analysis compares the farm price for all milk (not product-specific) with the retail price for a specific product (fluid milk). Minimum prices for Class I (fluid products) could be used as an alternative to farm prices, but minimum prices exclude over-order premiums paid to farmers. Other data series for cooperatives incorporate over-order premiums.

Throughout 2009, however, amid lower costs for farm milk and other inputs (e.g., energy and transportation), retailers reduced their prices and the difference between farm and retail prices declined sharply. The difference dropped to $1.69 per gallon in December, which is more than $0.25 per gallon below the recent five-year average margin (**Figure 2**).[9] In early 2010, farm prices weakened slightly and the price spread returned to the five-year average level.

Figure 2. Fluid Milk Price Margin

(average retail milk price minus farm milk price)



Source: CRS, using data from U.S. Department of Agriculture (farm prices) and Bureau of Labor Statistics (retail prices).

Notes: Margin is retail price minus the all-milk farm price, with farm price converted from hundredweight to gallons using a factor of 8.6 lbs. per gallon.

As described in CRS Report R40621, *Farm-to-Food Price Dynamics*, time lags in retail price response to farm price changes are generally months in length, even for perishables like milk. Another characteristic of food markets is that adjustments in retail prices from higher farm prices occur faster and with greater pass-through to the consumer than adjustments to decreases in farm prices, an economic phenomenon often referred to as "sticky" retail food prices. That is, retail prices follow commodity prices upward rapidly, but fall back only slowly and partially when commodity prices recede.

Economists have noted that certain aspects of consumer behavior (such as strong consumer store preference and responsiveness to high food prices by higher-income consumers), as well as store inventory management and retailing strategies, may limit retail prices from adjusting fully to

[9] Data are from U.S. Department of Agriculture (farm prices) and Bureau of Labor Statistics (retail prices). The discussion of farm and retail prices in this section is simplified for illustration purposes. For a more detailed discussion on dairy prices, including important factors such as geography and quality, see Andrew Novakovic and Esther Washburn, "Farm and Retail Milk Price Relationships in New York," Briefing Paper Number 08-01, July 2008, http://cpdmp.cornell.edu/CPDMP/Pages/Publications/Pubs/BP%2008-01.pdf.

downward farm price movements. As a result, these types of price movements do not necessarily imply abnormal or excessive market power by the retailer.

Recent economic research has also found that the competition effects of supermarket services can result in stores attracting less price-sensitive consumers.[10] For retail stores that differentiate themselves from competitors by offering additional services (e.g., banking, restaurant, pharmacy) rather than through prices, consumers might pay more for milk. In these cases, there can be a "disconnect" between farm and retail prices of agricultural products.

Dairy Industry Structure

Consolidation has been a long-term trend in agriculture. Across the industry, including the dairy sector, rising productivity has led to fewer and larger operations along the production and marketing chain, including farms, cooperatives, processors, and retailers. Larger operations tend to have lower per-unit costs. As firms reduce their costs, they become more competitive and can increase sales and market share at the expense of less profitable firms. As a result, fewer dairy farms are needed to produce the same amount of milk. Firm size is a limiting factor for growth, however, once the gains to economies of scale have been exhausted.

At the farm level, the number of operations continues to decline, although at a much slower pace during the last decade than in previous periods. Consolidation at the cooperative and processor level has followed a similar path, in order to offset potential market power of large retailers and to satisfy demands from retailers to serve them more efficiently.[11]

Concentration—the extent to which a small number of firms controls most of the sales or purchases—has also been increasing in the dairy industry. Nearly all segments of the dairy industry have become more concentrated over time.[12]

Farms

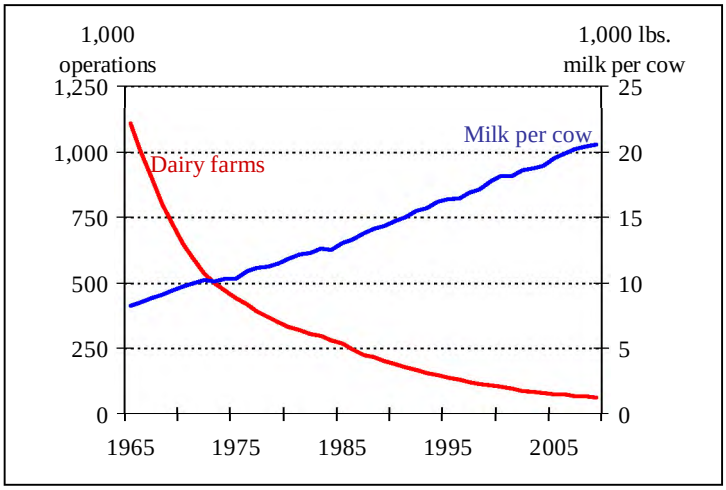
Increased dairy cow output and advances in dairy farm technology and management have led to a sharp reduction in the number of dairy farms (**Figure 3**). Annual losses averaged 96,000 operations in the late 1960s and 37,000 in the 1970s. In recent years, the annual drop in dairy farm operations has slowed to about 2,000 to 5,000 farms per year. Operations totaled 65,000 on December 31, 2009.

[10] Alessandro Bonanno and Rigoberto A. Lopez, "Competition Effects of Supermarket Services," *American Journal of Agricultural Economics*, vol. 91, no. 3 (August 2009), pp. 555-568.

[11] Don P. Blayney and James Miller, "Concentration and Structural Change in Dairy Processing and Manufacturing," paper presented to "Looking Ahead ... or Looking Behind?" 10th Annual Workshop for Dairy Economists and Policy Analysts, Memphis, TN, April 23-24, 2003, http://www.dairy.cornell.edu/CPDMP/Pages/Workshops/Memphis03/Blayney/. See also Phil R. Kaufman, *Consolidation in Food Retailing: Prospects for Consumers & Grocery Suppliers*, U.S. Department of Agriculture, Economic Research Service, Agricultural Outlook, August 2000, pp. 18-22, http://www.ers.usda.gov/publications/agoutlook/aug2000/ao273.pdf.

[12] U.S. Department of Agriculture, *Economic Effects of U.S. Dairy Policy and Alternative Approaches to Milk Pricing*, report to Congress, Washington, DC, July 2004, p. 19, http://www.usda.gov/documents/NewsReleases/dairyreport1.pdf.

Figure 3. Dairy Farms and Productivity
(decline in farm numbers is offset by rising productivity)

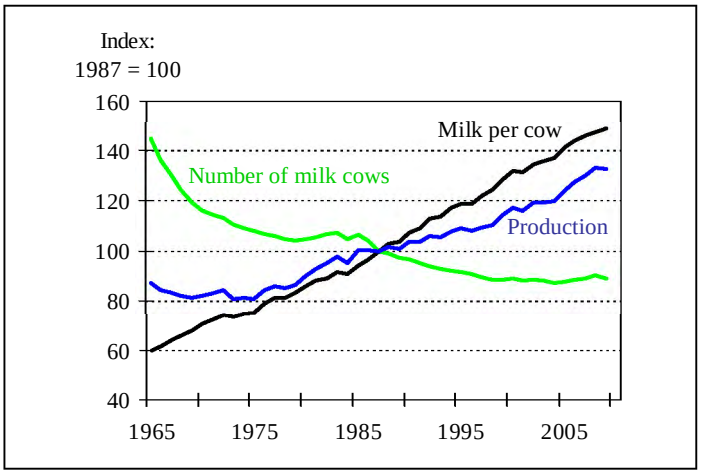


Source: U.S. Department of Agriculture, National Agricultural Statistics Service "Quick Stats."

Notes: Number of dairy operations as of December 31. A milk cow operation is any place having one or more head of milk cows on hand.

Steady increases in productivity (milk per cow) have more than offset declines in the number of dairy farms and cows, resulting in a steady upward trend in total milk production (**Figure 4**). Meanwhile, domestic demand for milk and milk products, on a per-capita basis, has grown slowly, at 0.4 % per year since 1990.[13] Rising consumption of dairy products such as cheese has offset a decline in consumption of fluid milk products. Exports of dairy products have increased in recent years, reaching record levels in 2008.

Figure 4. Milk Production, Number of Cows, and Productivity
(rising milk production per cow offsets the declining number of milk cows)



Source: Calculated from data published by U.S. Department of Agriculture, National Agricultural Statistics Service.

[13] Jerry Cessna, "Situation and Outlook for the U.S. Dairy Industry," Agricultural Outlook Forum 2010, Arlington, VA, February 19, 2010, http://www.usda.gov/oce/forum/2010_Speeches/Speeches/DairyOutlook2010.pdf.

The trend in farm numbers depends on the size of the farm (**Table 1**). Between 2005 and 2009, farms with fewer than 500 cows registered declines, while farms with 500 to 999 cows held steady. In contrast, farms with 1,000 or more cows increased 20%, driven by significantly lower costs of production. In 2005, dairy farms with 1,000 cows or more had average costs of production of $13.59 per hundredweight, 15% below the average for farms with 400-999 head and 35% below the cost for farms with 100-199 head. Average costs were much higher for even smaller operations.[14]

Table 1. Trend in Dairy Farm Numbers Depends on Farm Size

(number of farms by herd size)

	1-49 head	50-99 head	100-499 head	500-999 head	1,000+ head	Total
2005	37,325	23,185	14,717	1,700	1,373	78,300
2006	35,305	22,115	14,327	1,700	1,433	74,880
2007	33,975	19,330	13,370	1,720	1,600	69,995
2008	33,200	17,800	12,650	1,720	1,630	67,000
2009	31,900	17,300	12,450	1,700	1,650	65,000
Change 2005-2009	- 15%	-25%	-15%	no change	+20%	-17%

Source: U.S. Department of Agriculture, National Agricultural Statistics Service "Quick Stats."

Notes: Number of dairy operations as of December 31. A milk cow operation is any place having one or more head of milk cows on hand.

Industry structure at the farm level can also be characterized by the volume of milk produced by farms of different sizes (**Table 2**). In 2009, the largest portion of U.S. milk output (47%) was produced on farms with 1,000 head or more, while small farms (fewer than 100 head) accounted for only 16% of the total. An increase in the number of large farms has contributed to their producing a larger portion of U.S. milk output (the share produced by large farms rose from 35% in 2005 to 47% in 2009).

Larger dairy farms enjoy "scale economies" arising in part from the use of large and highly automated milking parlors and feed delivery systems, which also allow for more effective use of labor.[15] Also, large, modern buildings reduce per-animal housing costs, as do automated manure removal and handling systems.

The structure of dairy farms also varies by region of the country (**Table 3**). The average farm size is large in the western states (e.g., California, with 850 cows per farm). In contrast, Wisconsin has many small farms and an average farm size of 88 cows. The U.S. average is 133 cows per farm.

[14] James M. MacDonald and William D. McBride, *The Transformation of U.S. Livestock Agriculture—Scale, Efficiency, and Risks*, U.S. Department of Agriculture, Economic Research Service, Electronic Information Bulletin Number 43, Washington, DC, January 2009, p. 14, http://www.ers.usda.gov/publications/EIB43/.

[15] Ibid. p. 14.

Table 2. Distribution of Milk Production by Herd Size

(share of U.S. milk production in percent)

	1-49 head	50-99 head	100-499 head	500-999 head	1,000+ head	Total
2005	6.4	15.2	28.8	14.3	35.3	100
2006	6.1	14.2	28.2	13.4	38.1	100
2007	5.3	12.0	25.7	12.3	44.7	100
2008	5.1	11.5	24.9	12.5	46.0	100
2009	5.0	11.4	24.1	12.6	46.9	100
Percentage-point change, 2005-2009	- 1.4	-3.8	-4.7	-1.7	+11.6	not applicable

Source: U.S. Department of Agriculture, National Agricultural Statistics Service "Quick Stats."

Notes: Data as of December 31. A milk cow operation is any place having one or more head of milk cows on hand.

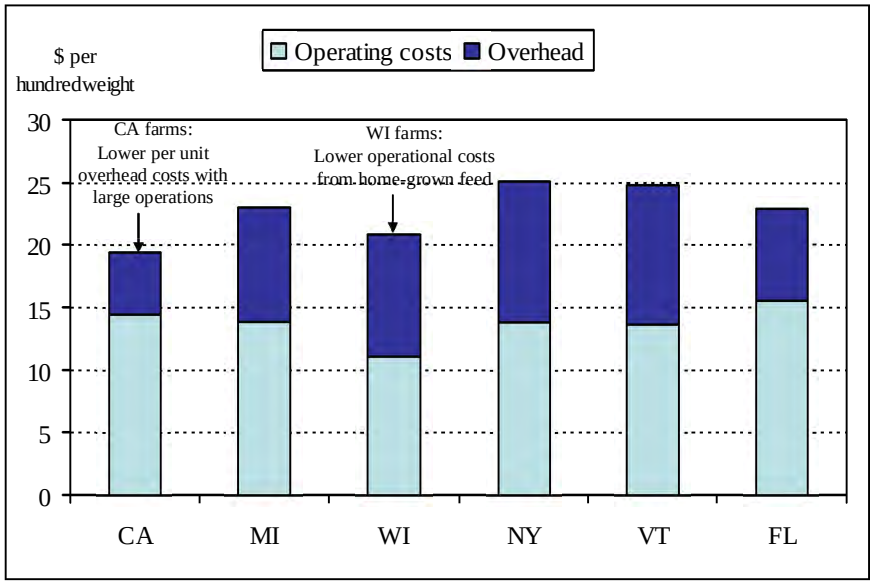
Table 3. Dairy Farm Numbers and Average Size in Selected States, by Farm Size

Selected state	Number of farms	Number of cows (1,000)	Cows per farm (avg.)
California	2,165	1,841	850
Idaho	811	536	661
Texas	1,293	404	313
Florida	422	120	284
Michigan	2,647	344	130
New York	5,683	626	110
Vermont	1,219	140	115
Wisconsin	14,159	1,249	88
Pennsylvania	8,333	553	66
United States	**69,890**	**9,267**	**133**

Source: 2007 Census of Agriculture, U.S. Department of Agriculture.

Cost structure varies by state (**Figure 5**). In the western states, where large dairy farms dominate the industry, operating costs have been affected by high feed costs in recent years because these farms purchase much of their feed (alfalfa and grain prices reached record levels in 2008). However, per-unit overhead costs tend to be relatively low because these costs can be spread over a large number of animals. In parts of the country where producers feed grain and hay that is produced on the farm, such as in Wisconsin, operating costs tend to be lower when grain and feed prices rise. These farms tend to have fewer dairy cows, so per-unit overhead costs are relatively high.

Figure 5. Average Cost of Milk Production



Source: U.S. Department of Agriculture, Economic Research Service.

Notes: Estimates for the month of January 2010.

Cooperatives[16]

A cooperative is an enterprise owned by and operated for the benefit of those using its services. Farmer-owned dairy cooperatives often operate a complete milk distribution system, procuring raw milk from the farm, routing it where needed, managing or coordinating movements of processed or manufactured products, and managing surplus milk. Dairy cooperatives range in size and function, with some solely arranging for the sale of members' milk while others manufacture a wide range of products for direct sale to customers.

The number of dairy cooperatives has been declining since the 1940s as cooperatives merged to take advantage of economic gains from more centralized management of milk supplies and disposition. During 1940-1941, the number of dairy cooperatives totaled over 2,300 and accounted for just under one-half of farm milk marketings. By 2007, the number of cooperatives had shrunk to 155, while the co-op share of farm milk marketings had increased to 83% (with the remaining milk sold without cooperative affiliation). Over time, consolidations as well as strategic alliances among dairy cooperatives have enabled them to serve large retail customers by

[16] Sources for this section include K. Charles Ling, *Marketing Operations of Dairy Cooperatives, 2007*, USDA Rural Development, Research Report 218, Washington, DC, July 2009, http://www.rurdev.usda.gov/RBS/pub/RR218.pdf; U.S. Department of Agriculture, Rural Business-Cooperative Service, *Cooperatives in the Dairy Industry*, Cooperative Information Report 1, Section 16, Washington, DC, September 2005, http://www.rurdev.usda.gov/rbs/pub/cir116.pdf; Alden C. Manchester and Don P. Blayney, "Milk Pricing in the United States," Economic Research Service, U.S. Department of Agriculture, Agriculture Information Bulletin No. 761, http://www.ers.usda.gov/publications/aib761/aib761.pdf; and Robert A. Cropp, *Dairy Cooperatives: Structural Change and Operations*, University of Wisconsin-Extension, Bulletin No. 4, Madison, WI, October 2002, http://www.uwcc.wisc.edu/info/uwcc_bulletins/bulletin_10_02.pdf.

increasing volume and achieving operational efficiencies. Also, some economists contend that consolidation in the retail sector has encouraged consolidation within cooperatives.[17]

In 2008, 79% of the milk produced in the United States was marketed by the 50 largest dairy cooperatives (see **Table 4** for a list of the top ten cooperatives).[18] The top four cooperatives—Dairy Farmers of America (Kansas City, MO), California Dairies (Visalia, CA), Land O'Lakes (St. Paul, MN), and Northwest Dairy Association (Seattle, WA)—accounted for 40% of U.S. milk production. The share of the top four firms has been relatively constant since 2002.[19]

The National Milk Producers Federation, the largest trade association representing milk producer cooperatives, has commented on the importance of the Capper-Volstead Act (see "U.S. Antitrust Law," below) in allowing farmers to take cooperative action and remain independent producers.[20] Historically, cooperatives have improved farmers' bargaining position with milk handlers. They also represent their members in the rulemaking process for changes to federal milk marketing orders. Some producers, though, contend that cooperatives can work against their interests (see "Class Action Lawsuit Filed in the Northeast," below).

Table 4. Top Dairy Cooperatives in 2008

Rank	Dairy Cooperative	Member milk volume (mil. lbs.)	Member farms
1	Dairy Farmers of America, Inc. (Kansas City, MO)	37,900	10,178
2	California Dairies, Inc. (Visalia, CA)	17.700	589
3	Land O'Lakes, Inc. (St. Paul, MN)	12,706	2,965
4	Northwest Dairy Association (Seattle, WA)	7,900	532
5	Dairylea Cooperatives, Inc. (Syracuse, NY)	5,914	2,264
6	Associated Milk Producers, Inc. (New Ulm, MN)	5,800	3,500
7	Family Dairies USA (Madison, WI)	5,751	3.563
8	Foremost Farms USA (Baraboo, WI)	4,990	2,356
9	Manitowoc Milk Producers Cooperative (Manitowoc, WI)	4,857	2,945
10	Select Milk Producers, Inc. (Artesia, NM)	4,629	79
	Top-10 total	**90,465** (48% of U.S.)	**25,412** (37% of U.S.)
	Total for top 50 cooperatives	**150,699** (79% of U.S.)	**43,448** (65% of U.S.)

Source: Cooperatives data from *Hoard's Dairyman*, October 10, 2009, p. 613.

Notes: USDA estimated U.S. milk production at 189.3 billion pounds and the no. of dairy operations at 67,000.

[17] For example, Joe Horner, *Trends in the U.S. Dairy Industry*, University of Missouri, Columbia, MO, 2006, http://agebb.missouri.edu/dairy/grazing/conference/proceedings/trendsindairyingpaper.pdf.

[18] Kayla Buske, "Top 50 Co-ops Raise Production by 5 Billion," *Hoard's Dairyman*, October 10, 2009, p. 613.

[19] Brian W. Gould, "Structual Change and Competition in the U.S. Dairy Industry," presentation at conference on "The Economics of Structural Change and Competition in the Food System," Washington, DC, December 7, 2009, p. 23, http://www.farmfoundation.org/news/articlefiles/1721-Brian%20Gould%20dairy.pdf.

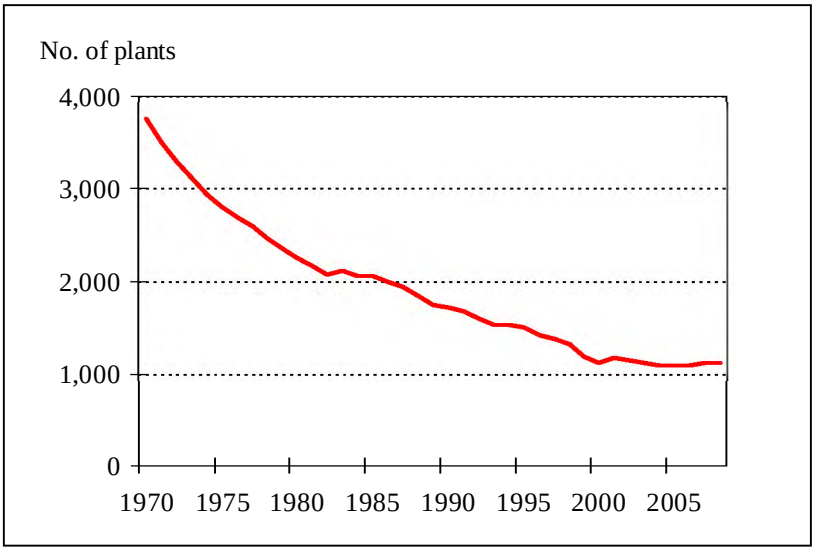
[20] "Comments of the National Milk Producers Federation," Workshops to Explore Competition and Regulatory Issues in the Agricultural Industry, December 30, 2009, http://www.justice.gov/atr/public/workshops/ag2010/comments/255228.pdf.

Processors and Manufacturers

The dairy processing industry comprises both processing milk for fluid consumption and manufacturing dairy products such as butter and cheese. A number of factors in recent decades have affected dairy processors and manufacturers, including changes in demand (e.g., declining demand for fluid milk and increasing demand for dairy products like cheese), technological change in manufacturing processes and plants (leading to larger plant sizes), and changes in the retail sector (e.g., large-scale purchasing by retail giants). Over time, the number of dairy firms has declined, with firms reportedly increasing their plant and firm size to reduce their costs and respond to the demands of high-volume retailers, large restaurant chains, and other customers.

After declining for many years, the number of dairy manufacturing plants in the United States has stabilized around 1,100 facilities (**Figure 6**). The number of plants operated by the largest dairy processor/manufacturing companies ranges from 9 to 81 plants (**Table 5**).

Figure 6. Number of U.S. Plants for Manufactured Dairy Products



Source: U.S. Department of Agriculture, National Agricultural Statistics Service "Quick Stats."

Concentration trends in the dairy processing and manufacturing industry are not unlike those in other food processing sectors (**Table 6**).[21] In 2002, the latest year of available data, the four-firm concentration ratio (the combined market share of the top four firms) was 35% for cheese processing and 43% for fluid milk processing. These figures compare with a mean industry concentration ratio of 49% for nine selected food processing industries. Several industries were substantially more concentrated than dairy, including meatpacking (59%) and soybean processing (80%). While the level of concentration in dairy processing is not unusually high nationally, local or regional markets can be more concentrated, which is a concern for some farmers and policymakers.

[21] Michael Ollinger et al., *Structural Change in the Meat, Poultry, Dairy, and Grain Processing Industries*, U.S. Department of Agriculture, Economic Research Service, Economic Research Report Number 3, Washington, DC, March 2005, p. 12, http://www.ers.usda.gov/publications/err3/err3.pdf.

Table 5. Top North American Dairy Processors in 2008

Rank	Firm Name	Sales ($ million)	No. of plants
1	Dean Foods Co.	12,454	81
2	Kraft Foods North America Inc.	4,800	16
3	Saputo Inc.	4,390	45
4	Land O'Lakes Inc.	4,136	9
5	Schreiber Foods Inc.	3,500	18
6	Prairie Farms Dairy	2,924	20
7	Agropur Cooperative	2,800	26
8	Kroger Co. Dairy Operations	2,500	19
9	Leprino Foods Co.	2,500	9
10	Darigold Inc.	2,200	11

Source: Dairy Foods,http://www.dairyfoods.com/DF/Home/Files/PDFs/df0809Dairy-100-table.pdf.

Table 6. Four-Firm Concentration Ratios in Selected Industries

Industry	1972	1977	1982	1987	1992	1997	2002
Fluid milk	**17.0**	**17.0**	**16.0**	**21.0**	**22.0**	**21.3**	**42.6**
Cheese products	**40.0**	**38.0**	**34.0**	**41.0**	**42.0**	**52.4**	**34.6**
Meatpacking	26.0	21.0	29.0	39.0	50.0	57.0	58.7
Meat processing	16.0	18.0	19.0	20.0	25.0	20.4	24.2
Poultry slaughter	17.0	17.0	22.0	29.0	34.0	40.6	46.3
Feed	22.0	21.0	20.0	19.0	23.0	23.7	29.8
Corn wet milling	63.0	61.0	74.0	74.0	73.0	71.7	68.7
Soybean processing	52.0	50.0	61.0	71.0	71.0	79.6	79.9
Flour milling	32.0	33.0	40.0	44.0	56.0	48.4	53.6
Simple average of above nine food manufacturing industries	**31.7**	**30.7**	**35.0**	**39.8**	**44.0**	**46.1**	**48.7**

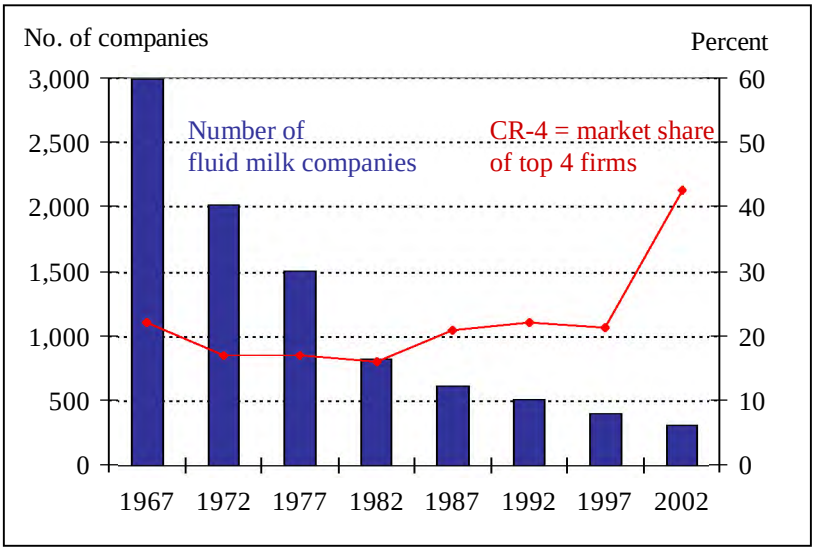
Source: U.S. Department of Commerce, U.S. Census Bureau, *Concentration Ratios: 2002*, 2002 Economic Census, May 2006, http://www.census.gov/prod/ec02/ec0231sr1.pdf. Data for 1997 and previous years are from Michael Ollinger et al., *Structural Change in the Meat, Poultry, Dairy, and Grain Processing Industries*, U.S. Department of Agriculture, Economic Research Service, Economic Research Report Number 3, Washington, DC, March 2005, p. 12, http://www.ers.usda.gov/publications/err3/err3.pdf.

Note: The four-firm concentration ratio is the percentage of value of shipments by the four largest companies for each manufacturing industry.

Based on U.S. Census Bureau data, the level of industry concentration in the fluid milk industry has recently increased (**Figure 7**), following a merger in 2001 between the two largest private fluid processing firms—Suiza, Inc., and Dean Foods. Nevertheless, industry concentration for fluid milk processing is just below the average level (49%) for selected food manufacturing

industries. For cheese manufacturing, the four-firm concentration ratio has ranged between 34% and 52% during 1972-2002, with no clear trend.[22]

Figure 7. Fluid Milk Processing Companies



Source: Chart originally appeared in D. Stukenberg, D. Blayney, and J. Miller, "Major Advances in Milk Marketing: Government and Industry Consolidation," *Journal of Dairy Science*, vol. 89, no. 4 (2006), pp. 1195–1206. Market share data updated with U.S. Department of Commerce, U.S. Census Bureau, *Concentration Ratios: 2002*, 2002 Economic Census, May 2006.

Retailers

The retail sector for food products has changed substantially in recent years, with price competition from nontraditional food retailers—such as discount mass-merchandise stores, warehouse club stores, and supercenters—causing traditional supermarket chains to review pricing and product strategies. Changes in retail sector strategies and competitive pressures have resulted in consolidation in the U.S. grocery retailing industry. According to data reported by USDA's Economic Research Service, the top four firms accounted for 17% of national sales in the early 1990s. By 2005, the four-firm concentration ratio had increased to 36% following acquisitions and mergers by large grocery retailers, including Kroger Co., Albertson's, Ahold USA, and Safeway.[23] National-level concentration ratios are relevant for food product suppliers (including processors and/or wholesalers), who negotiate terms of product sales with retailers.

Local-level concentration in the retail food sector is typically higher than at the national level. Typical four-firm concentration shares in specific market areas averaged 74% in 2003, according to a study by the U.S. Government Accountability Office.[24] Four-firm shares ranged from 63% in Minneapolis/St. Paul to 85% in Denver. Previous analysis by USDA's Economic Research

[22] For profiles of 50 U.S. cheese companies, see the June 5, 2009, edition of the *Cheese Market News*.

[23] Economic Research Service, USDA, *U.S. Grocery Retailing Concentration, 1992-2005*, data table, http://www.ers.usda.gov/Briefing/FoodMarketingSystem/foodretailing.htm.

[24] U.S. Government Accountability Office, *DAIRY INDUSTRY—Information on Milk Prices, Factors Affecting Prices, and Dairy Policy Options*, Washington, DC, December 2004, p. 136, http://www.gao.gov/new.items/d0550.pdf.

Service indicated similar levels in selected markets, averaging 72% in 1992 and 74% in 1998.[25] Compared with national concentration measures in the food retail sector, local-level concentration is more important for consumers because relatively high concentration indicates fewer choices among food stores at the individual consumer level.

Dairy industry observers say that one of the most significant impacts of retail consolidation and concentration has been the tendency for dairy processors and manufacturers to increase in size (consolidation) and market share (concentration), to cope with rising demands of food retailers to deliver products at lower costs.[26]

Effects of Concentration in the Dairy Industry

The primary concern many have with concentration is that it could reduce competition in the marketplace for agricultural and food products and result in market power (i.e., the ability of a firm to influence prices), putting at a disadvantage some segment of the population, such as producers or consumers. However, concentration may also result in efficiency gains, whereby cost savings are passed on to consumers through lower retail prices, which in turn can result in additional demand for commodities and benefit farmers.

In summarizing research findings for several agricultural industries, the Government Accountability Office (GAO) concluded that the economic literature has not established that "concentration in the processing segment of the beef, pork, or dairy sectors, or the retail sector overall has adversely affected agricultural commodity or retail food prices."[27] GAO concluded that most of the studies it reviewed found either no evidence of market power, or efficiency effects that were larger than the market power effects of concentration. However, the agency said, experts generally agreed that concentration is likely to increase in the future, potentially raising greater concerns about market power and the manipulation of commodity or food prices. The report also cited an expert who said that further increases in concentration would continue to generate efficiency gains and be beneficial.

The GAO report reviewed four studies of dairy processing, concluding overall that concentration in dairy processing had little or no impact on commodity or food prices. In the studies that found concentration affected market power, the authors concluded that efficiency benefits (lower costs that benefit all market participants) were greater than the market power effects. Also, the report commented that the market power of dairy processors can be offset by the market power of dairy cooperatives.

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[25] U.S. Department of Agriculture data as reported in *DAIRY INDUSTRY—Information on Milk Prices and Changing Market Structure*, Washington, DC, June 2001, p. 103, http://www.gao.gov/new.items/d01561.pdf.

[26] Don P. Blayney and James Miller, "Concentration and Structural Change in Dairy Processing and Manufacturing," paper presented to "Looking Ahead ... or Looking Behind?" 10th Annual Workshop for Dairy Economists and Policy Analysts, Memphis, TN, April 23-24, 2003, http://www.dairy.cornell.edu/CPDMP/Pages/Workshops/Memphis03/Blayney/. See also Phil R. Kaufman, *Consolidation in Food Retailing: Prospects for Consumers & Grocery Suppliers*, U.S. Department of Agriculture, Economic Research Service, Agricultural Outlook, August 2000, pp. 18-22, http://www.ers.usda.gov/publications/agoutlook/aug2000/ao273.pdf.

[27] U.S. Government Accountability Office, *Concentration in Agriculture*, GAO-09-746R, June 30, 2009, http://www.gao.gov/new.items/d09746r.pdf.

The same report included reviews of three studies of regional retail milk markets that generally suggested evidence of market power. For example, one found evidence of noncompetitive behavior (e.g., time lags for retailers response to farm price declines, and retail prices not aligned with product costs) in nine metropolitan markets in several western states. Two other studies found evidence of some market power among retailers in the Boston retail fluid milk market.

GAO also reported that most experts it contacted said that concentration is likely to increase, leading to fewer retail outlets, although opinions were mixed on the likely impact of this potential trend. A few experts told GAO that large retail firms may be exerting pressure on food processors to consolidate because some retailers prefer to deal with relatively large suppliers. In this way, concentration at the retail level can lead to further concentration at the food processor level.

Concerns About Dairy Pricing[28]

Another concern is how concentration affects price transparency in markets for dairy products and milk. Some policymakers and industry participants feel that concentration in the dairy industry has weakened market "discovery" of prices. Fewer buyers and sellers means that fewer transactions are made. Typically, markets work more efficiently when there are many "observable" transactions that provide sufficient information to all market participants about demand, supply, and prices. The move within the dairy industry to a more integrated market, with closer ties between various market players such as custom contracts or other pre-arranged transactions, results in fewer trades of products on the cash or "spot" market. In years past, these sales would account for a greater share of market transactions and provide a good measure of current prices.

The primary spot market for dairy is located at the Chicago Mercantile Exchange (CME), where cheese, butter, and nonfat dry milk are traded. Actual quantities traded are quite small, but prices determined by buyers and sellers at this market are used to establish wholesale price contracts across the country, subject to premiums and discounts for factors such as quality and transportation. Wholesale dairy product prices are then used to set monthly minimum prices by USDA that milk handlers must pay for farm milk under the federal orders.

Some dairy producer groups believe that the CME is an inadequate pricing mechanism because of perceptions that the market is too thinly traded, lacks transparency and sufficient oversight, and creates a highly volatile market that adversely affects producers. The GAO concluded in a 2007 study that "certain market conditions at the CME spot cheese market, including a small number of trades and a small number of traders who make a majority of trades, continue to make this market particularly susceptible to manipulation."[29]

However, the report also noted that if price manipulation were to occur, some industry participants claim it would be short-lived because many large participants in the cheese and dairy industry with diverse interests monitor the market and are prepared to participate in it. Reportedly, they would begin trading once prices became disconnected from underlying supply and demand conditions, potentially counteracting any attempted price manipulation.

[28] For more information on dairy pricing, see CRS Report R40903, *Dairy Pricing Issues*, by (name redacted).

[29] U.S. Government Accountability Office, *SPOT CHEESE MARKET—Market Oversight Has Increased, but Concerns Remain about Potential Manipulation*, GAO-07-707, Washington, DC, June 2007, p. 8, http://www.gao.gov/new.items/d07707.pdf.

Nevertheless, some industry participants want sales volume to increase on the CME, thereby reducing the possibility of price manipulation.

The Commodity Futures Trading Commission (CFTC) and the CME itself monitor activities of the spot market participants for signs of price manipulation. In December 2008, several dairy industry participants agreed to pay a civil monetary penalty for attempting to manipulate milk futures prices through purchases of cheese on the CME in 2004.[30]

While there are apparently no current proposals on how to encourage additional volume, the CME recently announced new futures and options contracts for skimmed milk powder as an international dairy risk management tool, with six worldwide delivery points. Some producers and policymakers are also interested in improving overall dairy price transparency by expanding USDA's mandatory price reporting system for dairy products in terms of additional products (e.g., cheese other than cheddar) and/or frequency of price reports.[31] In the 2008 farm bill, Congress authorized more frequent price reporting for dairy products, subject to appropriations.

U.S. Antitrust Law[32]

U.S. antitrust laws (including other statutes applicable to antitrust issues) are concerned with competition in markets and not the protection of any individual competitor. These laws proscribe unlawful mergers and business practices in general terms, leaving courts to decide which are illegal based on the facts of each case.[33]

The two basic antitrust laws in the United States are the Sherman Act and the Clayton Act. Both are enforceable either by the Antitrust Division of the Department of Justice (DOJ) or by the Federal Trade Commission (FTC). Private persons may allege economic injury caused by violation of either of the acts. The acts spell out the conduct and activities prohibited in economic and market transactions.

The Sherman Act (15 U.S.C. §§ 1-8) prohibits concerted activity that actually restrains trade; an agreement among separate firms not to compete with each other would likely violate Section 1 of the Sherman Act. The act also prohibits unilateral conduct; Section 2 prohibits monopolization or attempted monopolization (merely having a monopoly or being a monopolist does not, by itself, violate Section 2). Violation of either provision is a felony subject to fines of up to $1 million for individuals and $100 million for corporations, or imprisonment of up to 10 years, or both.

Section 7 of the Clayton Act (15 U.S.C. § 18) prohibits mergers or acquisitions that may tend to "substantially" lessen competition. In other words, while enforcement under the Sherman Act

[30] U.S. Commodity Futures Trading Commission, "Dairy Farmers of America (DFA) and Two Former Executives to Pay $12 Million Penalty to Settle CFTC Charges of Attempted Manipulation and Speculative Position Limit Violations," press release, December 8, 2008, http://www.cftc.gov/newsroom/enforcementpressreleases/2008/pr5584-08.html.

[31] U.S. Congress, House Committee on Agriculture, statement by Russell C. Redding, Secretary, Pennsylvania Department of Agriculture, hearing to review dairy policy, 111th Cong., 2nd sess., April 20, 2010, http://agriculture.house.gov/hearings/statements.html.

[32] Material from this section is from CRS Report RL31026, *General Overview of United States Antitrust Law*, by (name r edacted).

[33] See http://www.ftc.gov/bc/antitrust/antitrust_laws.shtm.

requires a completed act, the Clayton Act (15 U.S.C. §§ 12 et seq.) is directed at preventing activities that might restrain trade. The "Merger Guidelines" issued by DOJ and FTC, which were promulgated to offer an indication of the ways in which mergers and acquisitions would be analyzed by the two agencies, are currently being updated to reflect the agencies' actual practices. The Clayton Act also provides for "premerger notification" to allow the antitrust enforcement agencies the opportunity to examine potential mergers/acquisitions of certain-sized transactions prior to their consummation.[34]

The premerger remedies DOJ/FTC might seek with respect to a proposed merger that is not approved as the transaction was presented are either filing legal action to stop the merger, or conditioning federal approval on modifications to the proposed transaction to remove perceived antitrust concerns (e.g., divestiture by one or another party of assets or operations that duplicate or overlap those of the other party or parties). Negotiating such changes often is seen as in the interests of all parties, because going to court can be expensive, time-consuming, and risky.

An important exemption to antitrust laws for agriculture is the Capper-Volstead Act (7 U.S.C. §§ 291-292). The act confers limited exemption from antitrust liability to farmer cooperatives, both for their existence and for joint processing and marketing of their commodities. The act specifically states: "Persons engaged in the production of agricultural products as farmers, planters, ranchmen, dairymen, nut or fruit growers may act together in associations, corporate or otherwise, with or without capital stock, in collectively processing, preparing for market, handling, and marketing in interstate and foreign commerce, such products of persons so engaged."[35]

Antitrust Activity in the Dairy Industry

U.S. v. Dean Foods

In April 2009, Dean Foods, the largest fluid milk processor in the United States, purchased two plants owned by Foremost Farms, a cooperative in Wisconsin. On January 22, 2010, the Department of Justice (DOJ) and several states filed a civil antitrust suit against Dean Foods in the U.S. District Court for Eastern Wisconsin, alleging that the purchase violated Section 7 of the Clayton Act. DOJ asserts that Dean's acquisition will, by eliminating an aggressive price competitor (Foremost Farms), lessen competition in the market to sell milk to schools and in a separate market for supplying fluid milk to grocery chains, restaurants, and other retail outlets in Illinois, Michigan, and Wisconsin. According to DOJ, "The Acquisition's elimination of head-to-head competition between Dean and Foremost will hurt school milk and fluid milk purchases."[36] Prior to the transaction, Foremost Farms had been losing fluid milk customers to other processors who could deliver milk to more distant locations as the customers preferred. As a result, the

[34] The "premerger notification" provisions were added to the Clayton Act as 15 U.S.C. §§ 18a by Title II of the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (P.L. 95-435).

[35] 7 U.S.C. § 291.

[36] *U.S. v. Dean Foods Company*, No. 10-C-0059 (ED Wis. filed January 22, 2010) at ¶ 6. Complaint available at http://www.justice.gov/atr/cases/f254400/254455.htm.

cooperative had been pricing aggressively in local markets against Dean Foods. The acquisition was not required to be reported to the Department of Justice beforehand.[37]

The lawsuit seeks to require Dean Foods to sell the dairy processing plants it acquired from Foremost Farms. According to DOJ, Dean Foods now has approximately 57% of the market for processed milk in northeastern Illinois, Wisconsin, and the upper peninsula of Michigan. Dean Foods has stated that it believes the acquisition was in compliance with antitrust laws and benefits dairy farmers by providing a stable outlet for their milk. The company says the deal has already resulted in cost savings that benefit consumers and spur competition in the region.[38]

The ongoing case against Dean Foods highlights the economics of consolidation in the U.S. dairy industry.[39] In individual markets where there is excess capacity, such as in upper Wisconsin, as indicated by DOJ, it may be difficult for a smaller firm to aggressively compete indefinitely if some of that company's customers shift to other companies for market reasons (in this case, for a broader geographic reach by the supplier).

Class Action Lawsuit Filed in the Northeast

On October 8, 2009, a class action antitrust complaint was filed against four major firms in the Northeast dairy market in the U.S. District Court for Vermont on behalf of Northeast dairy farmers. The defendants include Dairy Farmers of America, Inc. (DFA is the largest U.S. dairy cooperative), Dairy Marketing Services (DMS is a milk marketing organization formed by DFA and Dairylea Cooperative), Dean Foods (milk processor), and HP Hood (milk processor). The lawsuit claims that the defendants have conspired through contracts, agreements, mergers, plant closures, and other actions to control the supply of fluid milk in the Northeast, with the net effect of lowering prices received by farmers.

At issue is the state of competition in a milk marketing system once dominated by family-owned processors that were supplied by neighboring producers, many of whom were members of one of several cooperatives that were active in the region. According to the lawsuit, dairy producers must now affiliate with either DFA or DMS because the two firms have exclusive supply agreements with the region's dominant processors, Dean Foods and HP Hood. According to the lawsuit, the defendants, together, have used their market power to the detriment of dairy farmers in the Northeast, particularly independent producers and cooperatives.

DFA has said the cooperative has helped to increase returns for dairy farmers through efficiencies leading to cost savings in field services, hauling, and administration. It maintains that rather than suppressing farmer prices, the cooperative looks for ways to increase producer returns.[40]

[37] See also "Justice Department Files Antitrust Lawsuit Against Dean Foods Company," DOJ press release, January 22, 2010, http://www.justice.gov/atr/public/press_releases/2010/254435.htm.

[38] Dean Foods, "Dean Foods to Vigorously Contest Justice Department Complaint," press release, January 22, 2010, http://www.deanfoods.com/our-company/news/press-release.aspx?StoryID=1378120.

[39] On April 7, 2010, the court denied Dean's motion to dismiss; order available at http://www.justice.gov/atr/cases/f254500/254536.htm.

[40] "DFA Says Recent Allegations Are Without Basis," *Cheese Market News*, October 17, 2009.

Observers note that it may take years for the litigation to be resolved.[41] A similar (ongoing) case filed in 2008 involves multiple class action lawsuits in the southeastern United States against Dean Foods, National Dairy Holdings, and DFA, and others.[42]

Concluding Remark

From an economic and legal standpoint, determining the net effect of concentration—namely, the potentially offsetting effects of market power (negative for some participants) and efficiency gains (neutral or positive for all participants)—is complicated by the presence of many other factors that influence prices and the marketplace in general.[43] Market power can be affected by such factors as product differentiation, ease of entering a market, or the structure of contracts between farmers and processors. Likewise, efficiency gains can stem from a variety of sources, including technology changes and business practices. Finally, economic events and government policies can certainly influence commodity prices, making it difficult to pinpoint effects of concentration on the dairy industry.

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[41] Steve Taylor, "Lawsuit Against DFA, Dean Foods Expected to Take Years," *Lancaster Farming*, October 23, 2010, http://lancasterfarming.com/node/2336.

[42] For information on the 2009 lawsuit in the Northeast and 2008 in the Southeast, see Sarah London and Diane E. Zamos, *Vermont Attorney General's Report: The Capper-Volstead Act and the Northeast Dairy Fluid Milk Market*, Vermont Attorney General's Office, Montpelier, VT, January 2010, http://www.atg.state.vt.us/assets/files/2010-1-6%20Act%2048%20Report.pdf.

[43] U.S. Government Accountability Office, *Concentration in Agriculture*, GAO-09-746R, June 30, 2009, p. 26, http://www.gao.gov/new.items/d09746r.pdf.