

# rethinking Dairyland

## Background for Decisions about Wisconsin's Dairy Industry

No. 6— April 2003

### OPENING UP GLOBAL DAIRY TRADE

#### Will it Help or Hurt Wisconsin Dairying?

Global trade in dairy products involves complex and contentious issues. Viewed broadly from the perspective of “society,” there are large benefits from liberalizing trade. Viewed narrowly from the perspective of dairy producers, liberalized trade is desirable only if it expands exports and reduces imports.

International trade in dairy products is small relative to production and is highly concentrated. Among major dairy countries, only New Zealand and Australia depend on for-

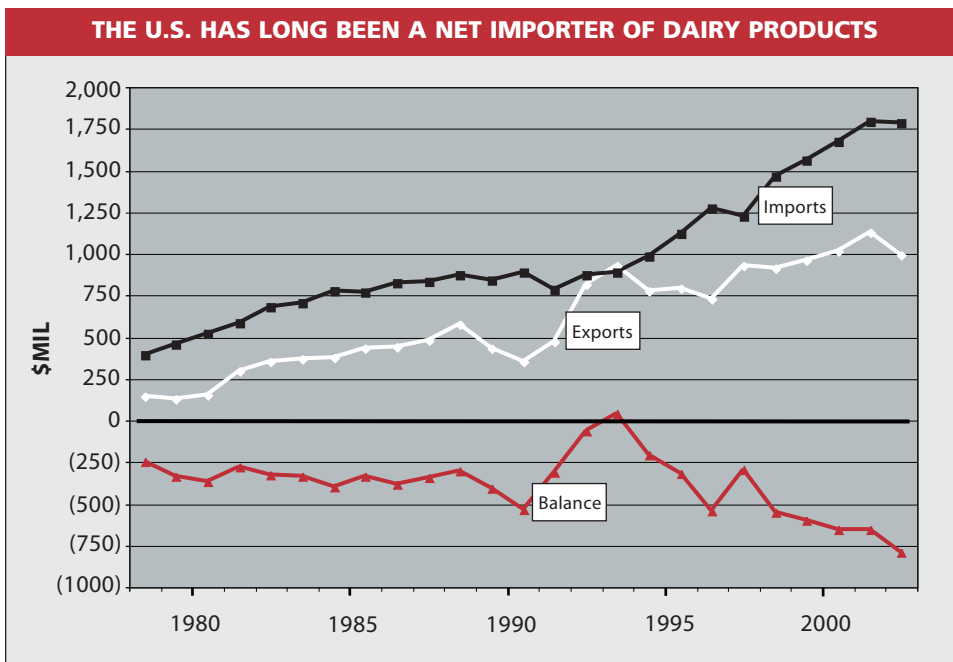
eign markets for a majority of their dairy product sales. Most other developed countries – including the United States – use exports mainly as a way to dispose of milk in excess of domestic consumption.

This installment of Rethinking Dairyland focuses on U.S. dairy trade and implications for Wisconsin. We first look at how much dairy trade occurs, what products are traded, and who are our trading partners. Then we discuss how recent trade agreements — the North American Free Trade Agreement (NAFTA) and the 1994 multilateral

Uruguay Round World Trade Organization (WTO) agreement — affected dairy trade.

#### The U.S. Dairy Trade Gap

The United States has long been a net importer of dairy products. From the late 1970s through the early 1990s, our dairy trade deficit ranged from \$250 million to \$500 million. Strong butter and nonfat dry milk exports in 1992 and 1993 nearly closed the trade gap. But the gap has been widening since 1993, and is approaching \$1 billion.



This is part of a series of brief reports on the current state of the Wisconsin dairy industry and factors that will influence its evolution. Expanded versions of these reports, with additional data and graphics, are posted online at <http://www.aae.wisc.edu/www/pub/>

If you do not have internet access, copies can be obtained from Ms. Linda Davis, Department of Agricultural and Applied Economics, University of Wisconsin-Madison, 427 Lorch St., Madison, WI 53706. Telephone: (608) 262-9488 or email: [davis@aae.wisc.edu](mailto:davis@aae.wisc.edu)

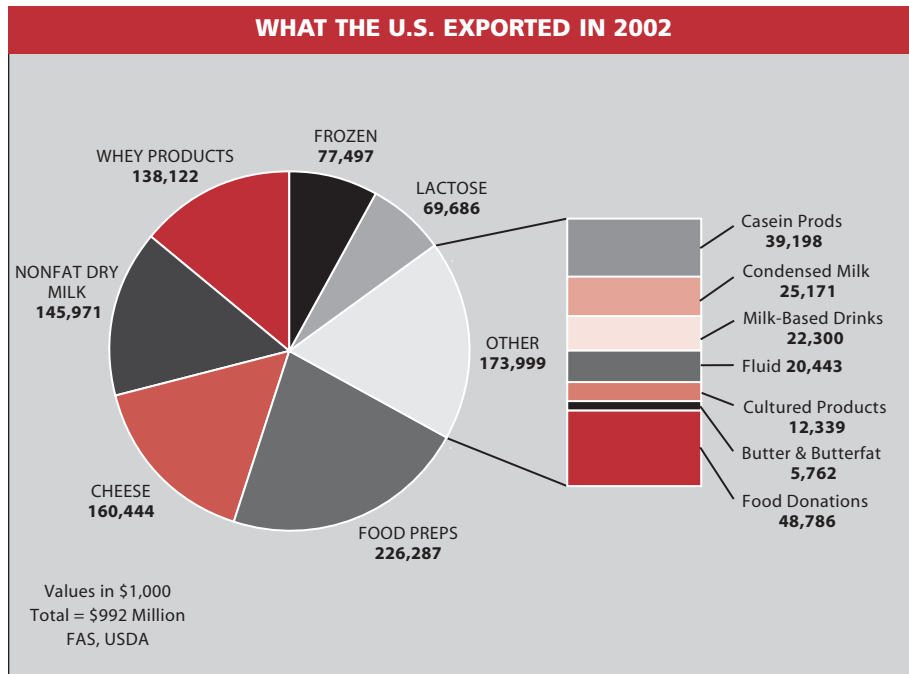
## What we sell and what we buy

The kinds of dairy products we import are quite different from those we export. The largest U.S. export category in terms of value is food preparations, which consists of dairy-based infant formulas and other food products containing milk. Nonfat dry milk, cheese and whey products together make up about half of the value of U.S. dairy exports. Total dairy export value increased by \$264 million between 1996 and 2002. Among major categories, nonfat dry milk grew most rapidly (up by \$105 million) followed by food prepara-

tions (+\$81 million), and cheese (+\$55 million). Butter exports fell by \$35 million.

Cheese makes up over 40 percent of our dairy import value. Milk protein concentrate (MPC) and casein imports represented 32 percent of the total value of dairy imports in 2002. We imported slightly more dairy based food preparations than we exported. Dairy imports besides those in the top three categories were only 7 percent of the total value

Cheese showed the largest growth in imports between 1996 and 2002 — up \$203 million. Next in line were food preparations containing milk (+\$188 million), and butter (+\$37 million). Total import value was up by \$509 million.

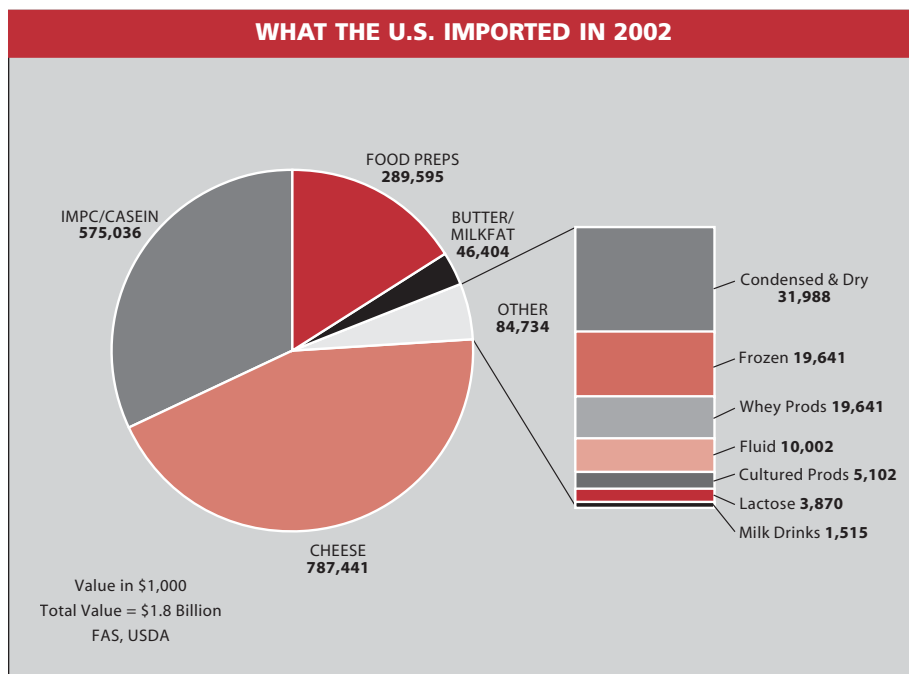


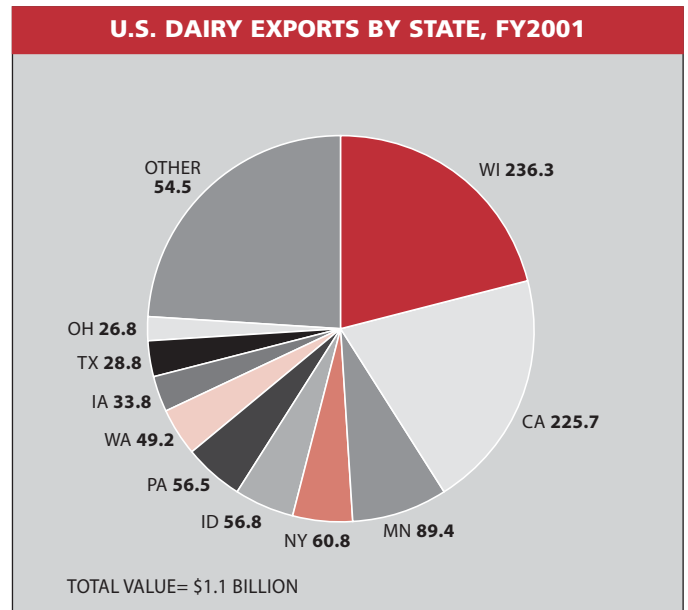
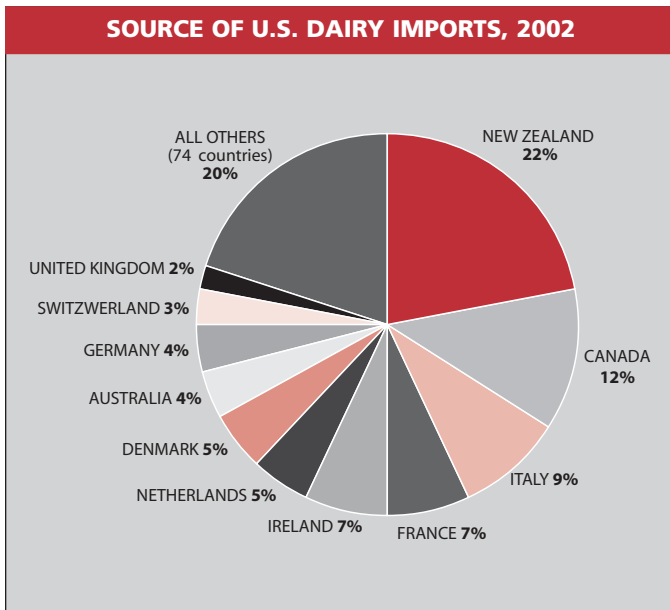
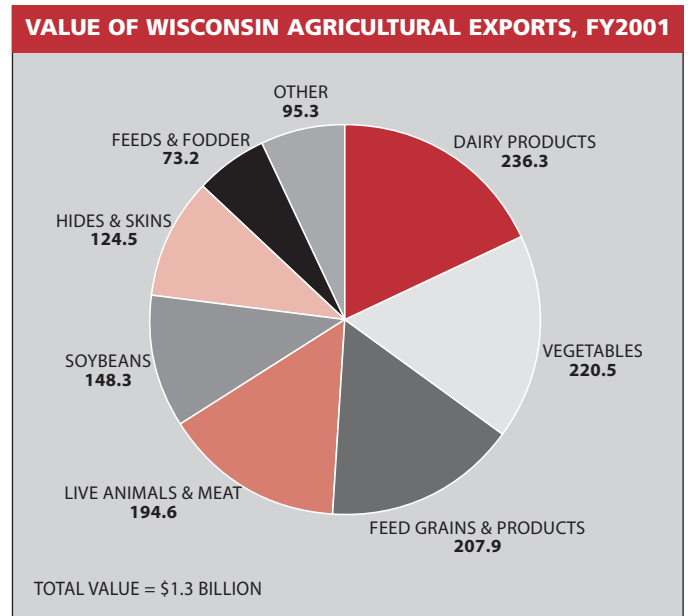
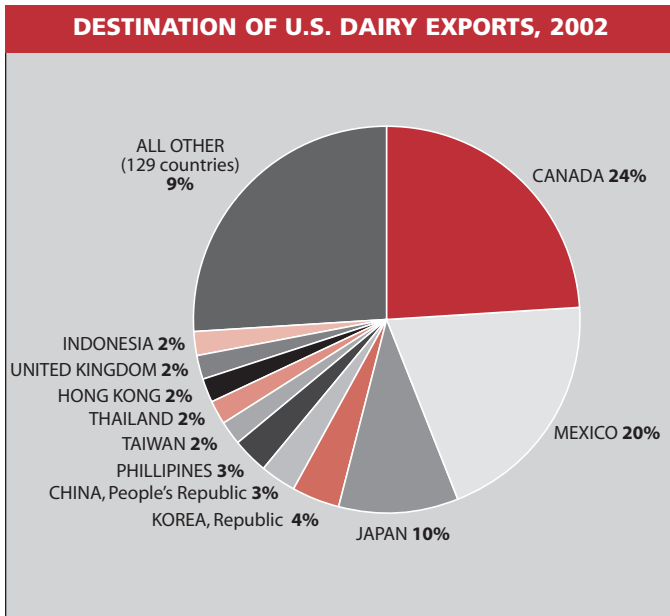
## Who we sell to and buy from

Our principal dairy export markets are our closest neighbors, Mexico and Canada who accounted for 44 percent of U.S. exports in 2002. The principal export to Mexico is nonfat dry milk, accounting for about a third of the value of what we sent there in 2002. Exports to Canada are largely comprised of dairy-based food preparations. More than a quarter of our exports — also predominately dairy-based food preparations — went to several Pacific Rim countries. The remainder of our exports went to 129 other countries ranging from Afghanistan to Zimbabwe.

The major sources of U.S. dairy imports are Oceania, Canada, and the European Community (EC). New Zealand and Australia accounted for 26 percent of U.S. dairy exports in 2002 and seven EC countries accounted for a combined 40 percent. Twelve percent of U.S dairy imports in 2002 were sourced from Canada.

The value of U.S. Dairy imports from Australia and New Zealand increased by 166 percent between 1993 and 2002. About 35 percent of these imports were in the form of casein products and MPC in 2002. Imports from the EC showed more modest gains, about 45 percent. Cheese accounts for about 60 percent





of EC exports to the U.S. U.S. dairy imports from Canada in 2002 were 5 times greater than in 1993, and Canada moved from a minor supplier to the second leading exporter of dairy products to the United States. About 2/3 of the imports from Canada are dairy food and confectionery products and dairy-based spreads.

### What's dairy trade worth to Wisconsin?

Measuring the importance of dairy exports to Wisconsin is difficult. While shipping manifests normally indicate state of origin, transshipments make it hard to pinpoint where dairy products for export were manufactured and it is impossible to determine where the milk came from to produce the products.

USDA's Economic Research Service reports that dairy product exports from Wisconsin in Fiscal Year 2001 had a total value of \$236 million. To put this number in perspective, the estimated wholesale value of dairy products manufactured in Wisconsin in FY2001 was about \$9 billion. Dairy is the largest category of Wisconsin agricultural exports, but is only marginally larger than vegetables and feed grains.

According to ERS, Wisconsin was the leading state for dairy product exports in FY2001, surpassing California by about \$10 million. Minnesota was a distant third with an estimated \$90 million dairy export value.

## Two Pacts Govern U.S. Dairy Trade

International dairy trade is profoundly affected by countries' internal trade policies (e.g., tariffs, quotas, export subsidies and non-tariff barriers) as well as domestic agricultural policies (e.g., price supports, deficiency payments and input subsidies). Trade agreements attempt to promote trade by obligating countries to alter these policies. The trade pacts most important for U.S. dairy trade are the 1994 Uruguay Round World Trade Organization Agreement (URWTO) and the North American Free Trade Agreement (NAFTA), also implemented in 1994.

## The Uruguay Round World Trade Organization Agreement

The URWTO agreement is a multilateral trade agreement involving 117 countries. It follows several earlier rounds of trade negotiations and related General Agreements on Tariffs and Trade dating to 1947. The Uruguay round was the first that involved real attempts to liberalize agricultural trade.

The provisions of the URWTO agreement applying to trade in dairy products are:

- **Less internal support for agriculture.** Participating countries are to reduce selected price supports and input subsidies by 20 percent from 1986-88 base levels.

- **Less border protection.** Member nations converted all non-tariff barriers (quotas, import licenses, etc.) to tariffs and are scaling back those tariffs an average of 36 percent over six years. Tariffs for individual products will be reduced at least 15 percent from 1986-88 base levels.

- **Greater access to markets.** Countries were to maintain existing access to their markets at current levels and expand access in cases where there has been little or no trade. Where imports of a product had been kept below 3 percent of estimated consumption, countries were required to open up the market to a minimum level.

- **Fewer subsidies.** Countries were to reduce the amounts of agricultural products exported with subsidies by 21 percent and reduce budget outlays for export subsidies by 36 percent.

- **Sanitation rules only used for health reasons.** Sanitary measures are to be used only protect human, animal or plant health, based on scientific criteria.

The URWTO established tariff rate quotas (TRQs) to replace absolute import restrictions. In general, TRQs set a low tariff for imports within specified quotas and a high tariff for imports above the quota. Quota amounts were reduced according to specified schedules.

The over-quota TRQs established in the URWTO agreement for U.S. imports of nonfat dry milk NDM, butter, and cheese are as follows:

Product	Quota, Metric Tons (2002)	Over-Quota Tariff, ¢/Lb	
		1995	2000
Nonfat Dry Milk	5,261	46.2	39.2
Butter	6,977	82.2	69.9
Cheese	135,587	65.4	55.6

The over-quota tariffs for 2000 will remain in effect until any new tariffs are established in the ongoing Doha, Qatar Round of WTO negotiations.

## Are U.S. Borders Still Protected?

These tariff rate quotas do a pretty effective job of protecting our borders from a flood of imported dairy products. The volume of imported dairy products let in under minimum tariffs is quite small compared to overall U.S. production. The quotas for nonfat dry milk and butter allowed in under low lower tariffs are equivalent to about 1 percent of U.S. production. The cheese quota equals about 3.5 percent of production.

This protection has helped United States maintain domestic dairy product prices above world prices. The table below shows the difference between U.S. domestic prices and world prices. It's true that some of the price differences are due to the USDA's dairy price support program and to differences between U.S. and international supply/demand conditions. However, even when the federal government bought little or no product under the price support program, there was still a gap between U.S. and world prices. Clearly the quotas helped keep U.S. bulk dairy product prices above levels that, at times, would have amounted to New Zealand prices plus the cost of shipping.

## We did allow more imports

The URWTO agreement did give foreign suppliers greater access to U.S. markets. While U.S. cheese imports didn't grow much as a percentage of U.S. consumption after the URWTO agreement went into effect, they grew markedly in terms of volume — foreign suppliers were sharing a growing U.S. cheese market. The average annual tonnage of cheese imports increased by 21 percent from 1990-1994 to 1995-2001. Butter imports stayed relatively small as a percentage of consumption through 1997. After that year, U.S. butter imports grew — especially during 1998 and 2001 when U.S. domestic butter prices were high. At times in those years, importers found it profitable to bring butter into this country even though they had to pay high over-quota tariffs. Nonfat dry milk imports were never large and didn't change significantly.

## Percentages by Which U.S. Central Market Prices for Cheddar Cheese, Butter and Nonfat Dry Milk Exceeded World Prices, 1990-2001

	Cheddar Cheese	Butter	Nonfat Dry Milk
<i>Pre-URWTO Agreement:</i>			
1990	71.4%	58.3%	53.1%
1991	56.8	59.5	51.8
1992	41.6	20.5	39.2
1993	60.3	21.1	60.7
1994	56.0	20.2	55.9
<b>1990-94 Average</b>	<b>57.2</b>	<b>35.9</b>	<b>52.1</b>
<i>Post-URWTO Agreement</i>			
1995	29.4	-18.0	13.6
1996	33.8	42.6	39.4
1997	18.9	48.3	38.1
1998	55.4	111.0	61.2
1999	61.7	89.6	75.8
2000	36.2	97.2	19.3
2001	45.6	174.7	7.8
<b>1995-2001 Average</b>	<b>40.1</b>	<b>77.9</b>	<b>36.50</b>

\*Source: USDA, "Dairy: World Markets and Trade," various issues 1991-2002. World prices are represented by the mid-point of high and low prices fob Northern European ports.

### Blindsided by milk protein concentrates

An unanticipated cost of the URWTO agreement has arisen in connection with expanded imports of Milk Protein Concentrate (MPC). So far those costs have been borne mostly by the federal government.

When the URWTO agreement was negotiated, it was widely thought that U.S. MPC imports would be small and posed little threat to the domestic dairy industry. Accordingly, MPC was assigned a small tariff (\$.0017 per pound) and no quotas.

In the late 1990s, however, U.S. food processors began to see imported MPC as an attractive alternative to domestic nonfat dry milk as a source of milk solids. MPC is a cheaper source of protein, and it works better in many high-protein food applications. MPC also increases efficiency in cheese making compared to using nonfat dry milk for standardizing the composition of cheese milk. Because MPC contains more protein, more cheese and less whey per vat can be produced.

U.S. imports of MPC soared from 7,300 metric tons in 1995 to 53,000 metric tons in 2000 before falling back to 28,500 metric tons in 2001. Imports in 2002 were 33,600 metric tons.

The United States produces very little of its own MPC, but producer groups complain that imported MPC displaces domestically produced nonfat dry milk and so spurs government purchases under the price support program. Imported MPC can be used in non-standardized cheeses — such as generic "pizza cheese" — for which the Food and Drug Administration has set no standards of identity. Since MPC may also enter the U.S. in mixtures that also contain nonfat dry milk and whey powder, producers argue that these products should be subject to the same tariff rate quotas applicable to nonfat dry milk.

There is no question that MPC imports have brought unanticipated costs. MPC has displaced a substantial amount of nonfat dry milk and so spurred added federal purchases of nonfat dry milk. The U.S. government has borne these costs.

There is no consensus about how to handle these unanticipated costs. Processors say MPC is a unique product that meets their needs in a way that nonfat dry milk can't. Since MPC isn't manufactured in the United States, they argue, there is no domestic product to protect and therefore no reason to slap on a high tariff. Processors also

blame the USDA's dairy price support program for driving production of MPC offshore by making nonfat dry milk more profitable to produce than MPC. They say it is inappropriate to levy a larger tariff on imports of the product forced offshore.

Producers argue that European exporters frequently receive export subsidies for shipments of MPC and casein to the United States — in essence forcing the U.S. dairy industry to bear part of the cost of European dairy product surplus disposal.

### Little boost to U.S. dairy exports

How did the URWTO agreement affect U.S. dairy exports? U.S. exports of bulk cheese and butter remain at low levels; these items are usually priced out of international markets. Nonfat dry milk can periodically be exported without subsidies, but most nonfat dry milk exports have been under USDA's Dairy Export Incentive Program (DEIP) program, which the URWTO agreement curtailed.



Based on historical levels of subsidized exports, the agreement set a phase-out schedule that currently limits DEIP subsidies to 3 million pounds of cheese, 21 million pounds of butter and 68 million pounds of nonfat dry milk. In striking contrast, the EU is permitted to subsidize 321 million pounds of cheese, 272 million pounds of butter and 272 million pounds of nonfat dry milk.

So far, the URWTO agreement has done little to significantly increase U.S. dairy exports. There is evidence that U.S. cheese exports expanded somewhat after other countries increased their minimum access commitments and associated lower within-quota tariffs. It also can be argued that the agreement shifted the economic environment in the United States to one that favored expanded exports of differentiated (value-added) dairy products such as specialty cheeses and premium ice cream. In the longer-run, the latter development may contribute to larger revenues from U.S. dairy exports.

### **Some Positive Impacts for Wisconsin**

One positive impact on Wisconsin centers around dry whey and lactose. U.S. exports of dry whey have grown substantially in recent years, going from \$70 million in 1993 to \$138 million in 2002. The United States is now one of the world's top dry whey exporters — second only to France in 2001. More than 80 percent of Wisconsin's milk goes into cheese production, which generates large amounts of dry whey and lactose as byproducts. Therefore, the new markets and expanded exports of these products generated by the URWTO have benefited Wisconsin more than other states.

Although U.S. cheese exports haven't bloomed under the URWTO, what expansion has occurred has doubtless favored those who export specialty cheeses. This is good news for Wisconsin. A sizable share of the state's cheese — more than 10 percent and growing — consists of specialty cheeses. It's unlikely that the observed modest increase in U.S. cheese exports has involved much bulk cheese, because the URWTO didn't eliminate the border protections and export subsidies that have depressed cheese prices on the world market. World prices are so low that U.S. bulk cheese simply can't compete. Specialty cheese producers, however, sell unique products into a higher-priced market. These higher returns mean that they can compete even though their raw-product costs are higher than those in Oceania and Argentina.

Still, the overall benefits to cheese exporters under URWTO have been small. The benefits to Wisconsin's specialty cheese exporters clearly are smaller than they are for the state's dried whey and lactose producers.

## **The North American Free Trade Agreement**

The NAFTA is a trilateral agreement involving trade among the United States, Canada and Mexico. Canada-U.S. dairy trade is not covered under the NAFTA, so any benefits and costs coming to the United States from the NAFTA are related to trade with Mexico.

The NAFTA allowed a gradual expansion of U.S. dairy exports to Mexico. Prior to the NAFTA, Mexico used licenses and tariffs to limit access to its dairy markets. When the NAFTA became effective, Mexico converted its import licensing arrangements for milk powder (the country's most important dairy import) into a tariff rate quota (TRQ) that operates as follows:

- The TRQ for milk powder is scheduled to remain in effect during a 15-year transition period ending in 2008.

- Duty-free access for U.S. nonfat dry milk and whole milk powder starts at 40,000 metric tons and is scheduled to grow at an annual compounded rate over the 15-year transition period.

- U.S. exports of milk powder in excess of 40,000 metric tons were subject to a 139 percent tariff to start with. Twenty-four percent of the tariff was to be eliminated during the first six years of the NAFTA; the rest is being phased out during the remainder of the 15-year transition period.

For cheese, Mexico converted its import-licensing arrangement to tariffs as follows:

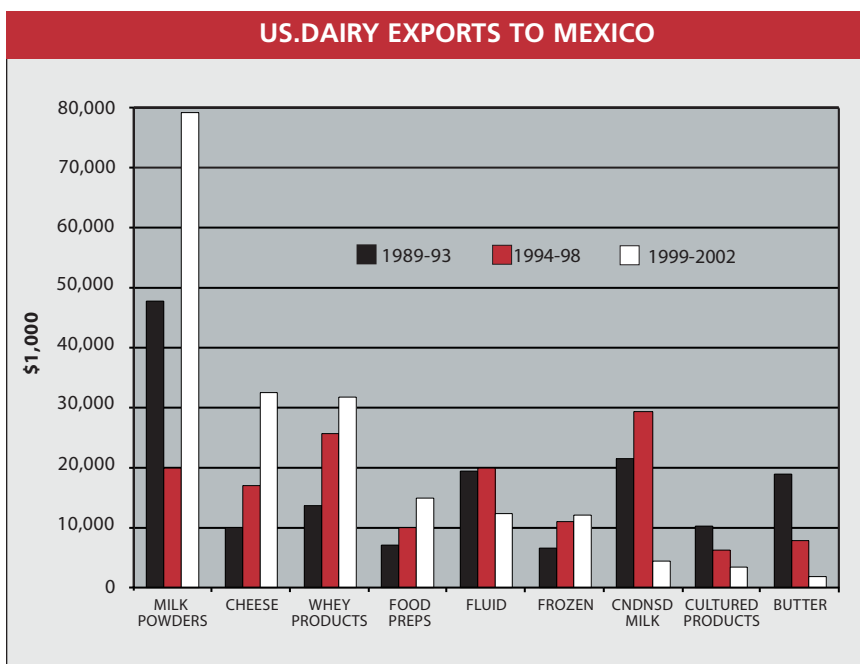
- Imports of cheese that were subject to import licensing prior to the NAFTA initially were assigned a 20 percent tariff that was phased out over a 10-year transition period ending in 2003.

- Imports of fresh cheeses were assigned a 40 percent tariff that was phased out over a 10-year period ending in 2003.

### **Big hopes for NAFTA haven't been realized**

The zeroing out of tariffs for major dairy exports to Mexico is an important benefit for the U.S. dairy industry. U.S. firms controlled more than 30 percent of Mexico's \$785 million in dairy imports in 2001.

However, U.S. exports to Mexico have not increased as much as NAFTA proponents expected. In fact, average annual U.S. export value actually fell in the four years after NAFTA was implemented. In the last four years, annual export value was higher than in the four years preceding the NAFTA for milk powders, cheese, whey products, food preparations and frozen desserts; lower for fresh milk and cream, condensed milk, cultured products, and butter.



Under the NAFTA, Mexico’s dairy product market has matured and become more competitive for U.S. exporters. Strong Mexican firms have emerged and powerful European multinationals have increased their sales. The maturing of the Mexican market has a number of important implications for U.S. dairy firms:

- There was little change in Mexico’s cheese imports as a percentage of consumption between 1994 and 2002. Moreover, U.S. cheese exporters are facing stiff competition for these sales, especially from European firms.

- Firms exporting bulk dairy products to Mexico are operating on razor thin margins. This means that suppliers of bulk commodities to Mexico must be low-cost exporters to be profitable.

- While Mexico is likely to remain only about 75 percent self-sufficient in milk production for the next several years, price incentives and other developments will foster additional milk production in Central and Northern Mexico.

### Mexico is expanding nonfat dry milk production

Before the NAFTA, Mexico was often the world’s largest importer of nonfat dry milk. Much of this nonfat dry milk was reconstituted to fluid milk for subsidized sale to low-income people. In the face of Mexico’s pervasive and persistent poverty, this use will no doubt continue. In addition, Mexican processors use nonfat dry milk to make a host of other dairy products, which should bolster import demand.

U.S. firms will continue to export substantial quantities of nonfat dry milk to Mexico in the years ahead, probably averaging about 60 thousand metric tons per year. However,

this figure is smaller than anticipated by NAFTA proponents, partly because Mexico is becoming more self-sufficient in nonfat dry milk production. While Mexican consumption of nonfat dry milk grew from 220,000 metric tons in 1994 to 305,000 metric tons in 2002, Mexico’s imports fell from more than 90 percent of consumption to less than 50 percent.

It is not clear why Mexico has increased self-sufficiency levels for nonfat dry milk, rather than channeling its milk production into higher-valued uses. One reason may be that nonfat dry milk is a versatile product that can be used to produce a number of dairy products — reconstituted fluid milk, ice cream, cheese, etc. Presumably, economic incentives exist for Mexican firms to channel domestically-produced nonfat dry milk into these higher-valued products.

### NAFTA brought Wisconsin some gains

Under the NAFTA, Mexico has become a larger importer of dried whey and lactose. As noted earlier, these are important export items for Wisconsin firms, including Foremost Farms of Baraboo, Century Foods International of Sparta and Schreiber Foods International of Green Bay. Each of these firms has exported these and other dairy products to Mexico in the NAFTA era.

However, UW-Madison research suggests that the NAFTA’s impacts on Wisconsin’s farm milk prices is small — only about \$.01 per hundredweight increase. This figure probably understates the impact on Wisconsin farm milk prices by a limited but unknown amount, since the research was conducted before the expansion in dry whey and lactose exports to Mexico.

### NAFTA strengthened Mexico’s dairy sector

Getting Mexico’s dairy import tariffs to zero is good for U.S. companies. However, the NAFTA has changed the economic environment in Mexico, making it a more competitive market. Mexican firms have geared up for tougher competition from U.S. firms. For example, the Mexican dairy cooperatives, Alpura and Lala, are now strong competitors for U.S. exporters and those from other countries. It is doubtful whether they would have achieved this level of competitiveness in the absence of foreign competition.

Mexico’s dairy industry also is pushing for a greater self-sufficiency in milk production. This quest is hampered by low milk production per cow, especially on that country’s

many semi-confined and dual-purpose farms. Milk production per cow in Mexico was only about 17 percent of the comparable U.S. figure in 2002. The move toward self-sufficiency could be accelerated if Mexico succeeds in increasing per-cow production on its semi-confined and dual-purpose farms and in expanding dairy cow numbers on its western-U.S.-style drylot dairies, where milk yields are already comparable to those of the United States.

Mexico's efforts to deal with U.S. competition have not been confined to bolstering competitiveness. Mexican firms have already used regulations to thwart U.S. competitors. For example, in the Mexicali/Tijuana area, regional government regulations require local stores to sell all locally-produced milk first. These rules have rendered U.S. milk unsaleable. Mexican firms may seek ways to limit U.S. exports of milk powder prior to 2008, when the tariff on nonfat dry milk reaches zero.

### **Trade pacts: U.S. dairy farmers are not big winners so far**

URWTO's big benefit for U.S. dairy producers was to provide sufficient border protection to keep U.S. prices for cheddar cheese, butter, and nonfat dry milk above world prices. Its main short-term cost was an unanticipated increase in MPC imports. A longer-term cost may be more important: Benefits to the industry from border protection may prevent the U.S. dairy industry from gaining early-mover advantages and delay for years the time when U.S. firms collectively become major players in international dairy markets.

The U.S. dairy industry could deal with this potential cost by deregulating in order to facilitate expanded dairy exports, but UW-Madison research suggests that the industry will have little incentive to do so. The researchers looked at what would happen under two possible scenarios. Under the first, measures to open world dairy markets would continue during 2000-2005 at the same rate that markets were opened during 1995-2000. The second simulates free trade.

Under both scenarios, U.S. dairy exports would expand in volume somewhat, but U.S. farm milk prices would change very little. Under both scenarios, farm milk prices would rise in Oceania and Argentina and fall in Western Europe, Japan and Canada. These findings help to explain why U.S. producer groups show little interest in giving up

existing benefits from border protection and associated dairy price supports in hopes of expanding dairy exports: They have nothing to gain.

The NAFTA spurred competition in the Mexican market. It reduced tariffs on most U.S. dairy products exported to Mexico to zero in 2003 and eliminates tariffs on nonfat dry milk in 2008. This is a significant potential benefit for the U.S. dairy industry. But so far the gains haven't been large.

The URWTO agreement and the NAFTA created important longer-term changes in the business environment for U.S. dairy exporters.

The URWTO agreement has channeled U.S. dairy exporting activity into products that aren't priced out of international markets by border protection and the price support program. Wisconsin companies have benefited from these changes. In particular, whey and lactose exports — important products for the state's dairy industry — have expanded. The URWTO also favors differentiated dairy products, including Wisconsin's specialty cheeses. Some firms are likely to see significant profit gains from expanding exports of differentiated dairy products.

The NAFTA brought about a different kind of change in the dairy export environment. Under the NAFTA, Mexico's dairy firms have become tough competitors. The NAFTA also has triggered adjustments in Mexico's dairy industry to bring about import substitution, especially for nonfat dry milk. These changes in Mexico's dairy industry likely will limit market-share gains by U.S. dairy-product-exporting firms over the longer-run. But at the same time, these developments will expand opportunities for U.S. firms — including many in Wisconsin — to supply genetics, dairy equipment and technical services to Mexico's dairy industry. ■

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*This factsheet is based on Marketing and Policy Briefing Paper 78e and Babcock Institute Discussion Paper No. X. For information on obtaining copies, see p. 1. This factsheet was written by emeritus professor William Dobson and professor Edward Jesse, both of the Department of Agricultural and Applied Economics, College of Agricultural and Life Sciences, University of Wisconsin-Madison. Direct questions and comment to Jesse at (608) 262-6348 or [evjesse@wisc.edu](mailto:evjesse@wisc.edu).*