The Dynamic U.S. Dairy Industry:

Meeting the Challenges of Demand-Driven Markets

As global demand for milk and new dairy products expands, the roles of policies that support prices are diminishing while the roles of flexibility and innovation aimed at improving competitiveness are growing…… In response to changing global markets, the U.S. dairy industry is positioning itself to compete worldwide through innovation, expansion and consolidation.
From: "U.S. Dairy Industry at a Global Crossroads," U.S. Department of Agriculture, Economic Research Service. November 2006

Introduction

Not since the world food crisis of the 1970s, have agriculture and food issues been the subject of so many headlines, news articles and editorials. Food price inflation here at home, another food crisis in developing countries, the ethanol boom, and surging grain prices have recaptured the imaginations of news media, the public and policymakers.

In the meantime, a less-publicized but critical transformation has been underway in one of our most important and dynamic food sectors: the nation's dairy industry. A quiet but steady revolution in production, processing and market development has turned what only 25 years ago was a government-dependent industry into a force in an increasingly global marketplace.

Sales of the dairy industry's products here in the United States have grown thanks to the development and aggressive marketing of new high-value dairy products and food ingredients. Unsubsidized exports of U.S. dairy products surged recently as the U.S. dairy industry, for the first time, became a major player in international markets. And the nation's productive dairy farms responded quickly to market signals and expanded production to meet growing global demand for products made from their milk.

The pace of change in the dairy industry has accelerated during the past five years, particularly as U.S. dairy products have gained greater access to global markets. Yet the industry's potential to capitalize on the full range of 21st century opportunities and its ability to produce jobs will depend, in part, on how quickly federal policy is adjusted to coincide with the new market realities. For all of the industry's dynamism, few sectors in U.S. agriculture have had to live with federal programs that are more outdated and counter-productive.

The Dairy Industry's Importance to the U.S. Economy and Rural America

With the U.S. and global economies mired in the deepest, and what will likely be the longest, recession since the Great Depression, the stakes associated with accelerating the success of the dairy industry have rarely been higher.
The U.S. dairy sector is an important contributor to the nation's economic well being and to the vitality of Rural America. Milk is produced on farms in every one of the 50 states with all but five being home to 100 or more dairy farms. Nationwide, hundreds of thousands of jobs are created by the dairy industry on farms, in processing plants, through marketing and transportation, in retail stores and in companies that supply inputs to the dairy industry. Nearly 60,000 licensed commercial dairy farms are linked with processing plants through a sophisticated production and marketing network that provides consumers worldwide with nutritious, high-quality milk and manufactured products.[1]

U.S. consumers spend just over 11% of their food dollars on dairy products, such as beverages, cheeses, butter, yogurt and ice cream. If the consumption of dairy products by U.S. consumers at restaurants and other institutional outlets were valued in retail terms and added to sales at supermarkets and other retail outlets, the total retail value of U.S. dairy product consumption would be an estimated $110 billion. To meet consumer demand here and abroad, U.S. dairy farms produced 190 billion pounds, or more than 16 billion gallons, of milk last year.

Working to Create and Respond to Market Opportunities

For much of the 20th century, the dairy industry was largely dependent on domestic sales of a fairly narrow range of basic dairy products -- milk, cheese, butter, ice cream and powdered products -- for most of its revenue stream. The industry had two primary markets for the bulk of those commodities: U.S. consumers; and the federal government, which purchased and stored billions of pounds of surplus cheese, butter and milk powder to help prop up the price that farmers received for their milk. Dairy exports were mostly an after-thought. Since U.S. dairy commodity prices were supported by the federal government at levels that exceeded world market prices, exports could occur only if they were subsidized by the federal government.

While the federal government was perennially preoccupied with the supply-side of the dairy market equation and hobbling the industry with its rigid price-setting formulas, the dairy industry was quietly reengineering itself in an effort to create and respond to marketing opportunities here and abroad. The focus and energy of the industry has been shifting dramatically from supply-side problems toward demand-side solutions. In response to market opportunities in recent years, for example, the industry has gained a foothold in global markets, broadened dramatically the scope of its product offerings, and developed a wide range of protein-based ingredients for hundreds of processed food products.

[1] In 2006, the U.S. dairy product manufacturing industry employed about 121,000 people.

1. Competing in Domestic Markets with New Products

Competition for the consumer food dollar keeps intensifying year after year. In that kind of economic environment, the success of any food industry depends, in large measure, on its ability to keep up with the times and provide consumers with the kinds of food products that reflect their changing lifestyles, nutritional needs, and purchasing power.

Today's dairy case reflects customer demands for convenience, taste, healthy choices, and a wide variety of innovative product options.

Continued prosperity for the dairy industry will therefore be determined largely by its ability to anticipate and respond quickly to its customers. Although the dairy industry was once mainly a mass producer and seller of a relative handful of basic commodities, success will no longer be determined by its capacity to produce more and cheaper milk, cheese, butter, and nonfat dry milk powder. That's why the dairy industry is fast becoming a marketing powerhouse dedicated to meeting the demand of its customers for a wide-range of innovative, new food products.

This market-oriented approach has helped the industry achieve steady growth in sales. Between 1995 and 2004 the number of new dairy products introduced into the U.S. marketplace more than doubled. Despite slowing per capita consumption, increased sales of high-value dairy products have kept the industry growing and competitive in the U.S. market.

But more needs to be done. In recent years, consumption of dairy products here at home has increased by only about 2% per year. The industry's impressive new-product introduction rate still lags behind some other countries in Europe and Asia. One of the primary sources of the problem is the federal price support program. It encourages dairy processors to continue to focus on producing basic commodities like milk powder for government purchase rather than developing new, innovative dairy products and food ingredients for the changing marketplace.

New high-value product introductions in the United States are only one of the key ingredients to the industry's future success. The geography of opportunity for the industry is increasingly shifting beyond our borders, including to developing countries, where growth rates for dairy product sales can exceed 10% per year.

2. The Recent Export Market Breakthrough

The industry also has demonstrated the ability to redefine itself into one of the world leaders in dairy exports. At a time when world supplies of dairy products were tightening and economic growth, especially in countries like China and India, boosted interest in dairy product imports, the U.S. dairy industry stepped in to help fill the gap. In 2005, U.S dairy exports surged and accounted for the equivalent of 8% of total U.S. milk production. The percentage of milk production exported jumped to nearly 10% in 2007 and beyond that in 2008. Last year alone, the volume of U.S dairy product exports rose more than 13%.

During that period, the federal Dairy Export Incentive Program, which subsidizes U.S. dairy product exports that are priced above world market levels, remained dormant since U.S. exports were highly competitive in world markets. This marked one of the rare occasions since the U.S. Department of Agriculture (USDA) began purchasing surplus dairy products in the late-1940s that the industry was producing strictly for the marketplace, and not for the government, for an extended period of time.

Our Modern Dairy Farm Sector: Poised to Respond to New Challenges

1. Fewer, Larger, More-Productive Farms

The steady evolution of a modern U.S. dairy farm sector leaves the industry well-positioned to respond to the changing needs of the domestic and global marketplaces. As illustrated in Table 1, like other sectors in U.S. agriculture, dairy farming is now composed of far fewer milk-producing operations. The farms that remain are larger, more-productive, and well-equipped to respond to market signals without extensive federal government intervention. The nation's total output of milk has grown at an average annual rate of just under 2% since the year 2000 despite the ongoing reduction in the number of dairy farms. (See Figure 1.)

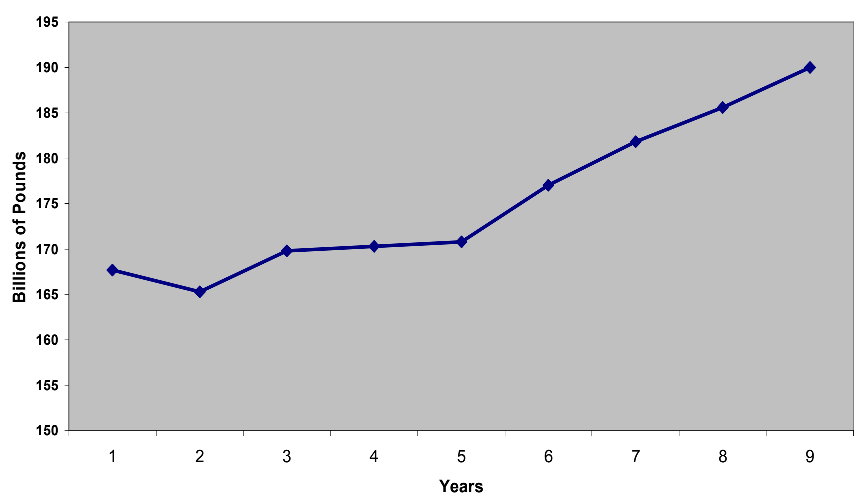
Table 1. Statistical Snapshot of Long-term Changes in the U.S. Dairy Farm Sector

Year	Number of Farms with Cows	Number of Cows	Output (lbs. of milk)	Number of Co-ops	Co-ops' Share of U.S. Milk Handled	Number of Dairy Processing Plants
1940	4,663,431	22 mln.	120 bln.	2,270	48%	22,000
2007	71,510	9 mln.	182 bln.	196	86%	1,247

During much of the mid-20th century, the bulk of the nation's milk production capacity was on small farms throughout the Midwest, Northeast and South. These farms were slow to adjust to changing market realities. As a result, the federal government, rather than the marketplace, became the guarantor of dairy farm viability by purchasing surplus cheese, butter and milk powder to prop up the price of milk paid to dairy farmers. More government intervention, however, only meant continued overproduction and downward pressure on milk prices year after year.

Over time, however, dairy operations, in search of greater resiliency and efficiency, grew larger, reduced their costs of production, and expanded rapidly into western states. Currently, nearly 60% of the nation's milk production occurs on about 4% of the nation's dairy farms that have more than 500 cows. The westward shift was driven largely by more-favorable weather and lower cattle feed costs. In 2008, 44% of the nation's milk was produced in just eight western states. These changes in the makeup of the nation's dairy farm sector have positioned the industry to produce for world markets with limited or no government control of milk prices combined with income support programs designed to protect small family dairy farms.

Figure 1. Milk Production in the United States, 2000 to 2008



2. The Role of the Nation's Dairy Coops

The growing prominence of large dairy-farmer cooperatives also has strengthened the position of dairy farms in the modern marketplace. Membership in dairy cooperatives increases dairy farmers' ability to control their economic destinies by increasing their bargaining power and creating direct linkages to the dairy product marketplace.

According to the latest USDA data, despite a dramatic decline in the number of dairy farmer cooperatives, the extent of their market penetration and control has substantially increased. As Table 1 indicates, dairy coops now control the distribution of more than 85% of the milk produced on the nation's dairy farms. They also account for nearly all of the country's butter and milk powder production and more than 40% of U.S. cheese manufacturing capacity. Their current degree of market power far surpasses what co-ops were able to offer early-to-mid-20th century dairy farmers. With ascendancy of dairy coops, one of the primary original purposes of the seven-decades-old Federal Milk Marketing Order Program, which sets minimum milk prices, has effectively disappeared.

3. Challenges in an Ethanol-Driven Agriculture

In 2007 and 2008, milk prices received by dairy farmers for their milk surged to unprecedented levels along with prices of other farm commodities, such as wheat, rice, corn and soybeans. Those price increases, however, were tempered by soaring energy, fertilizer and cattle feed costs that limited dairy farmers' net incomes. Sparked by the ethanol boom, which consumed a quarter of all the corn produced in this country, the prices of the ingredients of dairy cattle feed surged in 2007 and 2008. For some feed crops, prices had tripled since the early part of the decade.

Despite the recent decline of the prices of grains and other feed ingredients in the wake of the global recession and the collapse of oil prices, the cost of feeding dairy cows remains substantially higher now that it was just three years ago. Corn, which is a major ingredient of cattle feed, for example, used to sell for about $2.00 a bushel during the early part of this decade. Now, despite a crushing recession and a decline in the demand for food and livestock feed, a bushel of corn is still selling for about $4.00 per bushel or twice the price in the early years of this decade. When oil prices and the U.S. and global economies emerge from the current recession, the price of corn and other feed products are expected to rise again.

The new relationship between milk prices and the cost of feed for dairy cows represents a major shift in the economics of producing milk not only in the United States, but worldwide as well. Here at home, USDA estimates that federal payments to dairy farms could run as high as $1 billion in fiscal year 2009.

Outlook for the Future: Markets and Policy at a Critical Crossroads

U.S. dairy exports and the prices of milk and processed dairy products declined steeply in last quarter of 2008 and in early 2009, largely in response to the unusually deep and widespread global recession. The dairy price retreat was consistent with the pattern in other farm and non-farm commodities as consumer economic spending worldwide collapsed in the face of financial crises, job cuts and losses of consumer confidence that have not been seen for nearly three decades, if not since the Great Depression.

The impact of these global economic forces on dairy exports was exacerbated by the contamination of Chinese dairy products with melamine, which cooled off a red-hot demand for imports. As incomes for millions of the Chinese people rose rapidly, their interest in enhancing their diets with dairy products increased accordingly.

This year's setback for U.S. dairy products in export markets was not simply the result of a reversal of market forces. U.S. exporters had made significant inroads into competitors' markets that should have been sustainable. Enter the federal milk price support program. After milk and dairy prices declined, the federal price support program kicked in and artificially kept U.S. dairy product prices above world market levels, allowing our competitors to meet the needs of importing countries at world market prices. The United States dairy industry had plenty of dairy products to export, especially with milk production at record levels. It was simply priced out of the market by its own the federal government, which again siphoned off and stored the dairy products that could have helped reduce the country's growing trade deficit.

The date of the anticipated turn around in the world economy, of course, remains uncertain. However, when it occurs, the U.S. dairy industry should be well-positioned to respond to market signals and increase production to meet the recovery in consumer demand for dairy products here and abroad.

According to USDA and other experts, such as the University of Missouri's Food and Agriculture Policy Research Institute (FAPRI), which conducts economic forecasts for Congress, milk and dairy product prices should begin to rebound in late 2009 or early 2010. U.S. dairy farms are expected to make adjustments to current low milk prices by reducing the sizes of their cow herds within the next six months or so. That action will help bring U.S. milk production more in line with current, reduced consumption levels and begin an upturn in prices until the economic recovery generates a resurgence in global demand for U.S. dairy products.

Conclusion

Times have changed quickly for the U.S. dairy industry. While industry headlines have focused on prices, feed costs and dairy exports, the largely untold story coming out of the recent expansion and the current contraction is the acceleration of the industry's transformation into a dynamic, consumption-driven sector of the U.S. economy.

Both the mid-2000s' expansion and the current retreat from high prices and booming export markets have largely been the result of changes in the consumption-side of the market equation, not a reflection of under- or over-supply. As FAPRI put it in its *U.S. Baseline Briefing Book*, which was released in January 2009, "strong international demand during the past two years had moved world dairy prices to record levels….and world dairy prices have fallen due to weak global demand for dairy products."

In light of those developments, the way forward for the industry should be navigated along three simultaneous consumer-driven pathways: 1) orderly adjustments by dairy farmers to market conditions; 2) a continuation of the aggressive development and marketing of innovative, high-value products that domestic consumers expect in a highly competitive marketplace; and 3) additional steps to promote, rather than inhibit, sustainable domestic and export market opportunities. The industry has already charted the course. How much progress is made will depend on changes in federal policies, especially the Federal Milk Marketing Order Program's inflexible price-setting formulas, which inhibit innovation, competition, and the industry's ability to respond quickly and fully to a consumer-driven marketplace.