



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**BABCOCK INSTITUTE DISCUSSION PAPER
No. 2003-2**

**WORLD TRADE IN DAIRY PRODUCTS AND THE U.S. ROLE:
AN ILLUSTRATED PRIMER**

Ed Jesse

**The Babcock Institute for International Dairy Research and Development
University of Wisconsin, College of Agricultural and Life Sciences
240 Agriculture Hall, 1450 Linden Drive
Madison, Wisconsin 53706-1562**

The Babcock Institute for International Dairy Research and Development
is a joint program of the
University of Wisconsin-Madison College of Agricultural and Life Sciences
University of Wisconsin-Madison School of Veterinary Medicine
University of Wisconsin Extension Cooperative Extension Division

Funding for this study was provided by CSRS USDA Special Grant 00-34266-9810

The views expressed in Babcock Institute
Discussion Papers are those of the authors;
they do not necessarily represent those of the
Institute, nor of the University.

ISBN 1-59215-076-4

The Babcock Institute
College of Agricultural and Life Sciences
240 Agriculture Hall, 1450 Linden Drive
Madison, Wisconsin 53706

Phone: 608-265-4169; Fax: 608-262-8852

Email: babcock@cals.wisc.edu

Internet: <http://babcock.cals.wisc.edu>

© 2003 Board of Regents of the University of Wisconsin System

Table of Contents

Executive Summary	1
Introduction	2
I. World Dairy Trade	2
Where Are the Cows and the Milk?.....	2
Who Are the Sellers?.....	6
Who Are the Buyers?.....	9
Export Trends.....	10
II. U.S. Dairy Trade	13
Composition of U.S. Dairy Exports and Imports.....	13
U.S. Dairy Trading Partners.....	15
Importance of Dairy Trade to Wisconsin.....	21
Appendix. Supply and Use Tables	23

List of Tables

Table 1:	Butter Supply and Use, Selected Countries, 2002.....	23
Table 2:	Cheese Supply and Use, Selected Countries, 2002.....	23
Table 3:	Nonfat Dry Milk Supply and Use, Selected Countries, 2002.....	24
Table 4:	Whole Milk Powder Supply and Use, Selected Countries, 2002.....	24

List of Figures

Figure 1.	Number of Milk Cows, Selected Countries, 2002.....	3
Figure 2.	Milk Production per Cow, Selected Countries, 2002.....	4
Figure 3.	Total Cow's Milk Production, Selected Countries, 2002.....	4
Figure 4.	Change in Milk Production, 1997-2002.....	5
Figure 5.	Percentage Change in Milk Production, 1997-2002.....	6
Figure 6.	Composition of World Dairy Exports, 2001*	7
Figure 7.	World Butter Exports, 2002.....	7
Figure 8.	World Cheese Exports, 2002.....	8
Figure 9.	World Nonfat Dry Milk Exports, 2002	8
Figure 10.	World Dry Whole Milk Exports, 2002.....	9
Figure 11.	World Butter Imports, 2002.....	10
Figure 12.	World Cheese Imports, 2002.....	10
Figure 13.	World Nonfat Dry Milk Imports, 2002	11
Figure 14.	World Dry Whole Milk Imports, 2002.....	11
Figure 15.	Growth in World Dairy Product Exports.....	12
Figure 16.	Dairy Exports by Category.....	12
Figure 17.	U.S. Dairy Trade	13
Figure 18.	Total U.S. Dairy Exports, 2002	14
Figure 19.	Change in U.S. Dairy Exports, 1993-2002.....	14
Figure 20.	Total U.S. Dairy Imports, 2002	15
Figure 21.	Change in U.S. Dairy Imports, 1993-2002.....	15
Figure 22.	Destination of U.S. Dairy Exports, 2002.....	16
Figure 23.	U.S. Dairy Exports, 1993-2002.....	17
Figure 24.	Source of U.S. Dairy Imports, 2002.....	17
Figure 25.	U.S. Dairy Imports, 1993-2002.....	18
Figure 26.	U.S.-Canada Dairy Trade Balance.....	18
Figure 27.	U.S. Exports to Canada, 2002.....	19
Figure 28.	U.S. Imports from Canada, 2002.....	19
Figure 29.	U.S.-Mexico Dairy Trade Balance.....	20
Figure 30.	U.S. Exports to Mexico, 2002	20
Figure 31.	U.S. Imports from Mexico, 2002.....	21
Figure 32.	Value of Wisconsin Agricultural Exports, FY2001 (\$Million)	22
Figure 33.	U.S. Dairy Exports by State, FY2001 (\$Million)	22

WORLD TRADE IN DAIRY PRODUCTS AND THE U.S. ROLE: AN ILLUSTRATED PRIMER

Ed Jesse*

Executive Summary

World trade in dairy products is small relative to production and only a few countries dominate exports. One important dairy exporter is the European Union (EU), which is also the world's leading milk producer and consumer. Most of the EU's external trade in dairy products is subsidized. In contrast, New Zealand and Australia, which represent only a small share of world milk production and do not directly subsidize dairy exports, account for about half of world export tonnage. Milk production has shown strong growth in New Zealand and Australia, indicating these countries would benefit from expanded foreign sales with liberalized trade.

Measured in volume, world dairy trade grew at an annual rate of 4.6 percent between 1961 and 2001. Measured in value, the growth rate was 8.5 percent, but adjusting for inflation reduces that to 3.5 percent. The largest growth has been in cheese, which accounts for nearly 30 percent of the value of all dairy exports.

The U.S. runs a trade deficit in dairy products that has been growing over the last ten years. In 2002, U.S. imports totaled \$1.8 billion and exports \$1 billion. Cheese, nonfat dry milk, whey products, and dairy food preparations account for most of our exports.

Major foreign markets for U.S. dairy products are Canada, Mexico, and Pacific Rim countries. New Zealand, Australia, and the EU supply more than three-quarters of our dairy imports.

More than 90 percent of U.S. dairy imports in 2002 consisted of cheese, concentrated milk proteins, and dairy food preparations. Cheese is the largest import category in terms of value and has been growing most rapidly. The U.S. was the world's largest cheese importer in 2002.

* Professor, Department of Agricultural and Applied Economics, University of Wisconsin-Madison, and Program Director, International Dairy Trade and Policy, Babcock Institute, University of Wisconsin-Madison.

WORLD TRADE IN DAIRY PRODUCTS AND THE U.S. ROLE: AN ILLUSTRATED PRIMER

Ed Jesse

Introduction

The Uruguay round of World Trade Organization (WTO) negotiations, which culminated with an agreement in 1994, was the first time that agricultural trade distortions had been meaningfully considered in multilateral trade talks. Signers of the Uruguay Round trade pact agreed to increase market access to foreign supplies and reduce export subsidies through a phase-in schedule. They also agreed to reduce the trade-distorting effects of domestic price and income support programs.

The Uruguay round WTO agreement was significant in terms of establishing precedent and a specific protocol for liberalizing agricultural trade. But concessions were not large enough to have a material effect on trade distortions. Consequently, the current WTO round—the Doha round—seeks further reductions in direct and indirect export subsidies and further increases in market access.

The negotiations are not proceeding smoothly. The first and second drafts of “modalities” (proposed reductions in trade barriers), scheduled to be agreed to by March 31, 2003, were rejected by major trading countries and regional coalitions for sharply different reasons. The U.S. and the Cairns Group rejected the drafts as not going far enough in cutting export subsidies and increasing market access. The EU and Switzerland rejected the drafts as going too far in that regard. Other countries (e.g., Japan) rejected the modalities as failing to accommodate domestic agricultural programs that, while they may be trade-distorting, also support multi-functionality.

Trade in dairy products is only a small part of world agricultural trade. But the same sharp divisions in positions of traders exist. Countries like New Zealand and Australia, who depend on world markets for most of their dairy income, strongly support opening market access and eliminating export subsidies. Countries like the EU and Canada, who use world markets to dispose of dairy products not consumed domestically, strongly resist restraining their ability to subsidize exports. Countries like Japan, where dairy costs of production are very high and farms serve purposes other than food production, strongly resist reducing tariffs and opening their borders.

The U.S. position on dairy trade is somewhat schizophrenic. Officially, at least as indicated by formal WTO submissions and presentations by the U.S. Special Trade Representative, the U.S. supports phasing out all export subsidies and tariffs. Unofficially, producer interest groups oppose any further increases in market access and are seeking extension of tariffs to imported concentrated milk proteins that are currently duty-free. U.S. producers are clearly uncertain about their competitiveness in world markets under liberalized trade.

Based on current dairy trade patterns, who are the likely gainers and losers from opening up world markets? How is the U.S. dairy industry likely to fare? This paper does not purport to answer these questions, but it does provide background for discussions about liberalizing trade. The paper starts from a global perspective, discussing leading countries in milk production and dairy exports. It then narrows to a U.S. perspective, looking at the magnitude and composition of U.S. dairy imports and exports and changes over time.

I. World Dairy Trade

Where Are the Cows and the Milk?

USDA’s Foreign Agricultural Service (FAS) reported an estimated global total of about 130 million dairy cows in the 20 countries for which it obtained reports in 2002. Nearly 30 percent of these cows were in India and another 30 percent were in Brazil and countries within the Russian

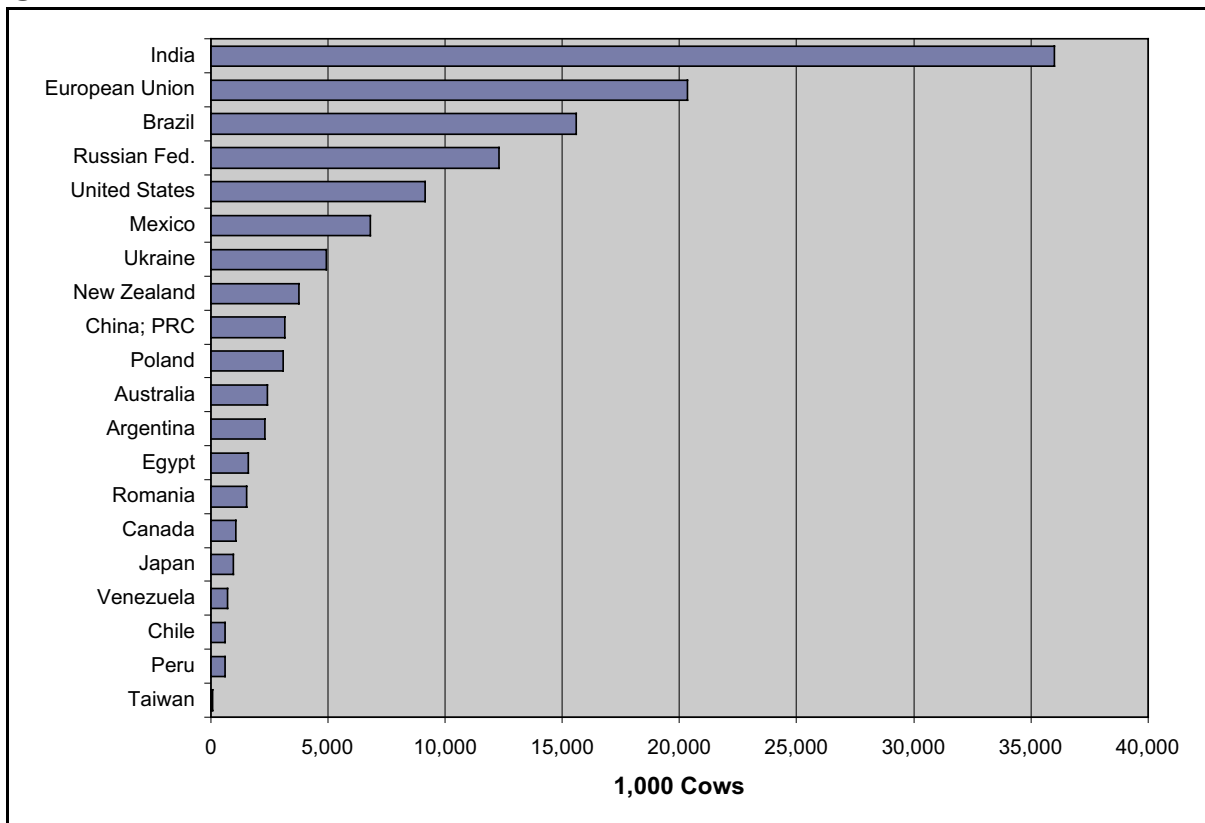
Federation. Milk yields in the countries with the most cows are very low, resulting in a different country ranking based on total milk production.

Because of relatively large cow numbers and high yields, the EU and the US are the two leading countries in world milk production. In 2002, they accounted for a combined 192 million metric tons (MT) or just under half of FAS's world total. The principal "free traders" in dairy products—New Zealand and Australia—produced 3.5 and three percent, respectively, of the 2002 world milk supply.

Dairy Trade Data

The two principal sources of dairy import and export data are USDA's Foreign Agricultural Service (FAS) and the United Nations Food and Agriculture Organization (FAO). FAS data cover major dairy countries that report reliable official statistics on milk and dairy product production and trade and countries for which FAS agricultural attaches can otherwise obtain data. Less-developed countries with indigenous milk sectors are not included in FAS statistics. FAO data are more comprehensive than FAS data, covering all UN member countries. But FAO trade data suffer from several deficiencies. Most important, statistics are provided by member countries and their reliability varies substantially across countries. Also, FAO aggregate statistics include intra-EU trade while FAS data treat the EU as a single trader. FAS is the principal source of data used in this report except as specifically indicated.

Figure 1. Number of Milk Cows, Selected Countries, 2002



Comparing 2002 and 1997 milk production shows significant differences among countries with respect to the evolution of their dairy sectors. In absolute terms, the United States showed the

largest gain in milk production, followed by China, Australia, and New Zealand. In percentage terms, China outpaced all other countries, with milk production increasing 65 percent.

Figure 2. Milk Production per Cow, Selected Countries, 2002

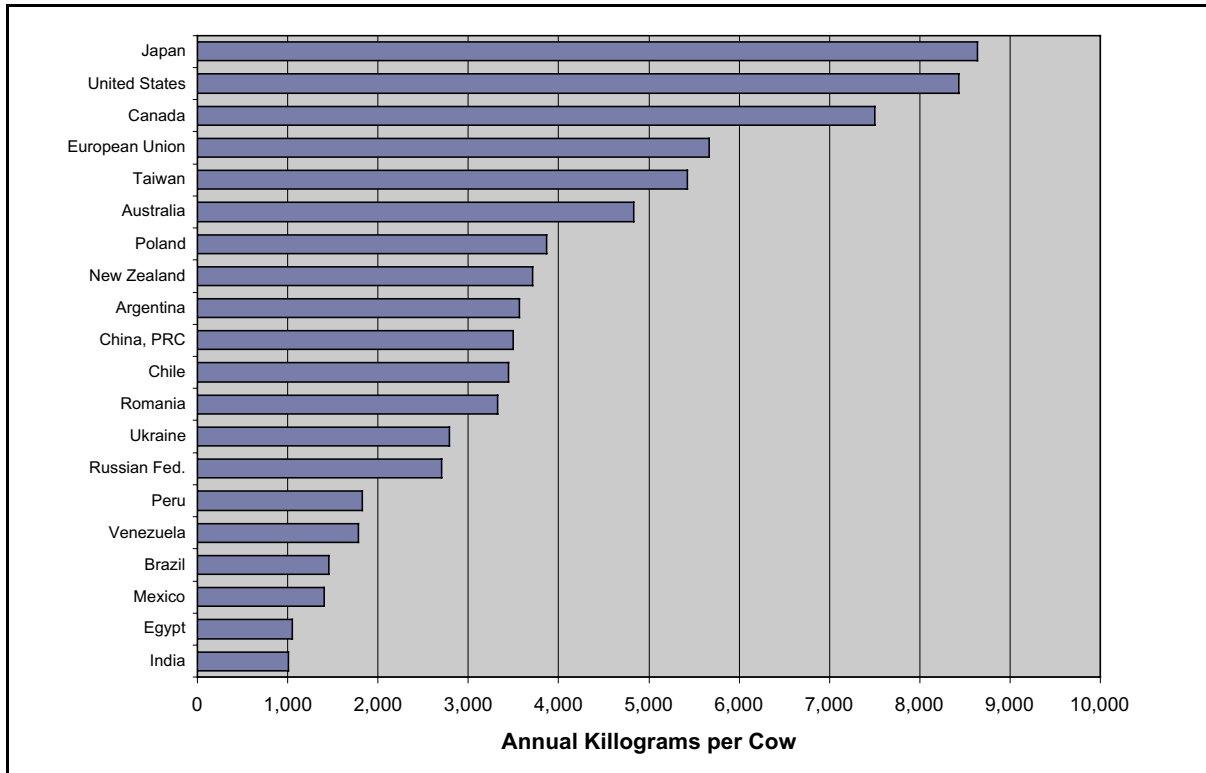
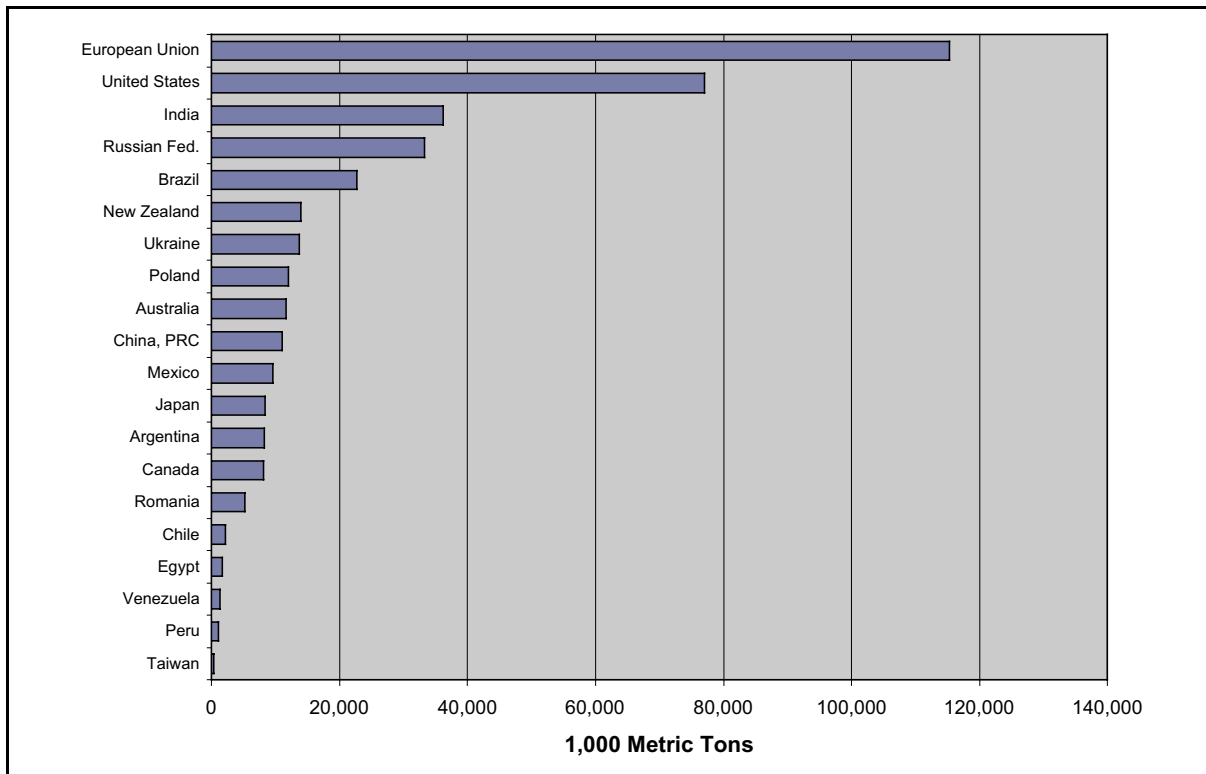


Figure 3. Total Cow's Milk Production, Selected Countries, 2002



Increases in milk production in Oceania were large in percentage as well as absolute terms. Combined milk production in New Zealand and Australia has more than doubled over the last 20 years. These two countries are clearly positioned to remain as major exporters for dairy products.

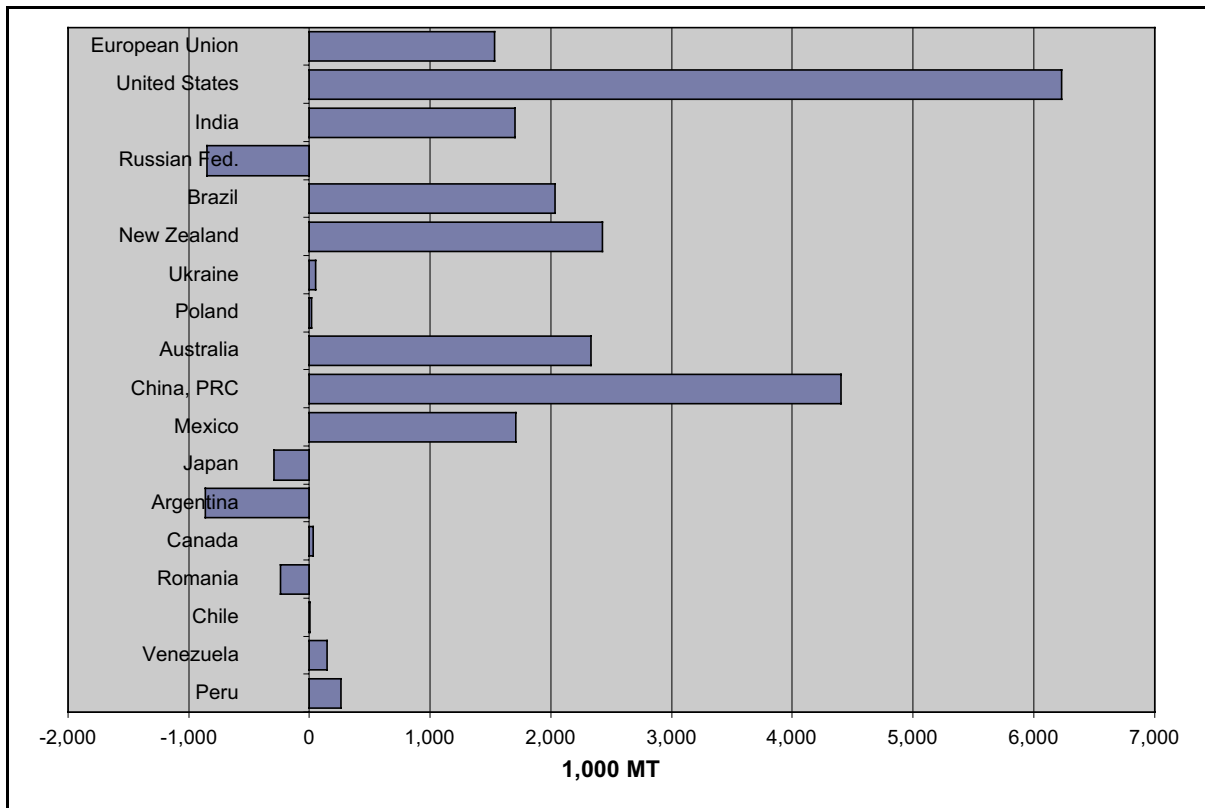
Argentina showed the largest percentage decrease since 1997, down nearly ten percent. Argentina milk production grew by more than 60 percent between 1992 and 1999, but has since fallen by 20 percent due to the economic turmoil in that country. It is uncertain whether Argentina will re-emerge as a significant dairy exporter. In contrast to Argentina, neighboring Brazil has shown very strong growth in production, mainly from large increases in productivity.

After steady growth since the mid-1960s, milk production in Japan has been steady to slightly declining for about ten years. A declining domestic milk supply suggests this densely populated country will likely increase imports of dairy products.

Countries within the former Soviet Union bloc have shown losses in milk production or only small gains since 1997. However, the very large fall-offs in milk cows and milk production seen in the early 1990s following dissolution of the Soviet Union have generally tempered recently, and production is expected to increase.

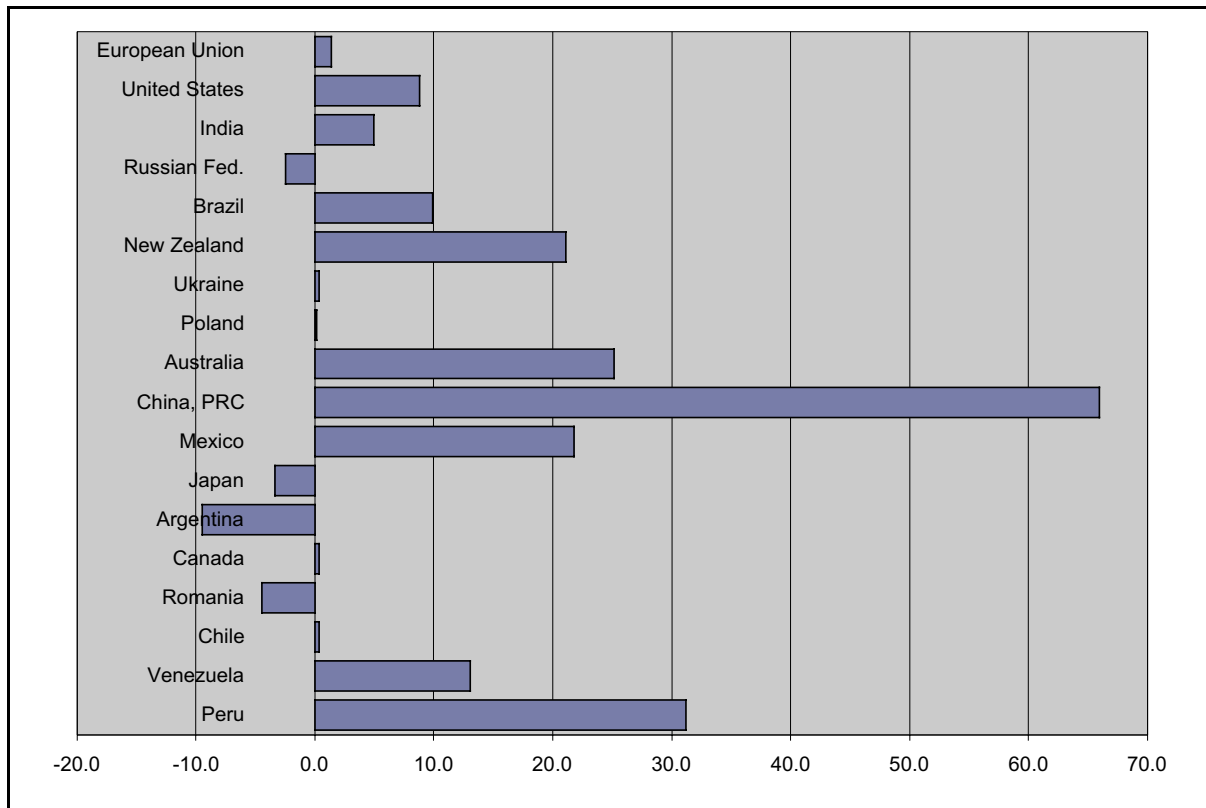
Mexico, a major destination for U.S. dairy exports and a North American Free Trade Agreement (NAFTA) signatory, has shown strong growth in milk production since the early 1990s. This growth followed a sharp drop-off of nearly 50 percent in the decade of the 1980s, when government input subsidies were terminated. Many small farms in the tropical regions of the country, where milk yields were low, exited dairying. Since then, Mexico's dairy sector has restructured, with many dairy operations in the central and northern regions replicating large dry-lot dairies in the Western U.S. This restructuring has significantly increased average productivity of the Mexican dairy herd. However, with population growing at 1.5 percent annually, Mexico will likely remain a large dairy importer for some years to come.

Figure 4. Change in Milk Production, 1997-2002



Milk production in Canada, our other NAFTA partner, has shown virtually no change since 1997. Production quotas in Canada appear to be very effectively holding supply in check.

Figure 5. Percentage Change in Milk Production, 1997-2002



Who Are the Sellers?

Most dairy product trade as measured by volume is in bulk commodities. Butter, cheese, and dry milk powders (nonfat dry milk, and dry whole milk) are the main articles of trade. These commodities accounted for almost 80 percent of the value of all dairy exports (excluding intra-EU exports) in 2001 according to FAO.

USDA's Foreign Agricultural Service reports detailed data on world production, consumption and trade in butter, cheese and milk powders.¹ But world export and import data relating to minor products like whey, ice cream, and cultured products are available only through FAO. Segregated FAO trade data do not include casein and other milk proteins or value-added products like dairy-based food preparations. Consequently, we will focus our attention on butter, cheese, and milk powders.

New Zealand was the source of nearly half of world butter exports in 2002. New Zealand exported 331,000 tons, which exceeded butter production in that country (stocks were drawn down by 35,000 tons). Australian exports represented 16 percent of the world total, with the EU accounting for 26 percent. EU butter exports were well short of the 272,000 tons that may be subsidized under the Uruguay round of the World Trade Organization (WTO) agreement.

Canadian butter exports at 21,000 tons in 2002 represented nearly one-fourth of Canadian butter production. Canada uses subsidized butter exports to clear markets of excess butterfat under its regulated milk pricing system. The U.S. is not a player in world butter markets, exporting only 2,000 tons. While butter exports are eligible for Dairy Export Incentive Program (DEIP) subsidies,

¹ FAS 2002 supply and distribution tables for butter, cheese, nonfat dry milk, and dry whole milk are shown in the Appendix to this report.

U.S. purchases of butter under the dairy price support program and related government stocks were not excessive in 2002 and no DEIP allocations were made.

Figure 6. Composition of World Dairy Exports, 2001*

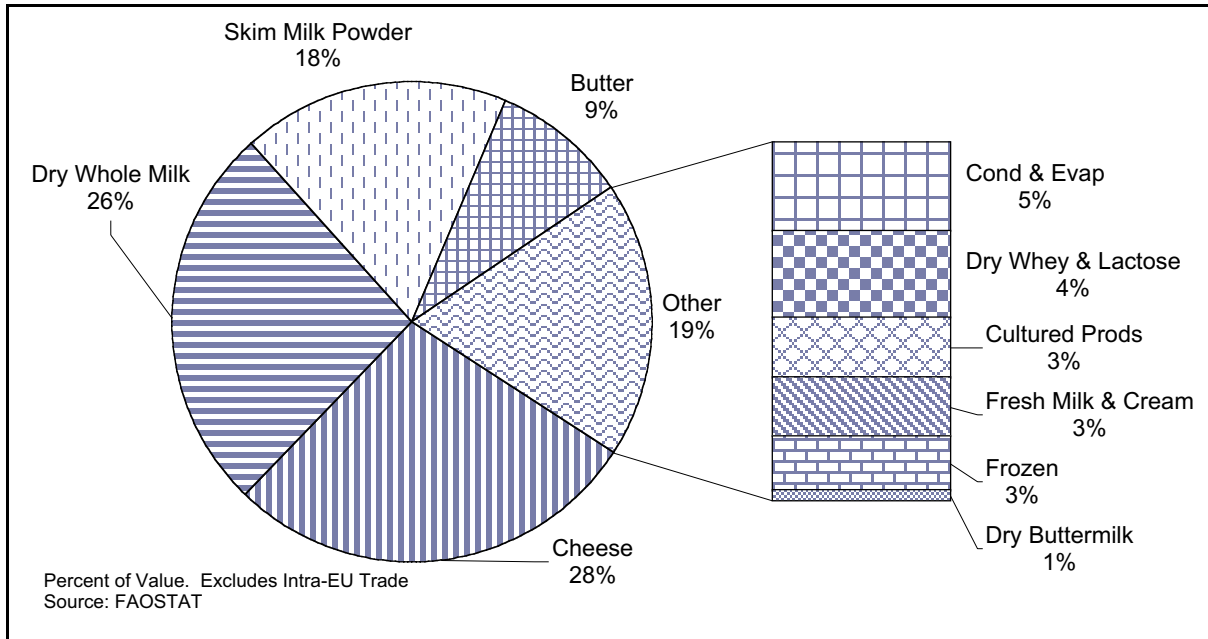
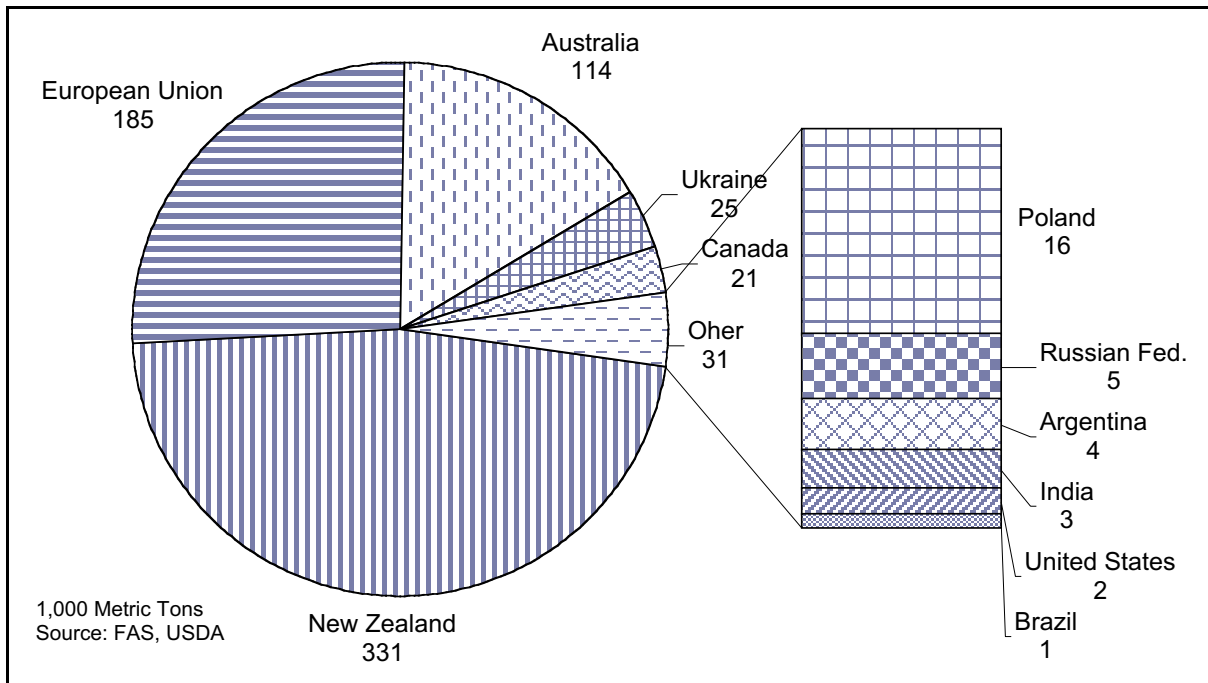


Figure 7. World Butter Exports, 2002



EU countries hold the lead in world cheese exports, with 2002 volume slightly less than the combined export volume of Australia and New Zealand. The top three exporters accounted for over 85 percent of exports sales. The U.S. held fourth place with about five percent.

EU cheese exports are a combination of subsidized bulk commodity cheeses and more specialized varieties exported without subsidies. Under the current WTO agreement, the EU is permitted maximum annual subsidized cheese exports of 321,000 tons. Actual exports in 2002

were 44 percent larger than the maximum subsidy volume. This indicates that the EU exports substantial volumes of specialty-type cheeses without subsidy assistance.

Figure 8. World Cheese Exports, 2002

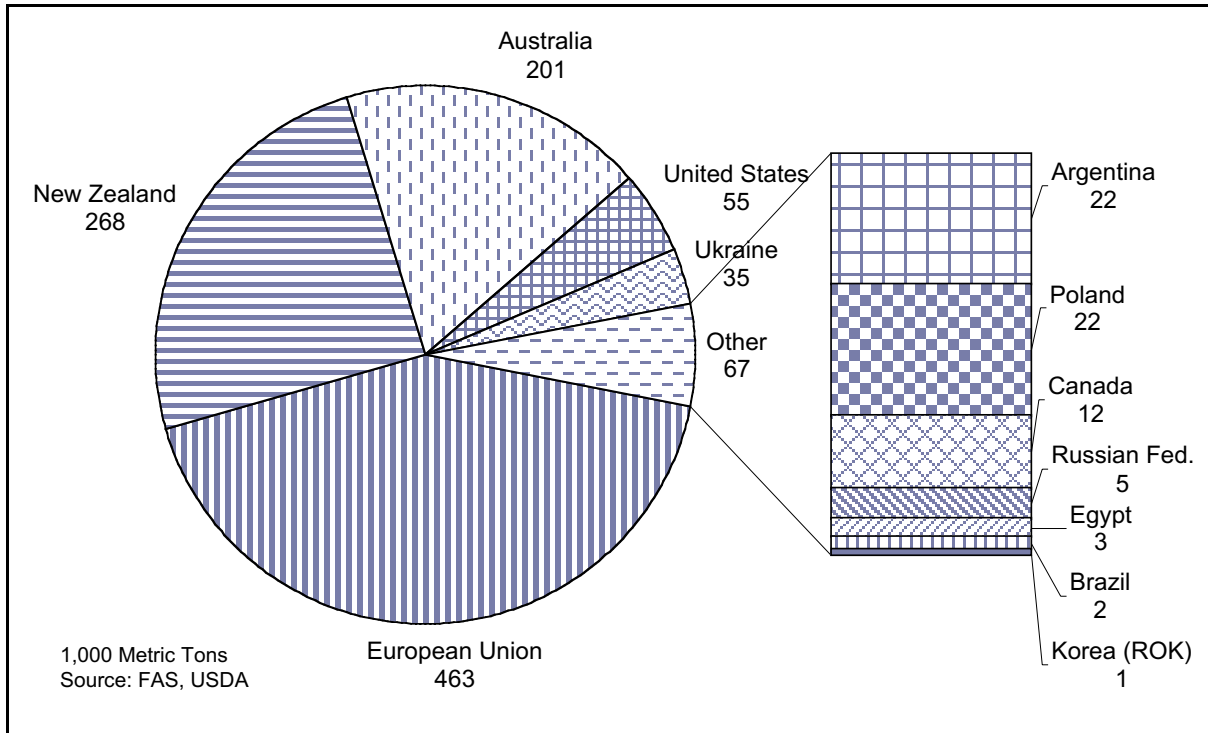
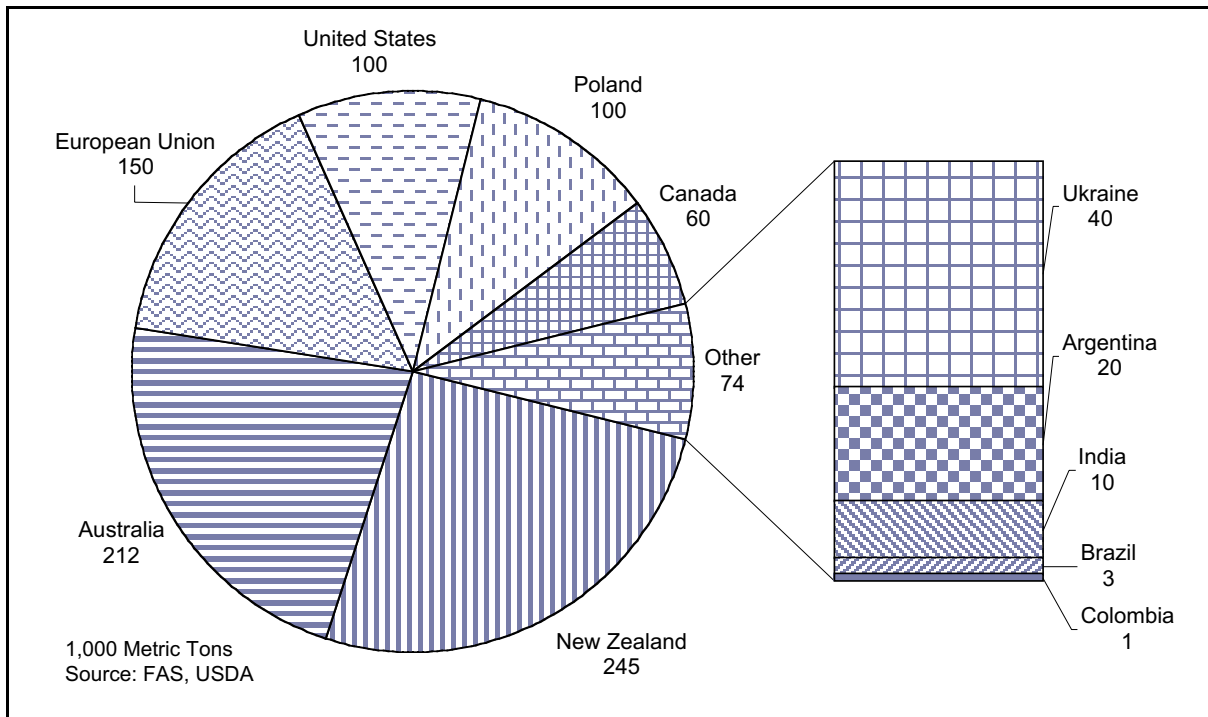


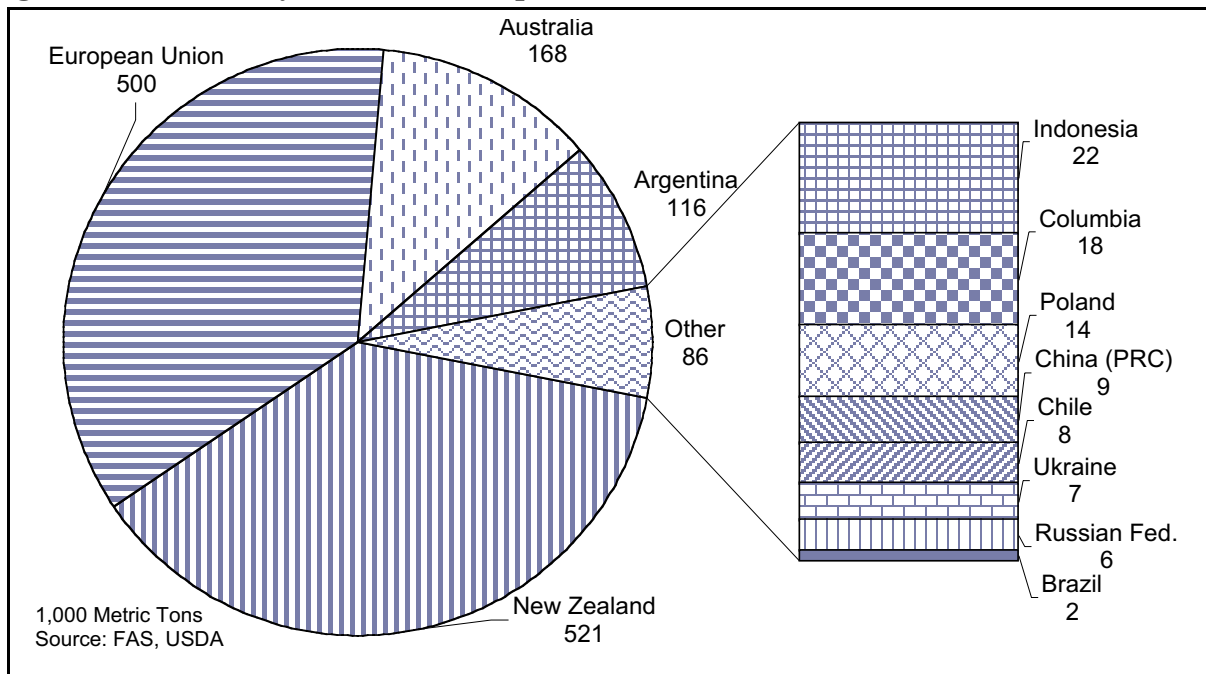
Figure 9. World Nonfat Dry Milk Exports, 2002



Zealand and Australia together, who also supply just under half of world nonfat dry milk exports. EU exports in 2002 were only 55 percent of what are permitted to be subsidized under the WTO.

Compared to other major dairy products, the U.S. is a bigger player in world nonfat dry milk markets, accounting for 11 percent of total exports in 2002. Much of U.S. nonfat dry milk exports are subsidized under the DEIP. Under WTO rules, the U.S. can subsidize up to 68,000 tons of nonfat dry milk annually compared to 100,000 tons actually exported in 2002.

Figure 10. World Dry Whole Milk Exports, 2002



Canada exported 60,000 tons of nonfat dry milk in 2002. These exports—60 percent of Canadian production of nonfat dry milk—represented subsidized removal of nonfat solids from its regulated marketing system.

New Zealand and Australia supply half of world whole milk powder exports. The EU accounts for another 36 percent. EU whole milk exports are subsidized under the WTO “other dairy products” category, which allows subsidies on 939,000 tons of dairy products other than butter, cheese, and nonfat dry milk. Very little dry whole milk is produced in the U.S. and none is exported.

Who Are the Buyers?

Imports of dairy products are less concentrated among countries than exports. Butter is the only major traded dairy commodity for which a single country (both the EU and the Russian Federation) accounts for more than 25 percent of total imports. Russia’s dairy sector has not yet recovered from dissolution of the Soviet Union, and butter imports make up for a loss in domestic production. The EU—also a major butter exporter—imports butter as part of long-term agreements between New Zealand and United Kingdom countries.

The U.S. was the leading importer of cheese in 2002, but was nearly matched by Japan. Russia is in third place followed by the EU, whose cheese imports represent more than one fourth of its exports. Mexico imported 65,000 tons of cheese in 2002, much of it from the U.S. No other country accounted for more than five percent of world imports.

Imports of milk powders (skim and whole milk) are widely scattered among countries. Mexico is the largest nonfat dry milk importer, much of which is used for reconstitution into beverage milk for distribution to needy families. Pacific Rim countries are major buyers of both whole and skim milk powder.

Figure 11. World Butter Imports, 2002

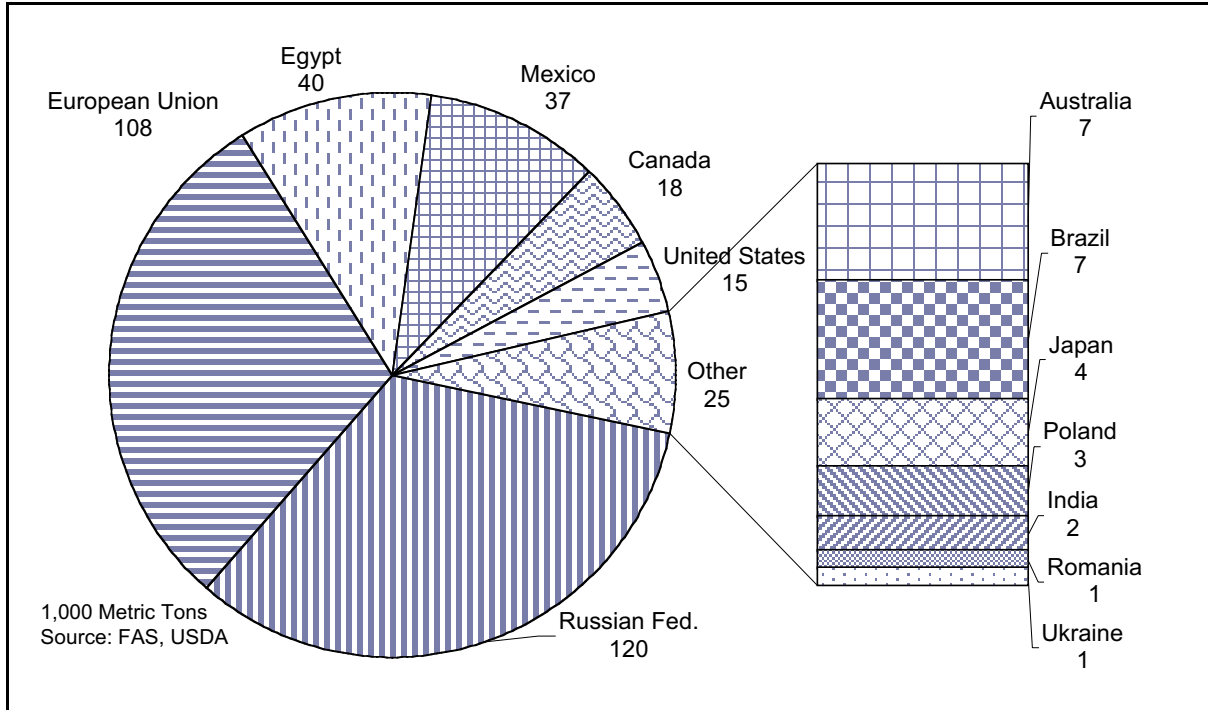
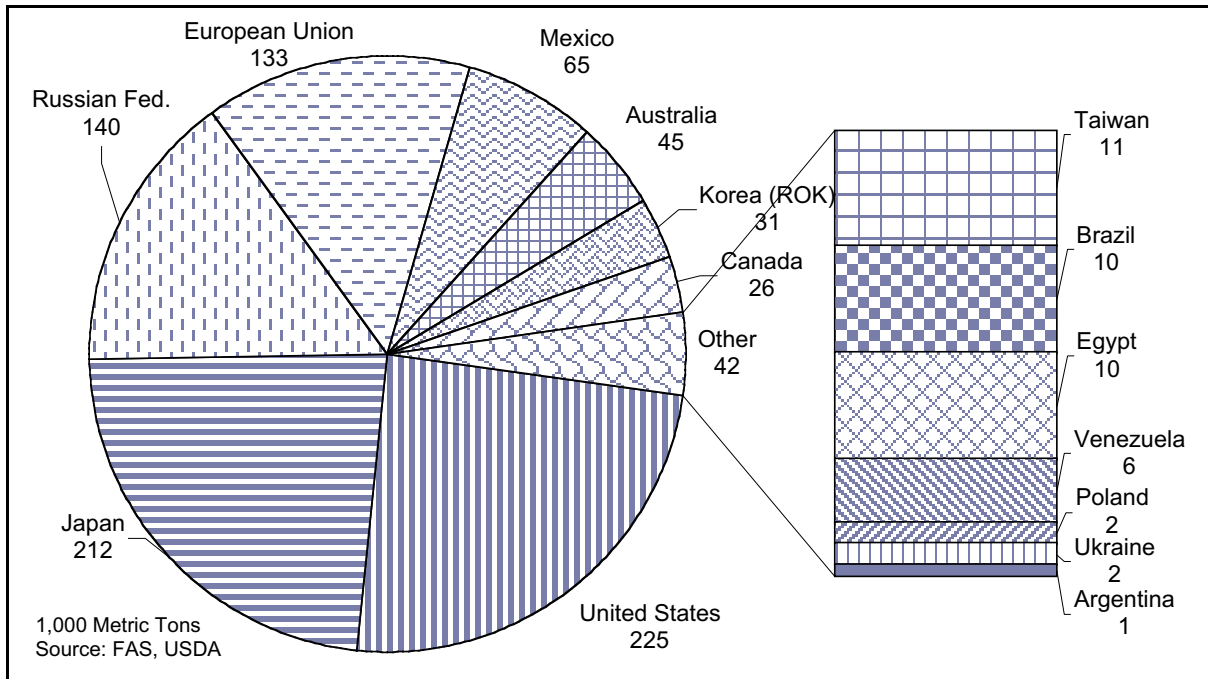


Figure 12. World Cheese Imports, 2002



Export Trends

According to the FAO, the nominal value of world trade in dairy products more than doubled between 1986 and 2001, from \$6 billion to \$14 billion. But using the U.S. Consumer Price Index as a deflator, the real value of trade has increased by a more modest one-third, and has been practically flat since 1995.

Measured in tonnage, the volume of trade has increased about 70 percent since 1986. Constant real value of exports combined with increasing volume suggests two things: (1) the mix of world

trade continues to be dominated by lower-value bulk commodities, and (2) world prices for bulk commodities have shown little sustained strength in recent years.

Figure 13. World Nonfat Dry Milk Imports, 2002

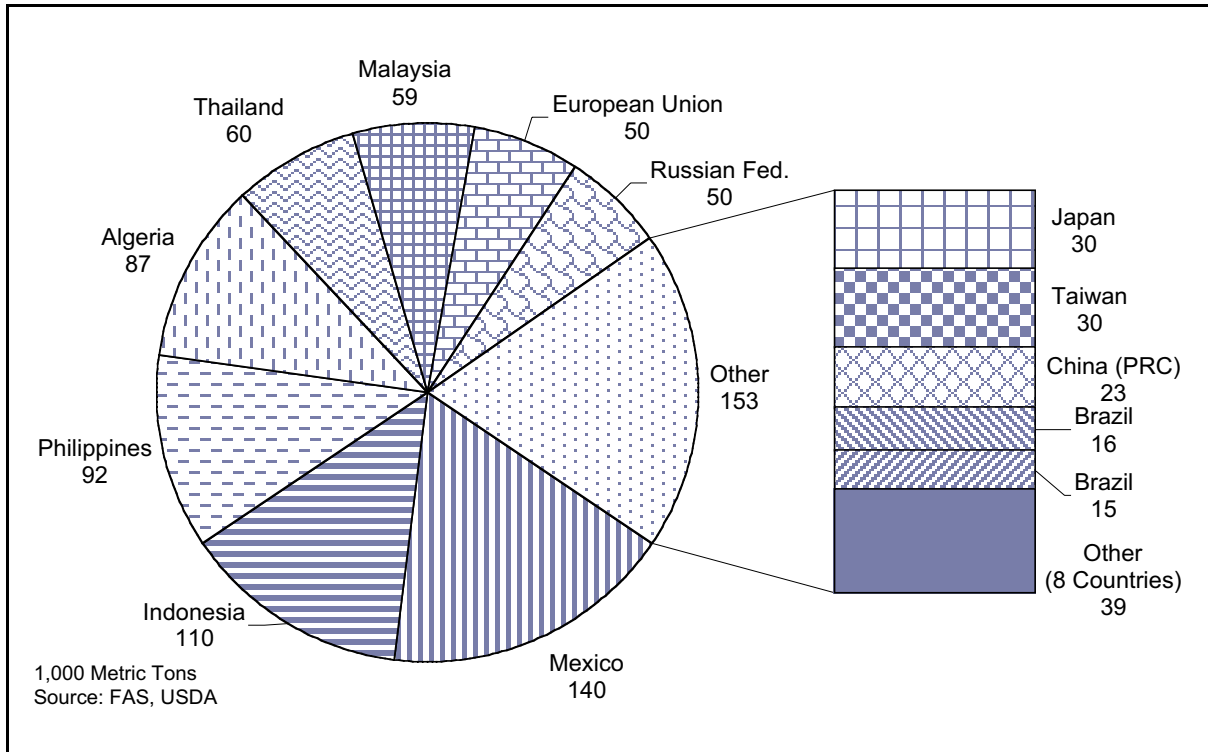


Figure 14. World Dry Whole Milk Imports, 2002

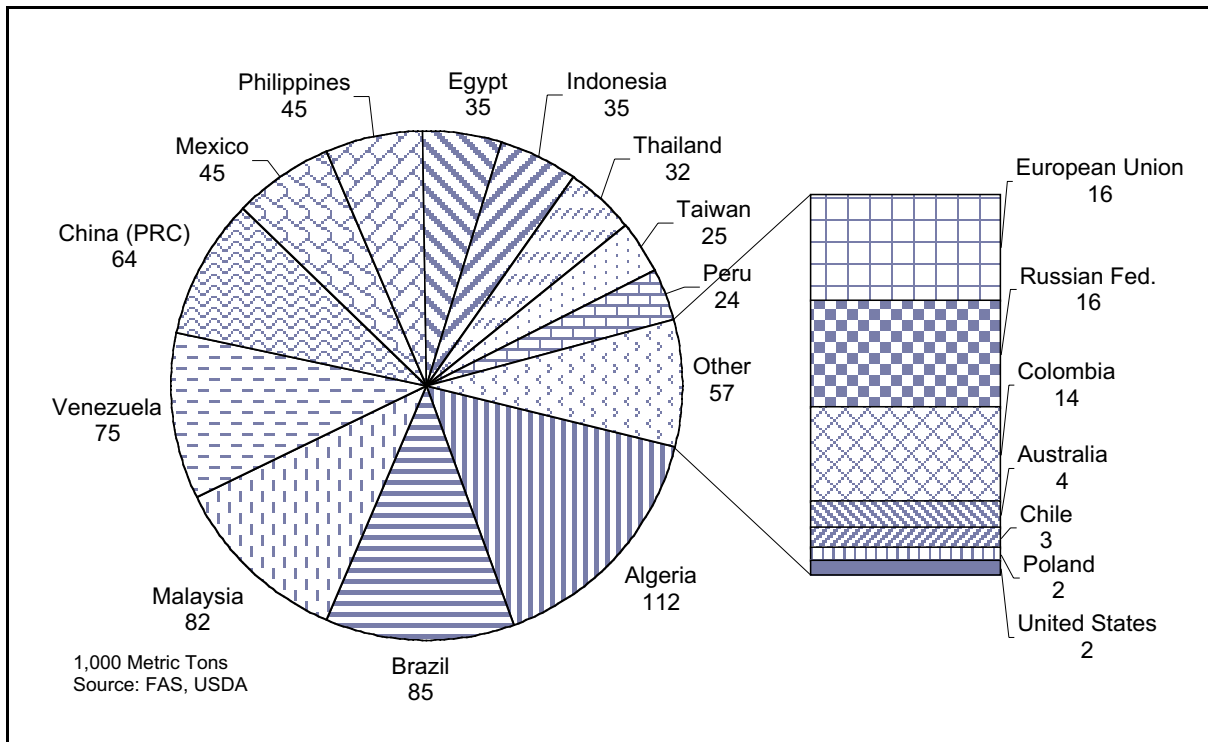


Figure 15. Growth in World Dairy Product Exports

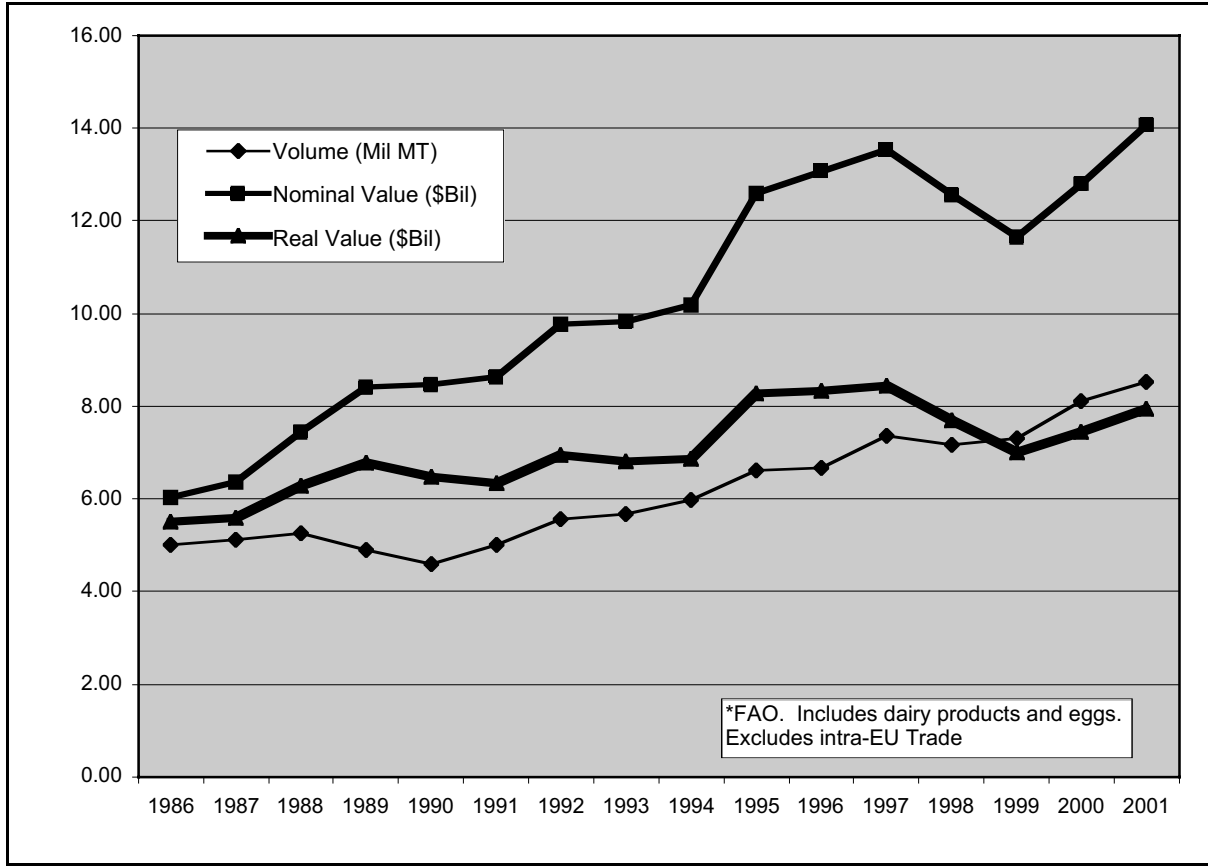
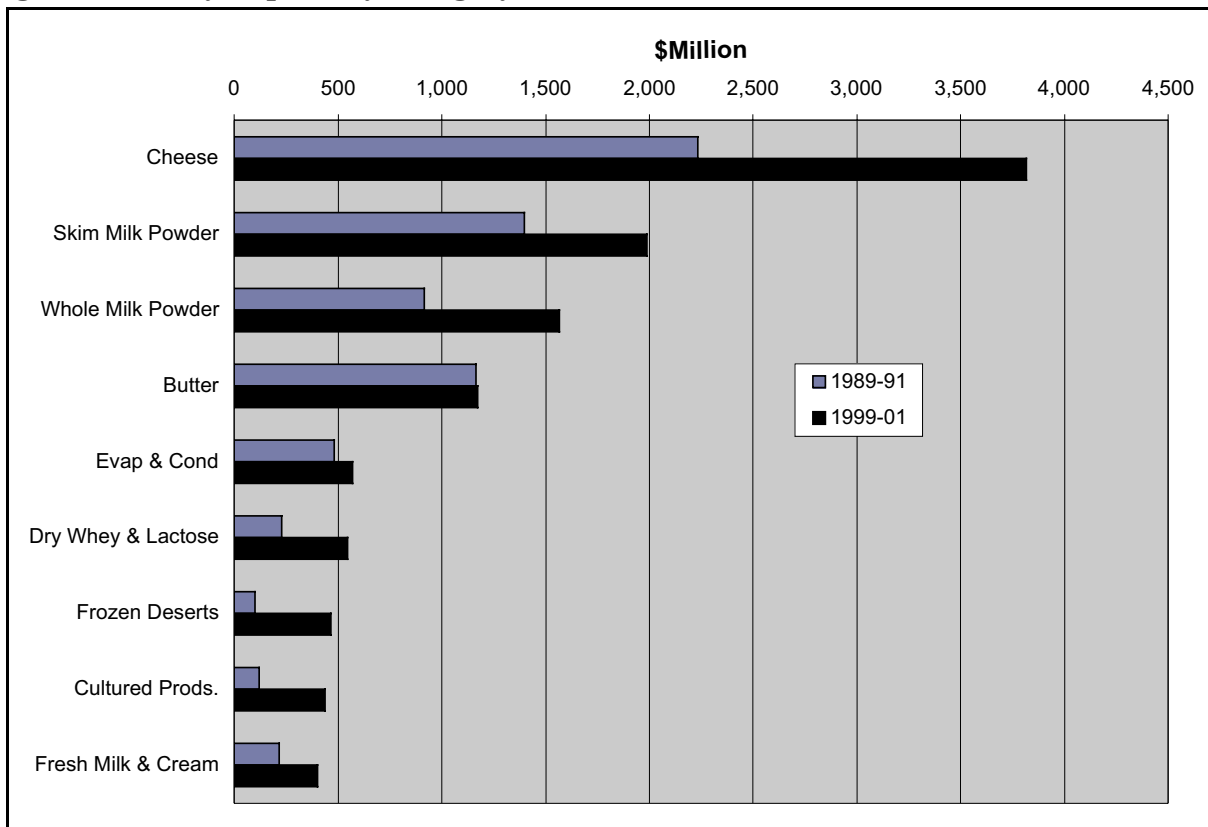


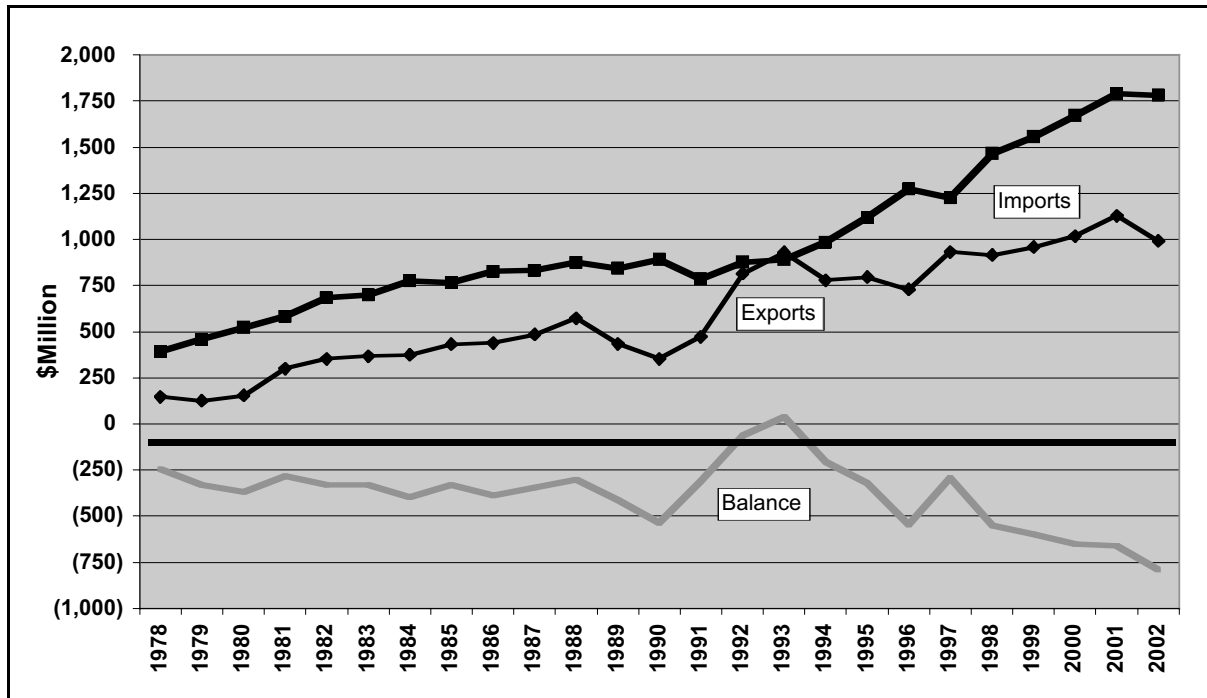
Figure 16. Dairy Exports by Category



II U.S. Dairy Trade

The U.S. is and has long been a net importer for dairy products. From the late 1970s through the early 1990s, our dairy trade deficit was \$250 to \$500 million. Strong butter and nonfat dry milk exports in 1992 and 1993 temporarily closed the trade gap. But it has been growing since and is approaching \$1 billion.

Figure 17. U.S Dairy Trade



Composition of U.S. Dairy Exports and Imports

The composition of our dairy exports and imports are quite different. 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 (including lactose) together made up more than half of the value of U.S. dairy exports in 2002.

Total dairy export value increased by only \$63 million between 1993 and 2002. Among major categories, whey and lactose grew most rapidly (+\$105 million) followed closely by cheese (+\$102 million). Exports of food preparations increased by \$82 million. Butter exports were \$176 million less in 2002 than 1993, and nonfat dry milk exports were down \$41 million.

Most U.S. dairy product imports are in three product categories—cheese, concentrated milk proteins, and food preparations. Cheese made up 44 percent of our dairy import value in 2002. Milk proteins, which consist of Milk Protein Concentrate (MPC), casein, and caseinates represented another 32 percent, and food preparations 16 percent.²

Within the milk protein category of imports, casein and caseinates are classified as industrial rather than dairy products by U.S. Customs. While these products are used in many industrial applications, some forms substitute for nonfat dry milk in food uses. In 2002, caseins and caseinates represented about 75 percent of the value of U.S. milk protein imports.

² For a comprehensive discussion of U.S. imports of MPC & casein, see Jesse, E.V. *U.S. Imports of Concentrate Milk Proteins: What We Know and Don't Know*, Marketing & Policy Briefing Paper No. 80, Dept. of Agricultural and Applied Economics, University of Wisconsin-Madison, February 2003

Cheese showed the largest growth in imports over the last ten years—up \$323 million. Next in line were casein products (+\$233 million) and food preparations containing milk (+\$222 million). Total import value was up by \$891 million.

Figure 18. Total U.S. Dairy Exports, 2002

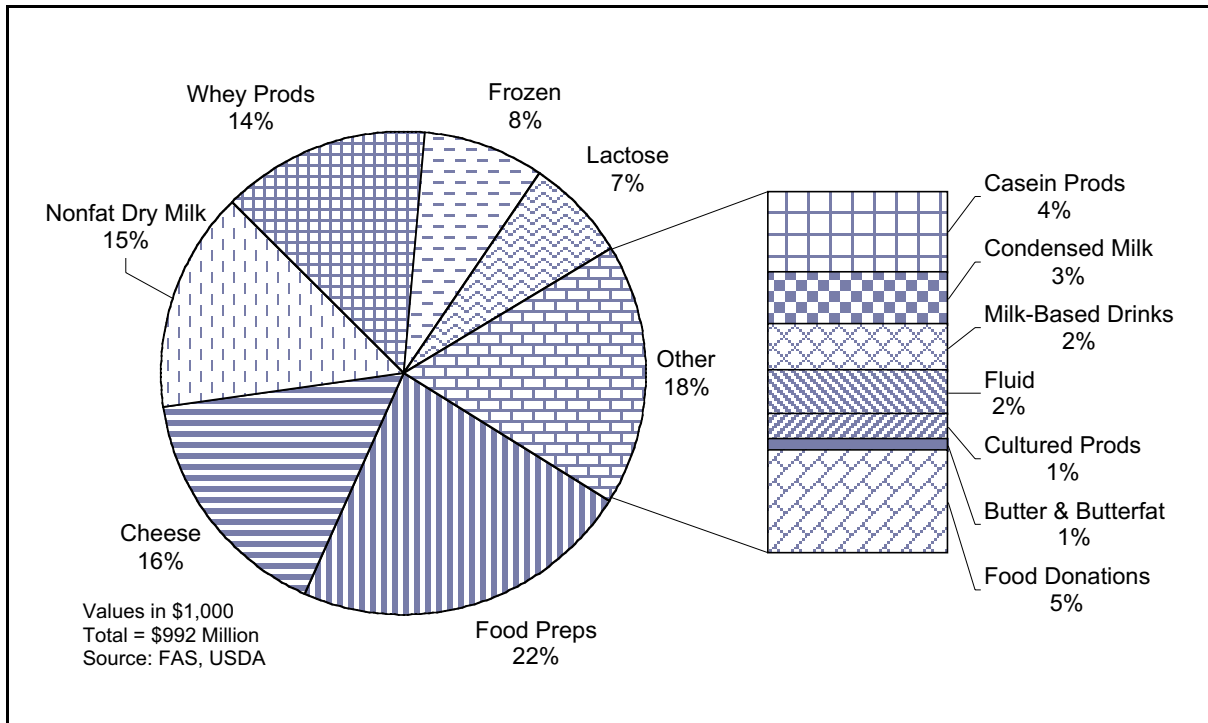


Figure 19. Change in U.S. Dairy Exports, 1993-2002

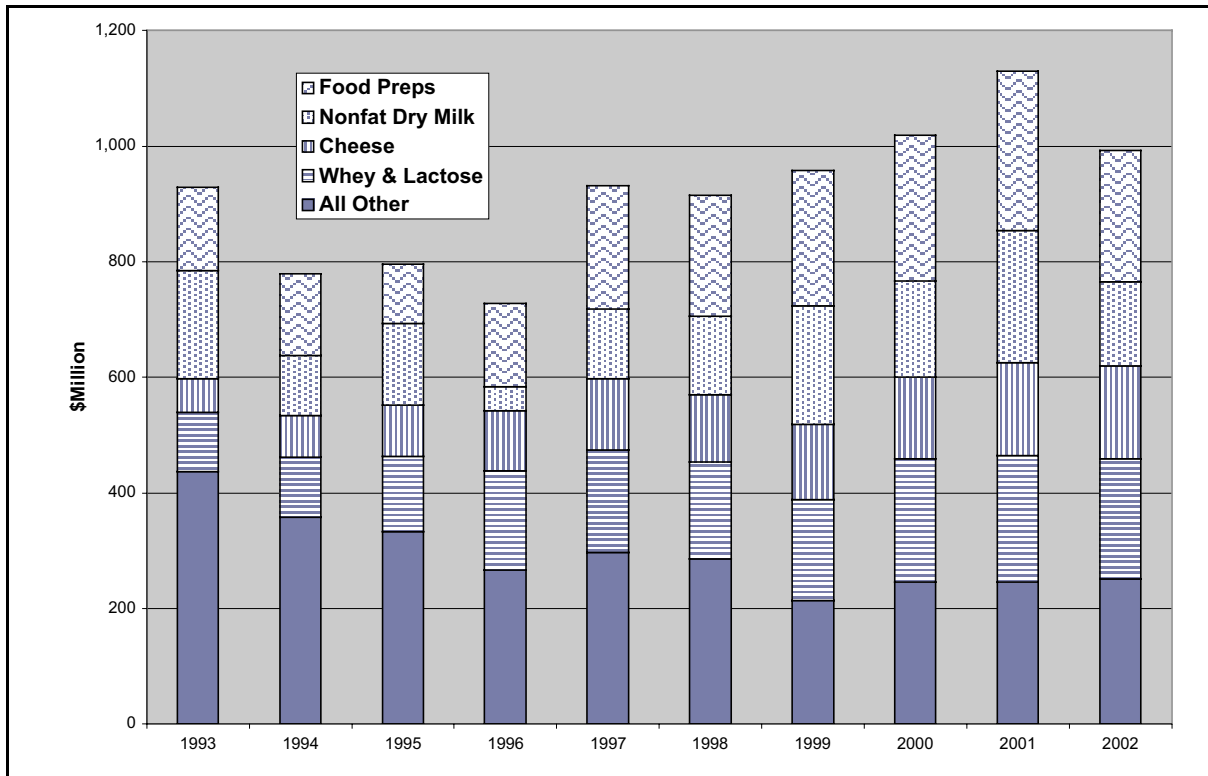


Figure 20. Total U.S. Dairy Imports, 2002

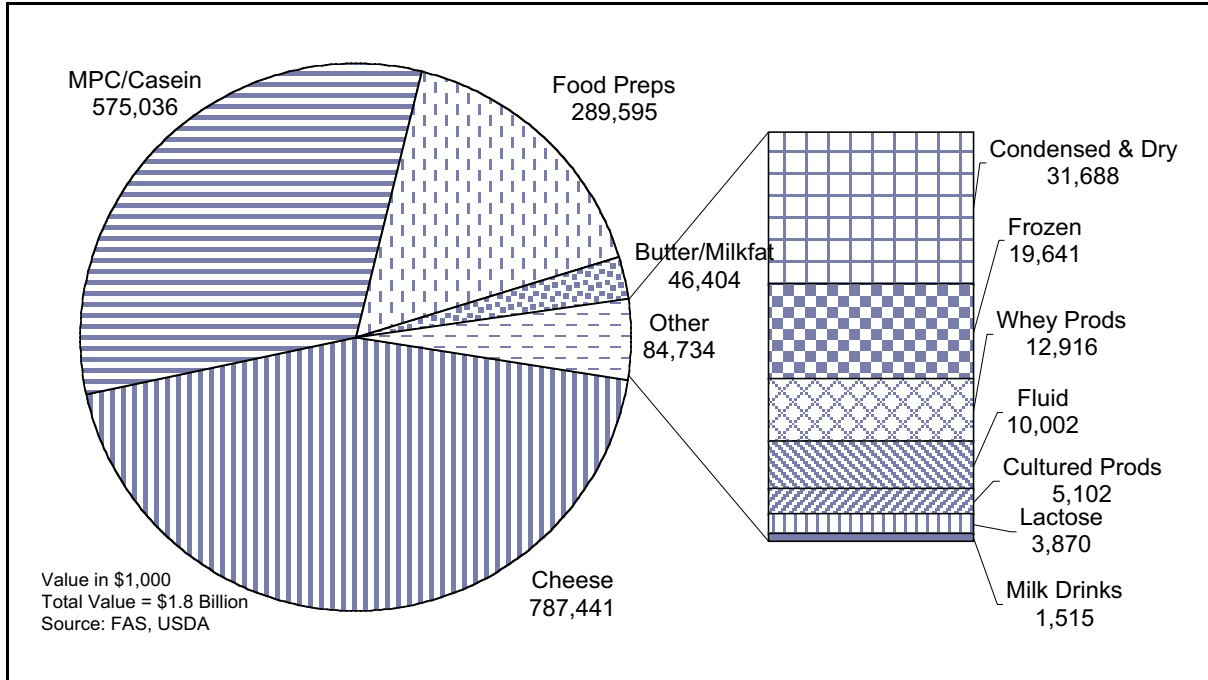
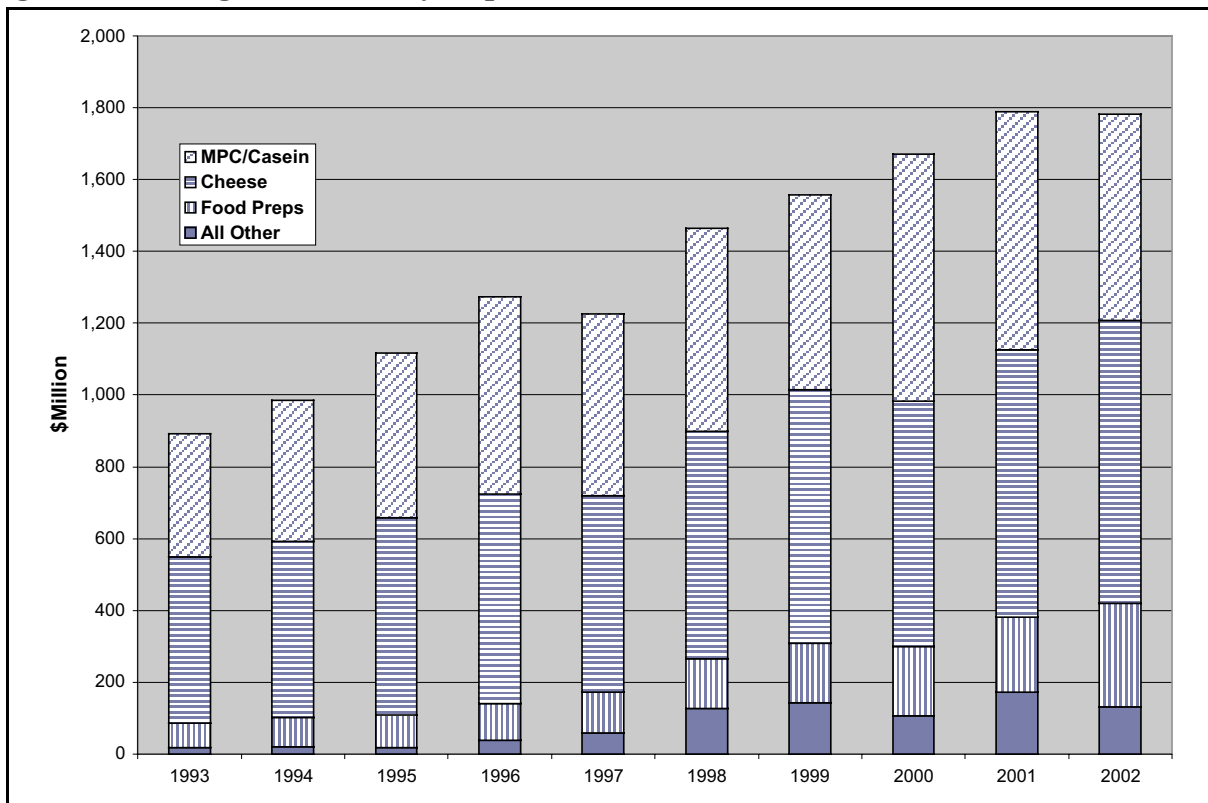
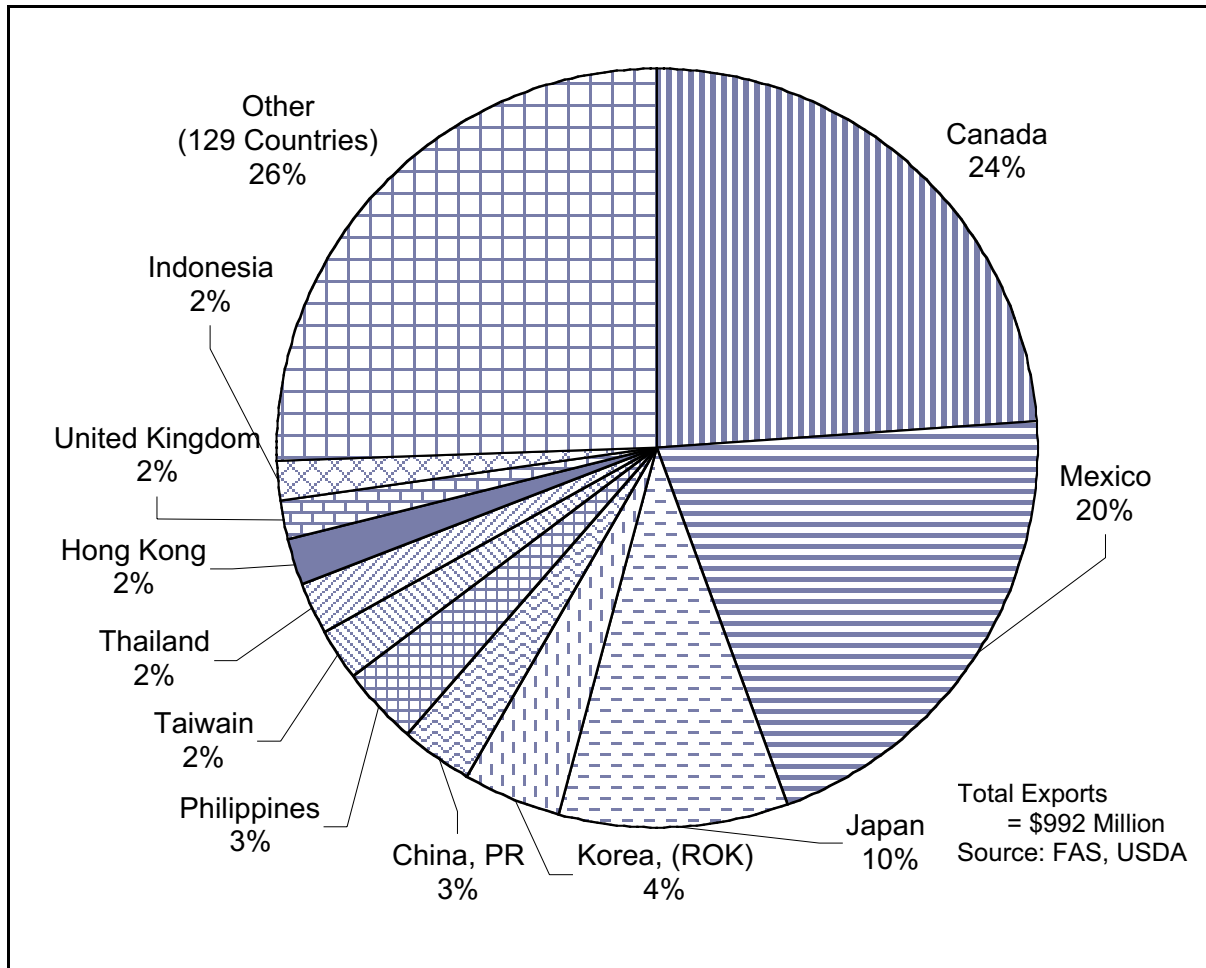


Figure 21. Change in U.S. Dairy Imports, 1993-2002



U.S. Dairy Trading Partners

Our principal dairy export markets are our closest neighbors—Mexico and Canada accounted for 44 percent of U.S. exports in 2002. The major export to Mexico is nonfat dry milk. Exports to Canada are largely in dairy-based food preparations.

Figure 22. Destination of U.S. Dairy Exports, 2002

Several Pacific Rim countries took more than a quarter of our exports. These exports are also dominated by dairy-based food preparations. The remainder of our exports were to 129 other countries ranging from Afghanistan to Zimbabwe.

Over the last ten years, U.S. dairy exports have become increasingly concentrated in Asia and Canada. Total exports between 1993 and 2002 increased about seven percent. In the meantime, exports to Asian destinations increased about 50 percent and exports to Canada jumped four-fold.

The major sources of U.S. dairy imports are Oceania, Canada, and the European Union (EU). New Zealand and Australia together accounted for 26 percent of U.S. dairy exports in 2002 and seven EC countries accounted for a combined 39 percent. Twelve percent of 2002 U.S. dairy imports were sourced from Canada.

The total value of U.S. Dairy imports exactly doubled between 1993 and 2002. Over this time imports from Australia and New Zealand increased by 167 percent. About 36 percent of these Oceania imports were in the form of casein products and MPC in 2002. Imports from the EU showed more modest gains, about 45 percent. Cheese accounted for more than 60 percent of 2000 EU exports to the U.S.

Figure 23. U.S. Dairy Exports, 1993-2002

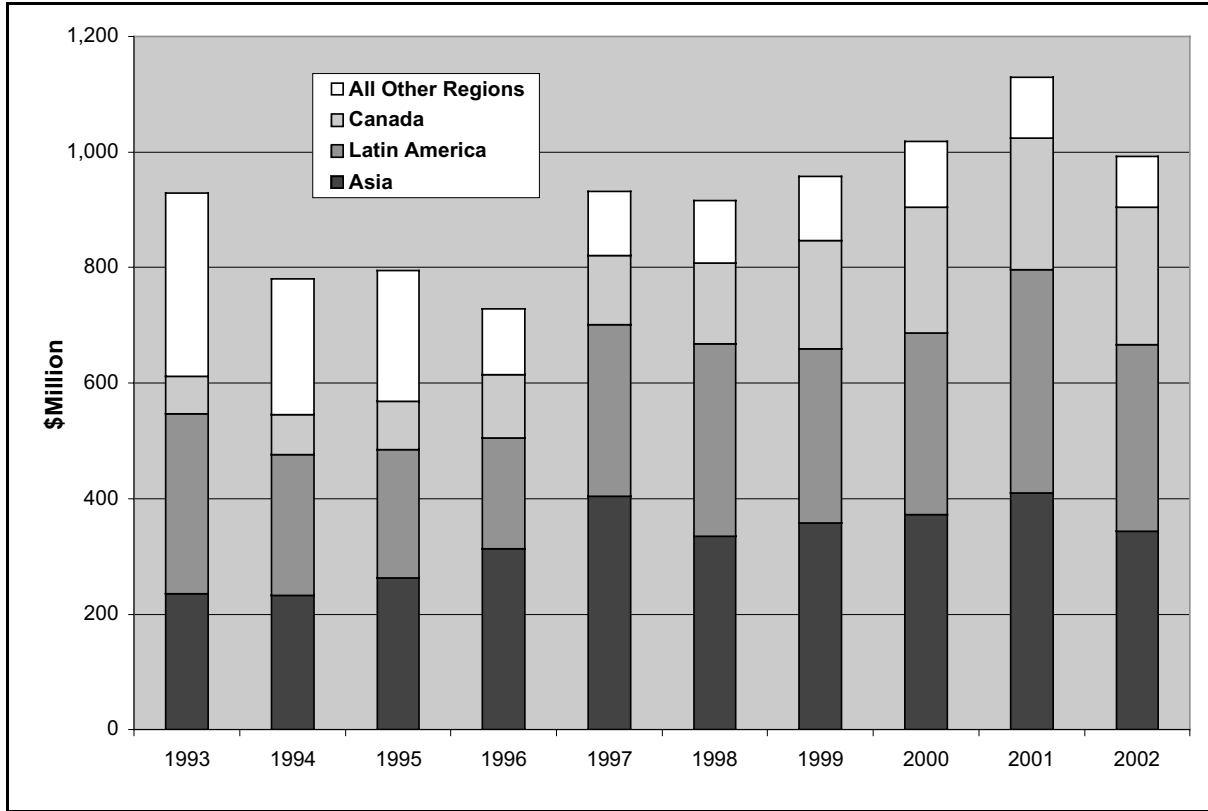


Figure 24. Source of U.S. Dairy Imports, 2002

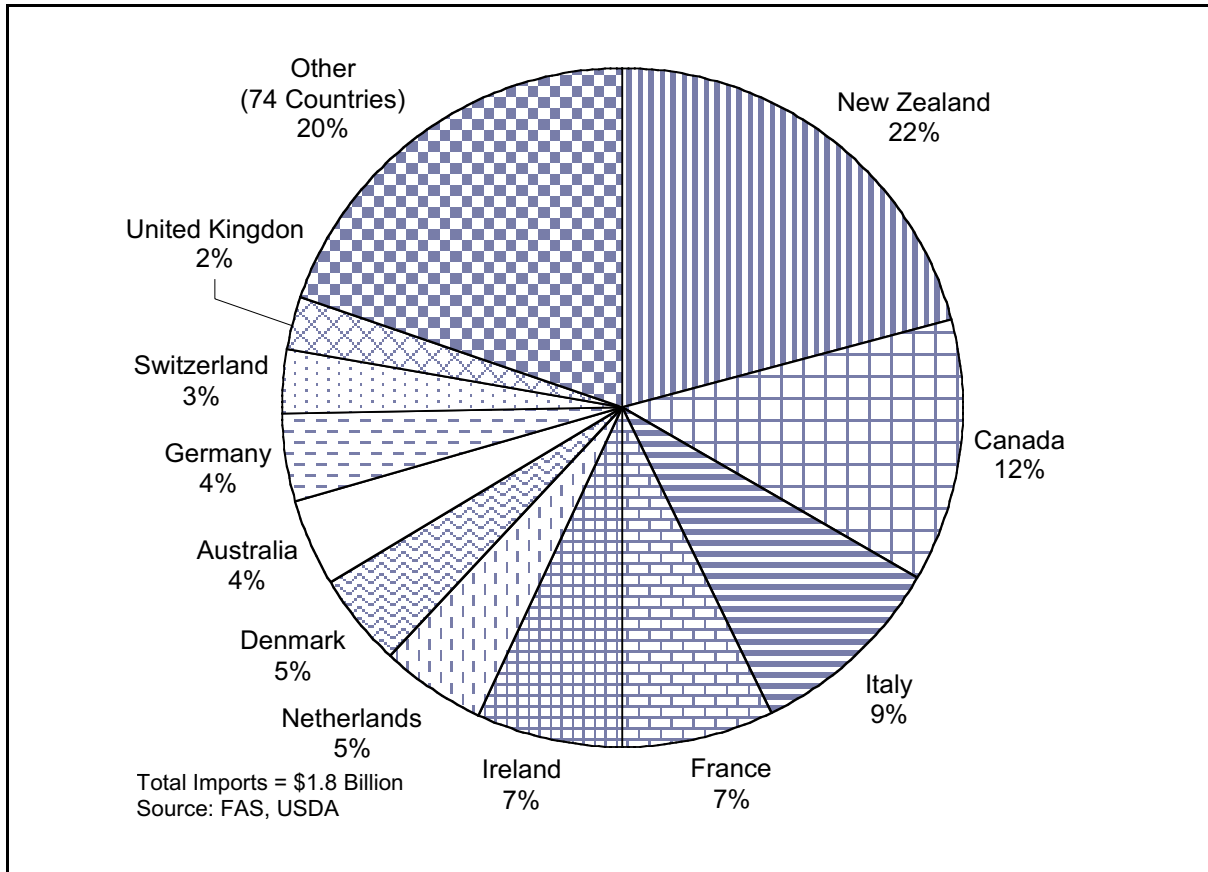


Figure 25. U.S. Dairy Imports, 1993-2002

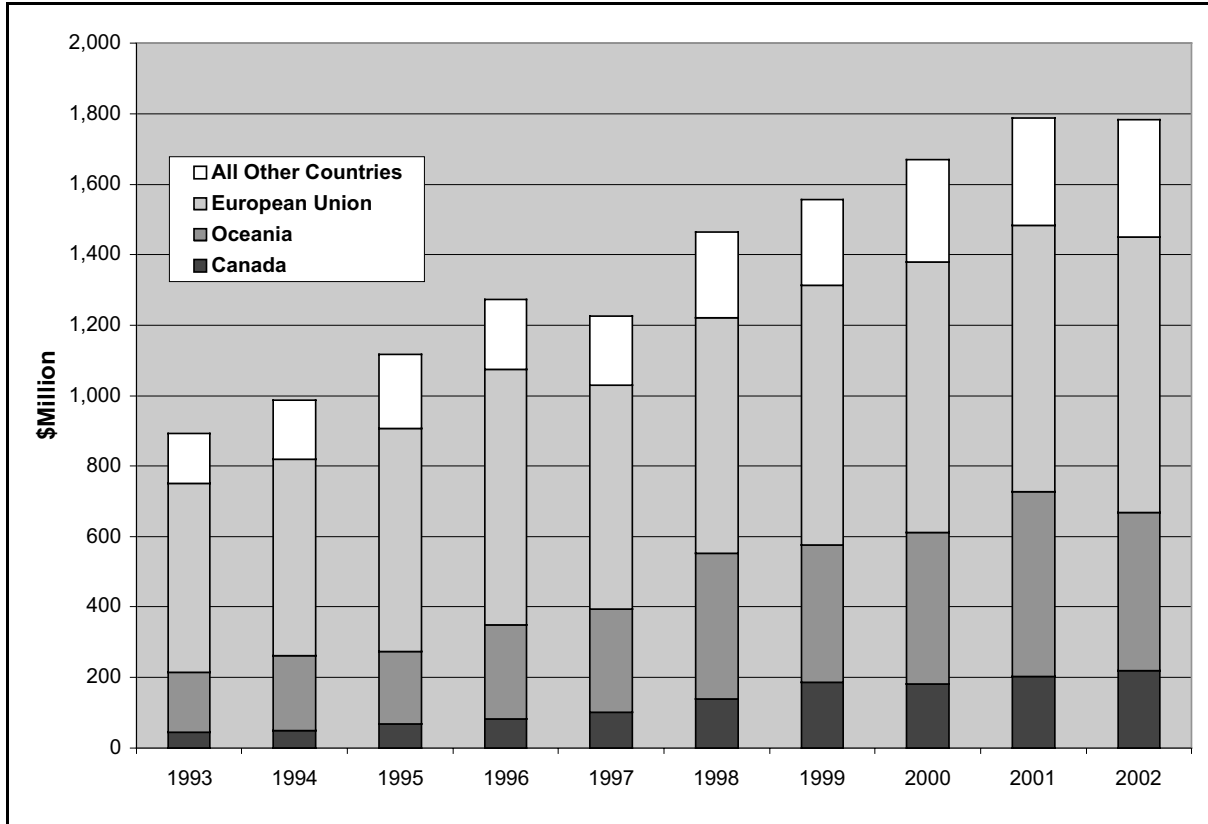
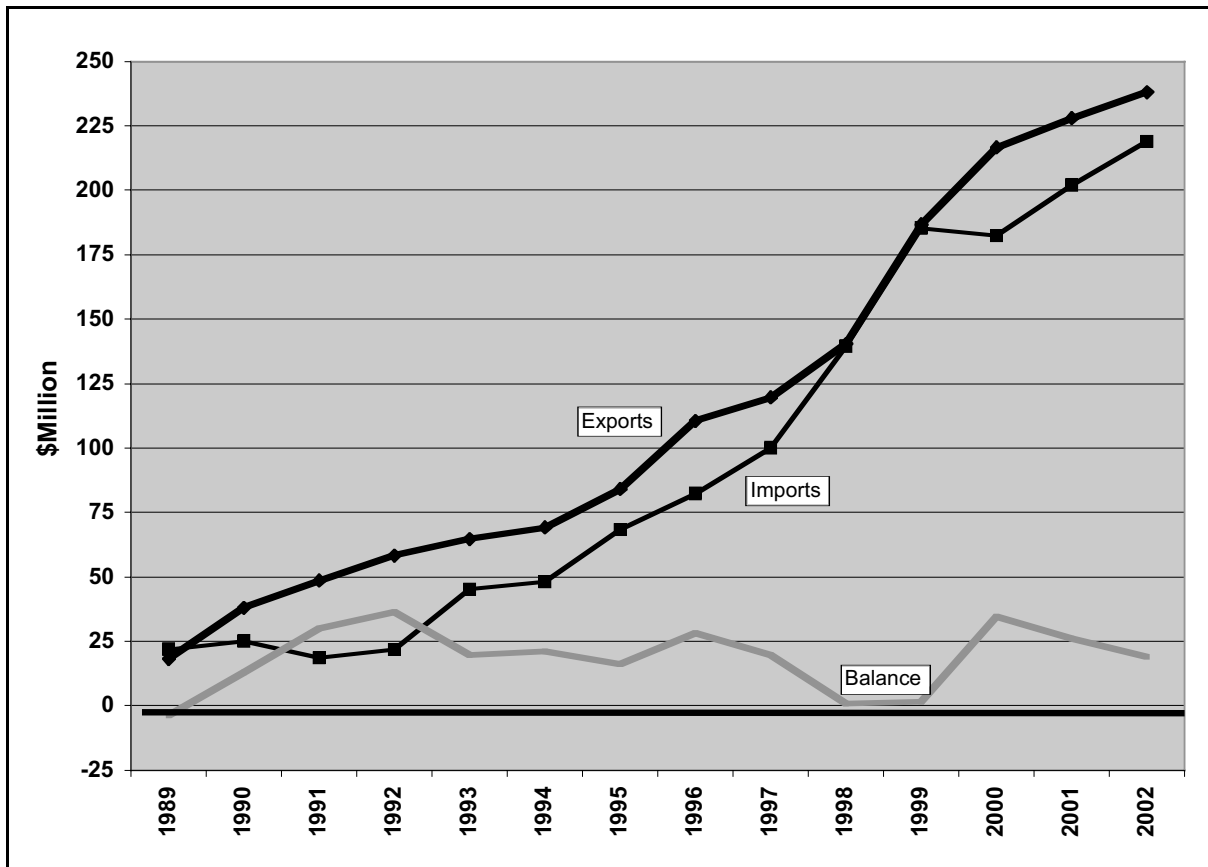


Figure 26. U.S.-Canada Dairy Trade Balance



U.S. dairy imports from Canada in 2002 were more than eight 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 two-thirds of the imports from Canada are dairy food and confectionery products and dairy-based spreads.

Figure 27. U.S. Exports to Canada, 2002

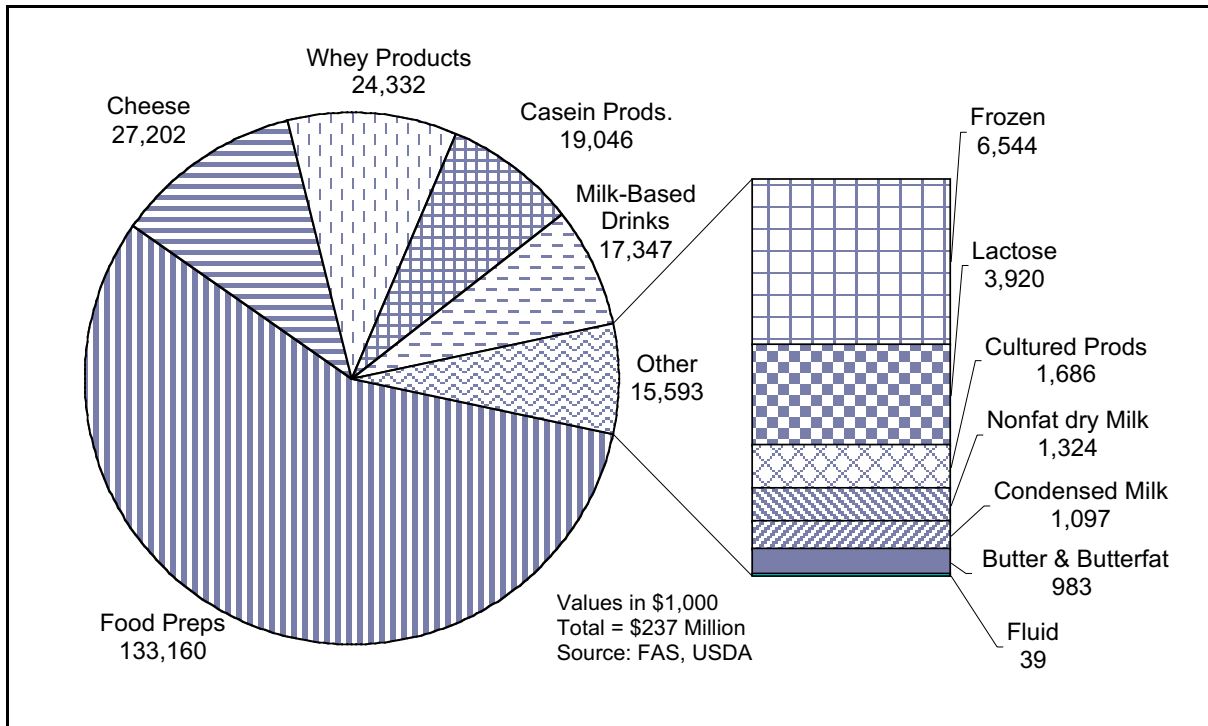
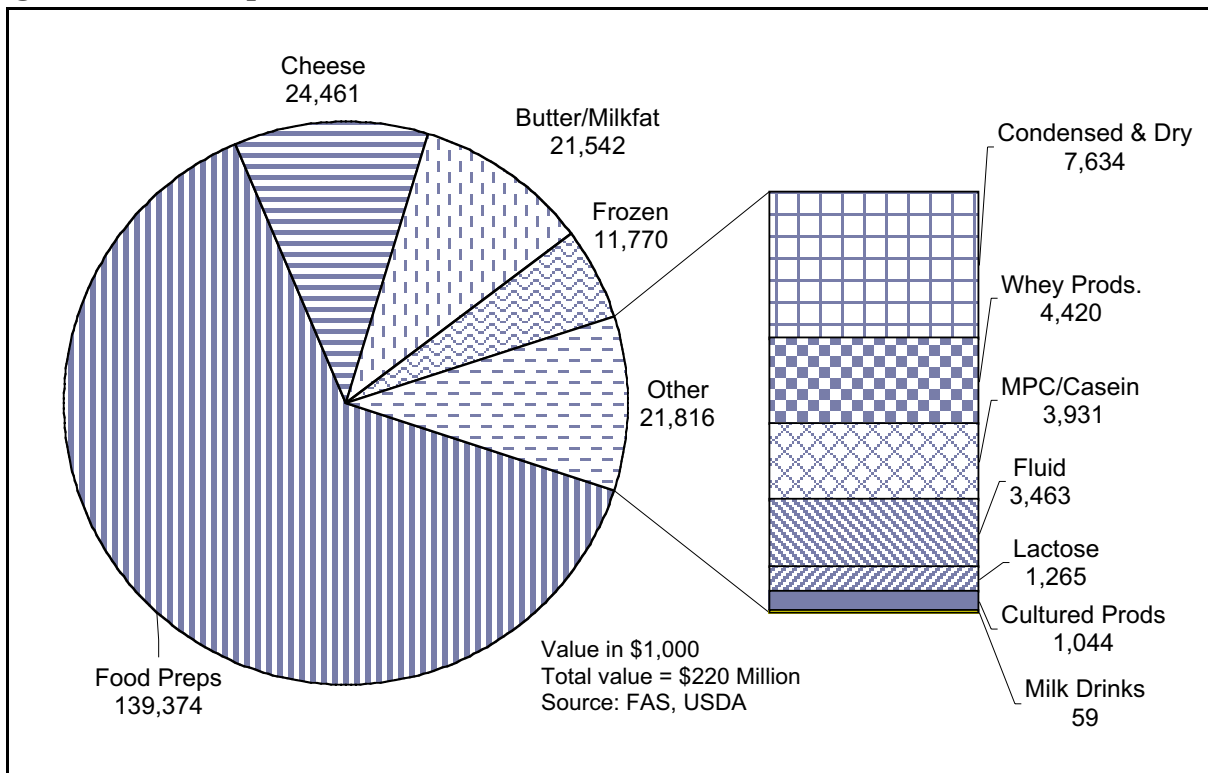


Figure 28. U.S. Imports from Canada, 2002



The importance of inter-American dairy trade merits a closer look at Canadian and Mexican trade patterns. The U.S. has long maintained a small positive dairy trade balance with Canada. Exports and imports have shown remarkably similar trends since 1989. The composition of imports and exports is also remarkably similar. The largest traded dairy category is dairy food preparations, with the U.S. importing \$6 million more of these products from Canada in 2002 than it exported to Canada. Cheese imports and exports were also nearly the same.

Figure 29. U.S.-Mexico Dairy Trade Balance

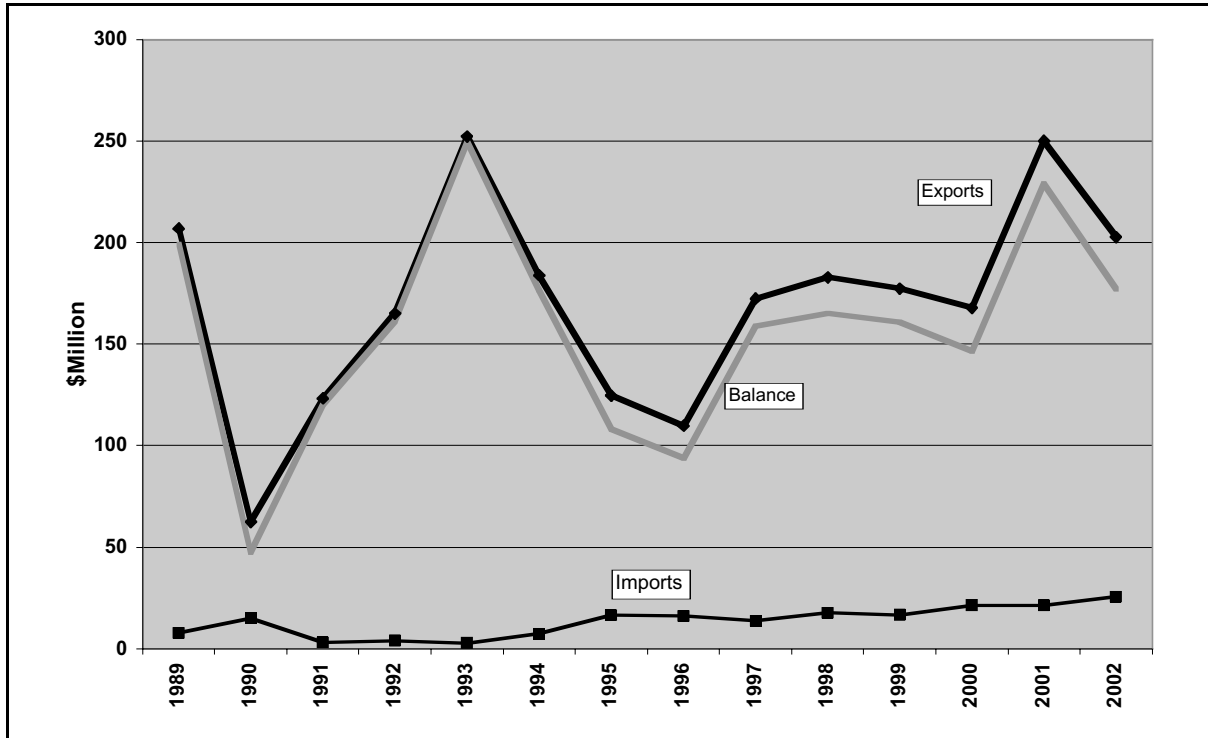
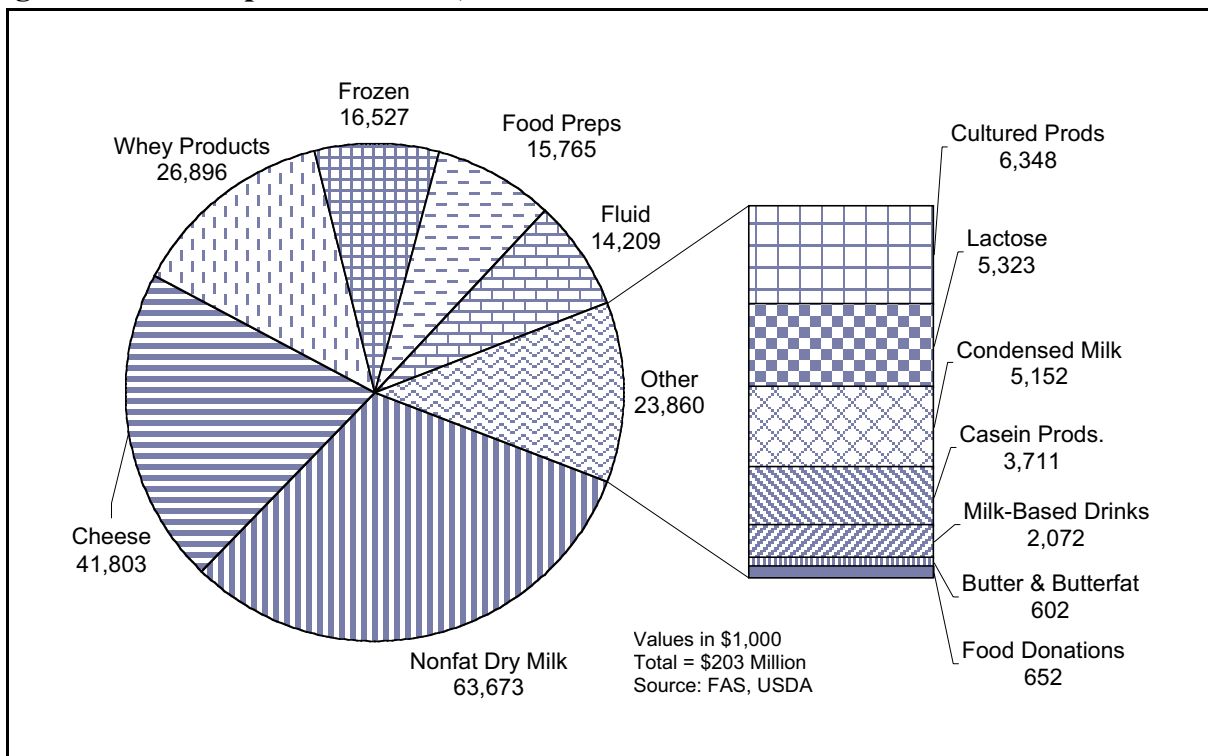
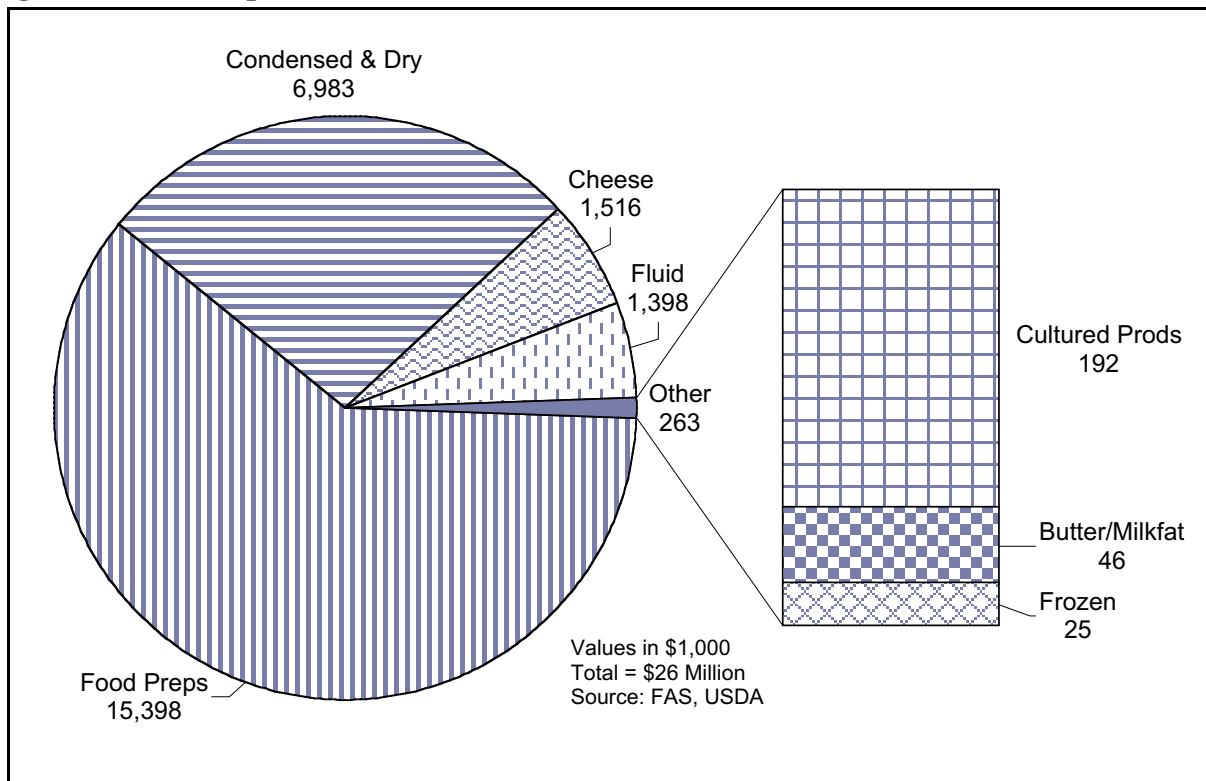


Figure 30. U.S. Exports to Mexico, 2002



The U.S. showed a large positive trade balance in whey products, (re-exported) casein products, and milk-based drinks. Canada shipped substantially more butter to the U.S. than it received from the U.S. and also held a positive trade balance in frozen dairy deserts and condensed milk products.

Figure 31. U.S. Imports from Mexico, 2002



In contrast to the evenness of trade with Canada, dairy trade with Mexico is heavily slanted south. In recent years, U.S. exports have exceeded imports by a factor of about ten. Exports to Mexico have been volatile, ranging from as low as \$62 million annually in the last ten years to as high as \$250 million. Much of the year-to-year change is due to exports of nonfat dry milk.

In 2002, nonfat dry milk accounted for about one-third of the value of U.S. exports to Mexico. Cheese represented about one-fifth. Dairy-based Mexican specialty foods comprise the bulk of U.S. imports from Mexico.

Importance of Dairy Trade to Wisconsin

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

USDA's Economic Research Service (ERS) reports that dairy product exports from Wisconsin in Fiscal Year 2001 had a total value of \$236 million.³ 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.

³ ERS state export estimates are derived by applying states' share of production of a commodity to the total export value of the commodity. While recognizing that these estimates do not measure actual state exports, ERS analysts argue that estimates based on customs data inflate exports of port states and undervalue exports from inland states (<http://www.ers.usda.gov/publications/fau/july02/fau6602/fau6602.pdf>).

Figure 32. Value of Wisconsin Agricultural Exports, FY2001 (\$Million)

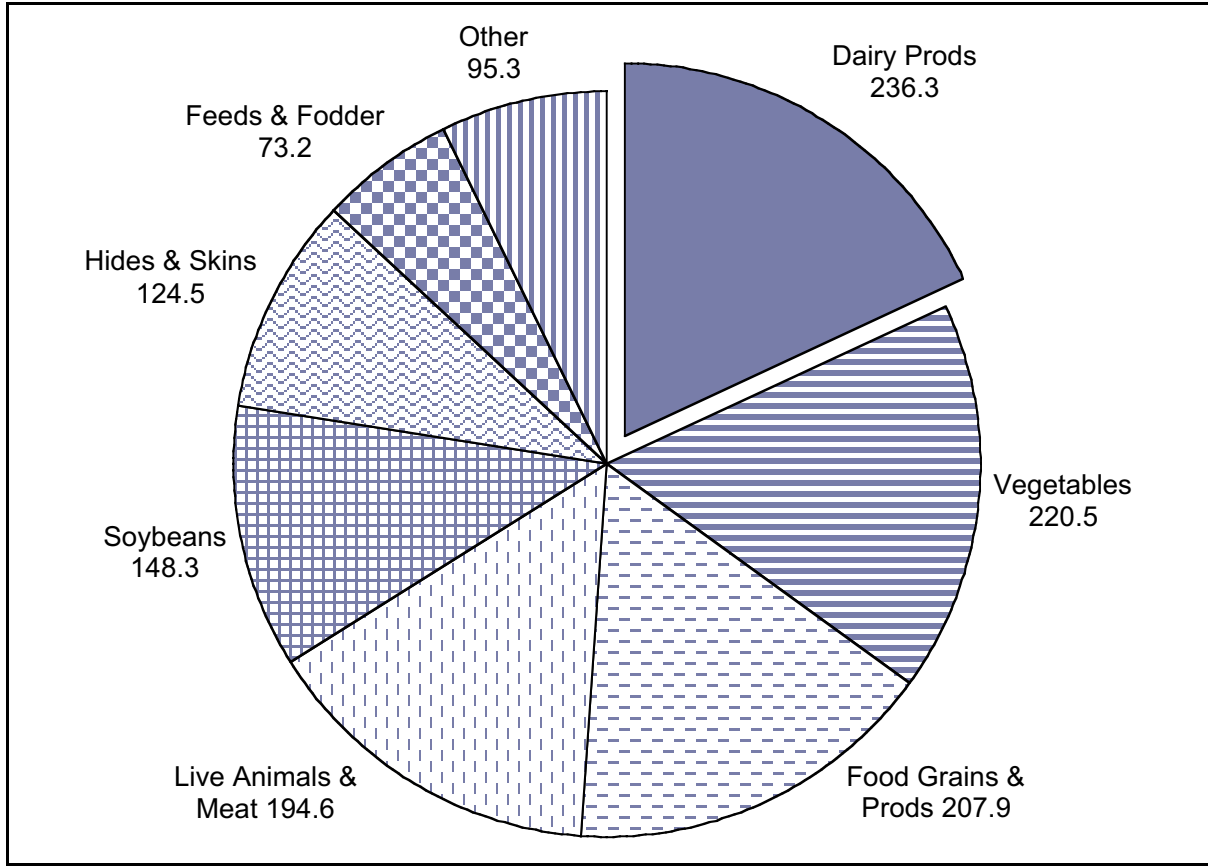
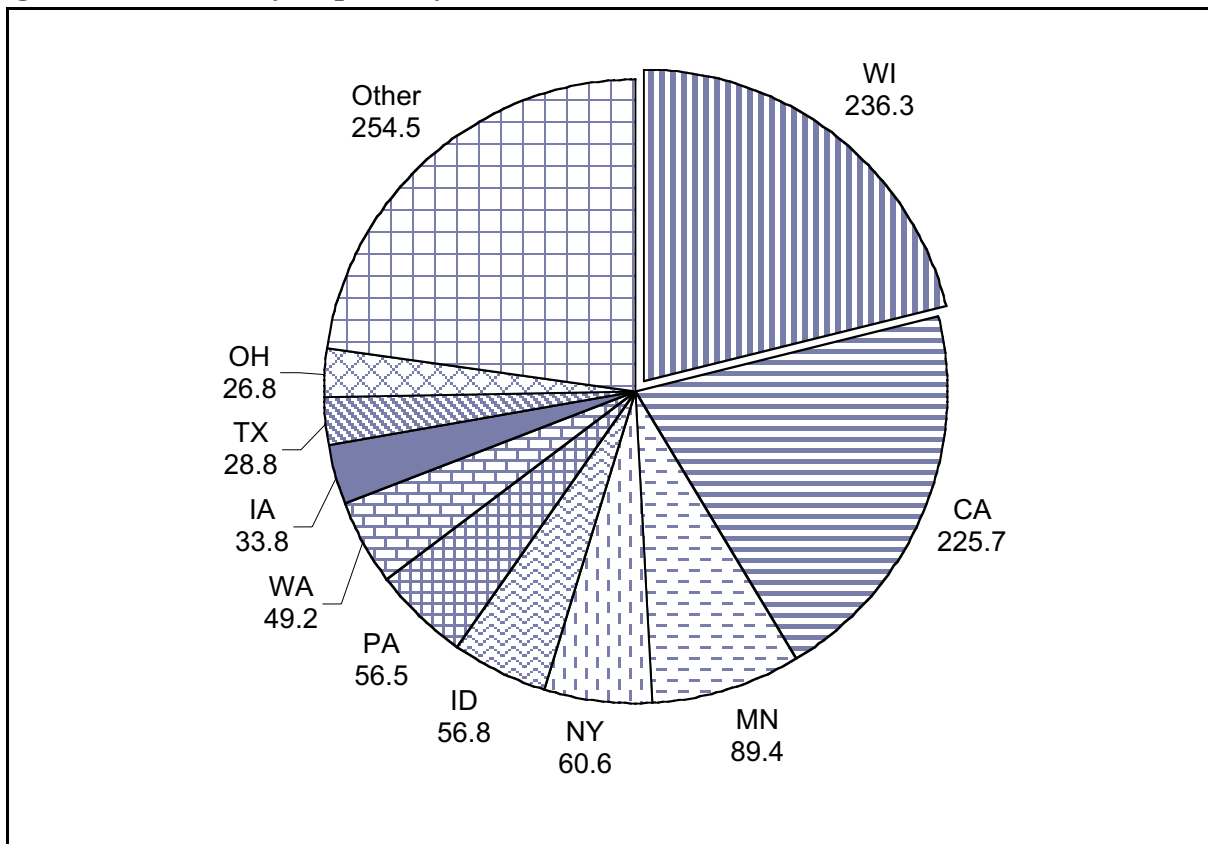


Figure 33. U.S. Dairy Exports by State, FY2001 (\$Million)



Appendix. Supply and Use Tables**Table 1: Butter Supply and Use, Selected Countries, 2002**

Country	Production	Imports	Exports	Change		Exports as % of Production	Imports as % of Domestic Use
				in Stocks	Domestic Use		
	1,000MT					Percent	
India	2,400	2	3	0	2,399	0.1	0.1
Euro. Union	1,740	108	185	33	1,630	10.6	6.6
United States	620	15	2	20	613	0.3	2.4
New Zealand	321	0	331	-35	25	103.1	0.0
Russian Fed.	275	120	5	-5	395	1.8	30.4
Poland	180	3	16	-5	172	8.9	1.7
Australia	166	7	114	0	59	68.7	11.9
Ukraine	125	1	25	0	101	20.0	1.0
Canada	90	18	21	2	85	23.3	21.2
Japan	88	4	0	3	89	0.0	4.5
Brazil	70	7	1	0	76	1.4	9.2
Mexico	70	37	0	0	107	0.0	34.6
Argentina	48	0	4	0	44	8.3	0.0
Egypt	12	40	0	0	52	0.0	76.9
Romania	6	1	0	0	7	0.0	14.3

Table 2: Cheese Supply and Use, Selected Countries, 2002

Country	Production	Imports	Exports	Change		Exports as % of Production	Imports as % of Domestic Use
				in Stocks	Domestic Use		
	1,000MT					Percent	
Euro. Union	5,450	133	463	-10	5,130	8.5	2.6
United States	3,790	225	55	19	3,941	1.5	5.7
Brazil	470	10	2	0	478	0.4	2.1
Australia	424	45	201	43	225	47.4	20.0
Egypt	393	10	3	0	400	0.8	2.5
Argentina	370	1	22	-1	350	5.9	0.3
Canada	315	26	12	-6	335	3.8	7.8
New Zealand	312	0	268	16	28	85.9	0.0
Russian Fed,	300	140	5	0	435	1.7	32.2
Poland	172	2	22	0	152	12.8	1.3
Mexico	145	65	0	0	210	0.0	31.0
Ukraine	125	2	35	0	92	28.0	2.2
Romania	91	0	0	0	91	0.0	0.0
Venezuela	61	6	0	-2	69	0.0	8.7
Japan	34	212	0	0	246	0.0	86.2
Korea (ROK)	18	31	1	-1	49	5.6	63.3
Taiwan	0	11	0	0	11	NA	100.0

Table 3: Nonfat Dry Milk Supply and Use, Selected Countries, 2002

Country	Production	Imports	Exports	Change in Stocks	Domestic Use	Exports as	Imports
						% of Production	as % of Domestic Use
	1,000MT					Percent	
Euro. Union	1,040	50	150	90	850	14.4	5.9
United States	695	7	100	92	510	14.4	1.4
Australia	273	2	212	28	35	77.7	5.7
New Zealand	237	0	245	-13	5	103.4	0.0
India	185	0	10	-20	195	5.4	0.0
Japan	180	30	0	10	200	0.0	15.0
Mexico	150	140	0	-5	295	0.0	47.5
Poland	150	8	100	3	55	66.7	14.5
Russian Fed.	140	50	20	0	170	14.3	29.4
Brazil	107	16	3	0	120	2.8	13.3
Canada	100	1	60	-2	43	60.0	2.3
China (PRC)	80	23	0	0	103	0.0	22.3
Ukraine	65	0	40	0	25	61.5	0.0
Argentina	32	0	20	-2	14	62.5	0.0
Korea (ROK)	22	5	0	3	24	0.0	20.8
Chile	9	5	0	-1	15	0.0	33.3
Colombia	5	5	1	0	9	20.0	55.6

Table 4: Whole Milk Powder Supply and Use, Selected Countries, 2002

Country	Production	Imports	Exports	Change in Stocks	Domestic Use	Exports as	Imports
						% of Production	as % of Domestic Use
	1,000MT					Percent	
Euro. Union	840	16	500	0	356	59.5	4.5
China (PRC)	577	64	9	0	632	1.6	10.1
New Zealand	540	0	521	18	1	96.5	0.0
Brazil	355	85	2	-12	450	0.6	18.9
Australia	207	4	168	17	26	81.2	15.4
Argentina	180	0	116	-6	70	64.4	0.0
Russian Fed.	120	16	6	0	130	5.0	12.3
Colombia	65	14	18	2	59	27.7	23.7
Chile	62	3	8	-3	60	12.9	5.0
Indonesia	50	35	22	0	63	44.0	55.6
Poland	40	2	14	0	28	35.0	7.1
Venezuela	29	75	0	-6	110	0.0	68.2
United States	25	2	0	1	26	0.0	7.7
Ukraine	15	0	7	0	8	46.7	0.0
Taiwan	6	25	0	0	31	0.0	80.6
Peru	5	24	0	0	29	0.0	82.8
Algeria	0	112	0	-8	120	NA	93.3