

Estimating the benefits and costs of the orders is not easy, nor is there consensus among agricultural economists on how to do it. Many issues associated with assessing the economic consequences of the milk marketing orders were discussed in a 1986 report by the American Agricultural Economics Association (AAEA, 1986).

Prices under the orders serve to increase the income of dairy farmers by raising some prices of milk in fluid uses above what they would be without the orders, while lowering the prices of milk in manufacturing uses. Income increases accrue as long as fluid demand is less elastic than manufacturing demand (Babb, Boynton, Dobson, and Novakovic). Most studies suggest that the increase in average producer prices is modest, considerably less than 5 percent (AAEA, p.18, 1986).

Consumers face higher prices for fluid products and lower prices for manufactured dairy products as a result of the orders (Babb, Boynton, Dobson, and Novakovic; Dahlgran; Ippolito and Masson). The empirical estimates of consumer effects are subject to the same problems as those related to producers. Spread over the quantities of milk regulated under orders, these costs are relatively small. Government costs of the orders are minor as well.

In the atmosphere that has characterized recent agricultural policy discussions, the Federal milk marketing orders have often been targeted for change. There is no clear evidence that eliminating or drastically altering the provisions of orders would generate the economic effects expected by proponents of such moves.

Import Quotas

Section 22 restrictions have helped keep dairy imports at predictable, steady levels. On a milk equivalent, milkfat basis, imports have varied from 2.4 to 2.8 billion pounds over the past decade. The fluctuation that occurs can be attributed to market conditions within the import quota categories and

to changes in imports of non-quota dairy products, mostly soft-ripened cheeses and cheeses not made from cows' milk. Casein imports also are unrestricted, because casein is not categorized as a dairy product but rather as an industrial product.

The implementation of the Uruguay Round GATT agreement will have important ramifications for the dairy industry. When the agreement is implemented, all quotas are to be converted to tariff-rate quotas and reduced over time. Also included in the agreement is a minimum access requirement, which will allow more dairy products to enter the United States than currently. The yearly minimum access increases are clearly defined in the agreement. NAFTA, which became effective on January 1, 1994, sets out separate bilateral agreements on cross-border agricultural trade between the United States and Mexico and Mexico and Canada. NAFTA also includes provisions for conversion of quotas to tariff-rate quotas and market access.

Issues To Be Addressed in 1995

As the "market-oriented" dairy policies of 1985 and 1990 have run their course, milk producers, cooperatives, processors and manufacturers, retailers, and consumers have had to cope with changing relationships in the dairy industry. More price variations are examples of these changes. As a result, some parts of the industry have been stressed.

Two approaches to the 1995 agricultural legislative debate appear possible. The first rests on a continued belief that the regulated market should approximate an "idealized" market solution and carries with it a legislative agenda that seeks to continue current programs while adjusting them to meet new conditions, particularly with regard to trade agreements. The second is based on an agenda that is "nontraditional" in the sense that objectives other than those of commercial agriculture drive the debate. Regardless of the approach taken, the desire to continue reducing government budget deficits will play a major role.

Adjusting Current Dairy Programs

Adjusting current dairy programs to changing industry conditions in 1995 will require examination of two key areas: export subsidies and how they fit into recently signed (and implemented) trade agreements, and the milk price support level and how to make adjustments to it. Both of these issues have ramifications for price volatility.

Export Subsidies and Trade Agreements

The way in which export programs, including the DEIP, are operated is an important issue. The Uruguay Round GATT agreement, when fully implemented, eventually will limit subsidized dry milk exports (DEIP and sales from CCC stocks) to about half the 1993 level. The restrictions on butter and cheese exports are not expected to have significant effects other than eliminating any potential for growth in subsidized export sales. Mechanisms for implementing these restrictions would have to be developed.

Even without the GATT agreement, recent operation of the DEIP raises important questions about its effects on price volatility in domestic markets. The DEIP does not currently include domestic market impacts as a criterion for acceptance of bids. At times in recent years, DEIP contracts were accepted to remove large quantities from already tight markets. Such contracts boosted average prices but also increased price volatility. Possible measures to lessen the DEIP's effect on price volatility would include limits on domestic price benchmarks used to calculate acceptable bids, automatic suspension of contract acceptance during periods of market tightness, and authority to reject bids on the basis of domestic market impacts.

The DEIP is only one export subsidy program that conflicts with the earlier trade policy stance against the use of export subsidies. Now that the GATT negotiations are over, these programs are likely to be evaluated for consistency with long-term trade policy and market development goals and for effectiveness as price support measures. In particular, comparisons of DEIP exports with CCC purchases and export sales (in terms of CCC cost, domestic market impacts, and international market effects) are relevant. A final question is whether

particular circumstances warrant elimination of dairy export subsidies while subsidies are kept for other products.

Support Level and Adjustment Mechanisms

The level of the support price and its adjustment to changing market conditions remains an issue to be taken up in the 1995 farm bill debate. At the core of this issue is the flexibility in adjusting the price and the level of removals at which such adjustments can be made. A related question is who should pay for the support program--producers, consumers, taxpayers, or all of these groups.

Estimated levels of surplus, as noted earlier, trigger support price adjustments under current law. There is some debate as to what those levels should be and whether they should be affected by import quantities. In addition, a minimum support price of \$10.10 per cwt has been in effect since January 1990. The trigger levels and the related price floor bear directly on the issue of government program budget exposure and the degree of price stabilization.

In conjunction with the \$10.10 price floor, an assessment on producers to cover projected government purchases over 7 billion pounds, milk equivalent, was also included in the 1990 Farm Act. The "over 7" assessment has never been implemented. The Omnibus Budget Reconciliation Acts of 1990 and 1993 resulted in an assessment on producers to be used for deficit reduction for all milk marketed. This assessment forces producer contributions toward the costs of operating the dairy purchase program and the DEIP.

Deficit reduction assessments are unpopular with producers and their levels are independent of market conditions. However, assessments generally can achieve the same budget savings as a reduction in the support price, with less of a decrease in net producer returns.

New Policy "Direction"

Dairy programs have generally been operated with industry economic criteria as the primary concerns. Benefits were not targeted to specific groups, and relative prices across products and regions

generally were intended to approximate an unregulated market. This approach minimizes efficiency losses from government intervention. However, program benefits are distributed proportionally to production and may not best meet social, environmental, or other goals. There is a growing potential that dairy program objectives may become more defined by external forces.

In the view of some groups, special assistance should be directed to small farms or to farmers in particular regions. In general, commodity programs are not well suited to deliver such assistance efficiently. However, mechanisms could be developed to target support program benefits to certain groups, possibly most easily by modifying the assessment procedures.

Some segments of the dairy industry have embraced "self help" as an approach to addressing some of the issues mentioned above and to replacing, at least in part, the present support price program. Generally stated, self help rests on the creation of a private board to dispose of U.S. dairy products in international markets. This board would purchase dairy products to export at international prices. The effects of the lower priced purchases would be distributed among all producers through either a national export (Class IV) pool or an assessment on all milk marketed in the United States. It is hoped that exports by the board would (1) lower Federal price support program costs, (2) allow the Government to reduce assessment levels, and (3) enhance domestic producer prices. Some of these objectives would be difficult to meet given the acceptance of the GATT trade agreement, which would limit subsidized dairy product exports.

Like its predecessor, the 1990 Farm Act addressed environmental and conservation issues. While adding new programs, the 1990 Act also clarified the costs of noncompliance. Environmental issues will likely be a part of 1995 farm legislation debates, particularly with regard to water (Crutchfield, Hansen, and Ribaud).

Water quality and nonpoint source pollution questions have become more prominent since 1990. Existing concentrations of dairy cows in some areas are one issue and expansion of dairies into environmentally sensitive areas is another. New

York City's actions to regulate upstate watersheds supplying its drinking water are one example. Rather than control the water quality after it reached the city (an expensive undertaking), control at the source was attempted (McGuire).

Water quantity is another potentially serious issue for dairy farmers. Water availability for agriculture is likely to be reduced. Central Valley Project water allocations in California and designation of water requirements for fisheries in the Pacific Northwest (Aillery and others) are two examples.

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Glossary

Agricultural Marketing Service (AMS). A USDA agency responsible for administering marketing order programs, standardization, inspection and grading programs, market news programs, and research and promotion programs.

Balancing. A service, usually provided by cooperative associations of milk producers, to tailor the milk supplied to each handler on a market to that handler's needs. It involves directing milk movements between producers' farms and handlers' plants and diverting supplies in excess of handlers' needs to alternative outlets such as manufactured dairy product plants.

Blend price. A weighted average price based on the proportion of Grade A milk in a pool allocated to each of the use classes. Producers participating in a pool receive its blend price with adjustments for butterfat content and farm location if so specified.

Class I differential. The amount added to the M-W price to obtain a given order's Class I price. Two components usually make up the effective or total Class I differential: a minimum Federal order differential and an over-order payment.

Class I use. Grade A milk used in Class I milk products as defined under a milk marketing order. Class I products generally include all beverage milks and may include other fluid products.

Class II use. Grade A milk used in fluid cream products or perishable manufactured products (ice cream, cottage cheese, and yogurt) under Federal marketing orders with three classes.

Class III use. Grade A milk used to produce storable manufactured products (cheese, butter, canned milk, and dry milk) under a Federal marketing order with three classes.

Class III-A use. Grade A milk used to produce nonfat dry milk under Federal milk marketing orders where the class has been established.

Classified pricing. A structure of prices that differ according to category of use. In particular, the Federal order pricing system under which regulated processors pay for Grade A milk according to the class in which it is used.

Commodity Credit Corporation (CCC). A federally owned and operated corporation within USDA created to stabilize, support, and protect farm income and prices through loans, purchases, payments, and other operations.

Consolidated Farm Service Agency (CFSA). A USDA agency responsible for administering farm price support and income support programs and some conservation and forestry cost-sharing programs.

Cooperative. A firm that is owned by its farmer-members, is operated for their benefit, and distributes earnings on the basis of patronage (volume of milk).

Cost of production. An amount, measured in dollars, of all purchased inputs, allowances for operator labor and management, and rent that is necessary to produce farm products.

Economies of size. Increasing returns as use of factors is expanded in least-cost combinations. Once an operation reaches a certain size, the marginal cost of producing additional output begins to decline.

Equalization pool. With a classified pricing system such as that used in Federal and State orders, processors pay for milk at different prices for each use category. Producers are paid a weighted average, or "blend" price for all uses of milk in a particular order or market. Processors pay into or draw out of the pool on the basis of their utilization of milk relative to market average utilization. Producers participating in the pool receive identical uniform blend prices, with adjustments for butterfat content and location. In markets with multiple component pricing, adjustments are also made for protein or nonfat solids content.

European Union. Formerly known as the European Community, originated under the Treaty of Rome in 1957 to unify and integrate member economies by establishing a customs union and common economic policies, including the Common Agricultural Policy. The EU currently has 12 members.

Farm act. The omnibus agricultural legislation that expires every 4 or 5 years. The act's titles include program commodities, trade, conservation, credit, agricultural research, food stamps, and marketing.

Federal milk marketing order. A regulation issued by the Secretary of Agriculture specifying

minimum prices and conditions under which regulated milk handlers must operate within a specified geographic area.

Fluid grade (Grade A) milk. Milk produced under sanitary conditions that qualify it for fluid consumption. Only Grade A milk is regulated under Federal marketing orders.

Fluid product. Packaged dairy products traditionally including beverage milks, milk and cream mixtures, cream, eggnog, and yogurt.

Fluid utilization. The proportion of Grade A milk pooled in a market and used to produce fluid (Class I) products.

Food, Agriculture, Conservation, and Trade Act of 1990 (P.L. 101-624). The omnibus food and agricultural legislation signed into law on November 28, 1990, that provides a 5-year framework for the Secretary of Agriculture to administer various agriculture and food programs.

General Agreement on Tariffs and Trade (GATT). An agreement originally negotiated in 1947 by 23 countries, including the United States, to increase international trade by reducing tariffs and other trade barriers. The agreement provides a code of conduct and a framework for periodic multilateral negotiations on trade issues.

Handlers. Generally refers to fluid milk processors but can include manufacturing plants that also supply fluid markets.

Make allowance. The difference between the government support price for milk and the value of its products at the CCC-announced purchase prices for butter, nonfat dry milk, and cheese. The allowance is administratively set to attain the desired level of prices for milk in manufacturing uses.

Manufacturing grade (Grade B) milk. Milk not meeting the fluid grade standards. Less stringent standards generally apply.

Manufacturing milk. Grade B milk or the Grade A milk assigned to Class II and Class III or otherwise used in the production of a manufactured product.

Manufacturers. Generally refers to the producers of cheese, butter, nonfat dry milk, and other storable dairy products.

Milk equivalent. The amount of farm milk represented by a quantity of dairy products. Most often used to aggregate stocks, trade, or removals of various dairy products on a common basis, either milkfat or skim solids. Milkfat basis refers to the quantity of milk needed to provide the milkfat contained in the dairy products. Similarly, skim solids basis refers to the milk needed to provide the skim solids used in production. Total solids basis is an arbitrary weighting of net removals on the two bases used for adjusting the support price for milk. The weights currently are 40 percent milkfat basis and 60 percent skim solids basis.

Minnesota-Wisconsin (M-W) price. A monthly average price per cwt paid by plants for manufacturing grade milk in Minnesota and Wisconsin as estimated by NASS.

North American Free Trade Agreement (NAFTA). A region-wide (the United States, Canada, and Mexico) agreement effective January 1, 1994, which: (1) progressively eliminates tariffs and nontariff barriers to trade in goods; (2) establishes principles of and improves access for services trade; (3) establishes rules for investment; (4) strengthens protection of intellectual property rights; and (5) creates an effective dispute settlement mechanism. Other countries have expressed interest in joining in the agreement.

Over-order payment. A payment above Federal order minimum prices negotiated between buyers and sellers to cover the cost of providing market services or attracting milk away from manufacturing plants. Over-order payments could also result from market power.

Parity price. Originally defined as the price which gives a unit of a commodity the same purchasing power today as it had in a base period, traditionally

1910-14. In 1948, parity procedures were modified to adjust for changes in relative farm prices between the base period and the most recent 10 years.

Perishable manufactured dairy products.

Manufactured dairy products with limited storage life, including ice cream, cottage cheese, yogurt, and sour cream.

Processors. Generally refers to firms that process raw Grade A milk into fluid dairy products.

Public Law 480 (P.L. 480). Common name for the Agricultural Trade Development and Assistance Act of 1954, which seeks to expand foreign markets for U.S. agricultural products, combat hunger, and encourage economic development in developing countries.

rbST (recombinant bovine somatotropin). A synthesized copy of a protein hormone, bovine somatotropin (bST), which naturally occurs in cattle. The hormone is secreted by the cow's pituitary gland and directs how energy and nutrients from feeds are used for growth, milk production, and other body functions. Initial studies of the hormone emphasized its relation to

growth and led to it being called bovine growth hormone (bGH), a name that is still sometimes used.

Reconstituted milk. Fluid milk recombined from ingredients (nonfat dry milk, condensed milk, cream, butter, and butter oil) or concentrated milk.

Section 22. A section of the Agricultural Adjustment Act of 1933 (P.L. 73-10) that authorizes the President to restrict imports by imposing quotas or fees if the imports interfere with Federal price support programs or substantially reduce U.S. production of products processed from farm commodities.

Storable manufactured dairy products.

Manufactured dairy products, including butter, nonfat dry milk, and hard cheeses, which can be stored for relatively long periods of time.

Surplus. The difference between commercial milk supplies and the amount demanded by the market at a given price. CCC net removals (price-support purchases plus DEIP shipments minus domestic sales for unrestricted use) approximate the surplus during a particular period.

Appendix A--Calculation of CCC Purchase Prices for Dairy Products

Calculations of CCC purchase prices for dairy products with support price for manufacturing grade milk of \$10.10 per cwt. The last change in the purchase price calculations became effective in 1993.

Effective July 7, 1993

Support price, \$/cwt, at 3.67 percent milkfat	10.10
Support price, \$/cwt, at 3.5 percent milkfat	10.00
Butterfat differential 1/	6.1
Yields per 100 pounds of milk (3.67% milkfat)	
Butter	4.48
Nonfat dry milk (NDM)	8.13
Cheese	10.1
 Butter-Nonfat dry milk calculations	
Return to butter-powder plants, \$/cwt	10.10
CCC manufacturing allowance for butter and NDM, \$/cwt	1.22
Value of butter and NDM (U.S. average) made from 100 pounds of milk, \$/cwt	11.32
<i>Nonfat dry milk purchase price (rounded), \$/lb</i>	1.0340
Value of NDM per 100 pounds milk, \$/cwt 2/	8.41
Value of butter:	
Dollars per 100 pounds of milk	2.91
Dollars per pound (calculated) 3/	.6496
<i>Butter purchase price (rounded), \$/lb</i>	.6500
 Cheese calculation	
Return to cheese plants, \$/cwt	10.10
CCC manufacturing allowance for cheese and whey, \$/cwt	1.37
Value of cheese and whey per 100 pounds of milk, \$/cwt	11.47
Value of .25 pound of whey fat: \$ 4/	.16
Value of cheese:	
Dollars per 100 pounds of milk	11.31
Dollars per pound (calculated) 5/	1.1198
<i>Cheese purchase prices (rounded), \$/lb</i>	
Block	1.1200
Barrel	1.0900

1/ (Butter purchase price times 0.138) - (.0028 times 3.67 price). 2/ NDM price per pound times 8.13. 3/ Value of butter per 100 pounds of milk divided by 4.48. 4/ Butter purchase price times 0.25. 5/ Value of cheese per 100 pounds divided by 10.1.

Appendix B--Major Price Support Actions, 1970-94

- 1970-72 Support prices set at levels above the minimum of 75 percent of parity.
- 1973 The Agricultural and Consumer Protection Act of 1973 set a minimum support level of 80 percent of parity through March 1974.
- 1974-77 Support prices, set at 80 percent of current parity, adjusted frequently because of rapid inflation.
- 1977 The Food and Agriculture Act of 1977 set a minimum support price of 80 percent of parity and required semi-annual adjustments to reflect changes in prices paid by farmers. These provisions were to be in effect for 2 years.
- 1979 The support price provisions of the 1977 Act were extended for 2 additional years.
- 1981 The Agriculture and Food Act of 1981 decoupled support prices from the parity concept and implemented a set of triggers relating the minimum support level to the size of CCC purchases.
- 1982 The support price was frozen at \$13.10 per cwt.
- The Omnibus Budget Reconciliation Act of 1982 authorized a 50-cent deduction per cwt on all milk marketed, first collected in April 1983. An additional 50-cent deduction, implemented on September 1, 1983, was refundable to producers who reduced marketings by a specified amount.
- 1983 The Dairy and Tobacco Adjustment Act of 1983 lowered the support price to \$12.60 effective December 1, 1983. A 50-cent assessment was continued through March 1985. Because purchases were projected to exceed trigger levels specified in the legislation, the support price dropped to \$11.60 by July 1, 1985. The Act also provided for a milk diversion program, which operated between January 1984 and March 1985, that paid contracting producers \$10 per cwt for reductions from base milk marketings.
- 1985 The Food Security Act of 1985 authorized a voluntary dairy termination program in which producers submitted bids to remove milk production for at least 5 years. The Act also set the support price at \$11.60 for calendar 1986, \$11.35 for January-September 1987, and \$11.10 through 1990. Further adjustments to the support price on January 1, 1988, 1989, and 1990 were to be tied to projected removals. Higher minimum Class I differentials were also legislated.
- 1986 The Food Security Improvement Act of 1986 initiated a 12-cent per cwt assessment on all milk marketings from April 1, 1986, through September 30, 1986. The assessment was put in place to meet outlays reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985.
- 1987 The Omnibus Budget Reconciliation Act of 1987 required a 2.5-cent per cwt outlays reduction assessment for calendar year 1988.
- 1988 The Disaster Assistance Act of 1988, as amended by P.L. 101-7 in 1989, prohibited any January 1, 1989, reduction in the support price. It also required a 50-cent increase on April 1, 1989, to be followed by a 50-cent reduction on July 1, 1989. The increase was achieved by increasing the support purchase price for nonfat dry milk, while the decline was achieved by decreasing butter's.

1990 The support price was lowered to \$10.10 per cwt.

Under the Food, Agriculture, Conservation, and Trade Act of 1990, adjustments to the support price during 1991 through 1995 were to be made according to CCC purchases measured on a milk equivalent, total milk solids basis instead of a milkfat basis. However, the support price cannot be less than \$10.10 per cwt through 1995. CCC program expenditures are limited to the purchase of 7 billion pounds of milk. Purchases above this amount are to be financed through a producer assessment. To deal with the milkfat surplus, adjustment to support purchase prices for butter and nonfat dry milk are limited to not more than two per year.

The Agricultural Reconciliation Act of 1990 implemented the 1990 deficit reduction agreement. For 1991, the assessment on milk marketings was 5 cents per cwt of milk marketed. For calendar years 1992-95, it increases to 11.25 cents. Refunds are to be made available to producers not increasing marketings from the previous year. Higher assessments were authorized to recapture refunds.

1991 First heavy use of the Dairy Export Incentive Program. CCC commodities removed from the sellback list.

1992 January 17 - Support purchase price for butter lowered 11 cents; nonfat dry milk price raised 6.2 cents. The support price remained at \$10.10 per cwt.

May 1 - Deficit reduction assessment raised to 13.65 cents per cwt of milk marketed through the remainder of 1992.

May 13 - Support purchase price for butter lowered 11 cents; nonfat dry milk price raised 6.1 cents. The support price remained at \$10.10 per cwt.

1993 May 1 - Deficit reduction assessments raised to 16.35 cents per cwt of milk marketed through the remainder of 1993.

July 7 - Support purchase price for butter lowered 11.25 cents; nonfat dry milk price raised 6.1 cents. The support price remained at \$10.10 per cwt.

1994 May 1- Deficit reduction assessments set at 19.28 cents per cwt of milk marketed through the remainder of 1994.

Appendix C--How Federal Milk Marketing Order Pricing Works

Federal milk marketing orders establish the minimum prices that regulated handlers must pay for Grade A milk based on its uses. However, those prices are not paid directly to the producers delivering milk to the regulated handler. Milk receipts are pooled by the market administrator and a weighted average, or blend, price (based on milk uses) is paid to producers each month. This marketwide pooling is the predominant pricing method in Federal milk marketing orders. An example based on a hypothetical order will help to illustrate the procedure.

Suppose there is a marketing order covering the area surrounding Emerald City. Three regulated handlers are pooled under the order: a fluid milk bottler, an ice cream plant, and a cheese plant. Each handler is representative of one of four class uses (Class I, Class II, Class III, and Class III-A) in many of the Federal orders. Because the milk in our hypothesized example is under the Federal order, it is assumed to be all Grade A.

Mr. Ozburn sells his milk to the cheese plant, which is required to pay the minimum Class III price for its milk. The Class III price in the Emerald City order is set equal to the M-W price, the price unregulated manufacturing plants pay for Grade B milk in Minnesota and Wisconsin. For this July 1993 example, that price is \$11.41 per cwt.

Milk is sold to the ice cream plant by Ms. North, a milk producer living just down the road from Mr. Ozburn. For this example we use the recently proposed Class II price determination, the M-W 2 months previous plus a fixed differential of \$0.30 per cwt (May M-W + \$0.30) of \$11.81 per cwt.

Finally, the fluid milk bottler buys milk from Mr. Crowe, a farmer on the other side of town. The fluid processor must pay a minimum Class I price based on the M-W 2 months previous (May) plus a fixed Class I differential based on various cost factors. We assume that the Class I differential in the Emerald City order is \$2.45 per cwt. Therefore, the minimum Class I price is \$13.96 per cwt.

Even though the producers sold their milk to different types of plants, they will each receive the same (minimum) price for their milk. The monthly minimum blend is calculated by first multiplying the class prices by the amounts of milk used in each class to determine the total receipts under the order. Assume that the cheese plant bought 80,000 cwt of milk, the ice cream plant 15,000 cwt, and the fluid plant 48,000 cwt. The receipts for August are:

Class III	\$11.41	x	80,000 cwt =	\$ 912,800
Class II	\$11.81	x	15,000 cwt =	\$ 177,150
Class I	\$13.96	x	48,000 cwt =	\$ 670,080
Total				\$ 1,760,030

The total receipts are then divided by the total quantity of milk sold to the regulated handlers (143,000 cwt) to determine the minimum blend price (\$12.30 per cwt) each producer receives for milk sold in July. In actuality, Federal order pricing is not so simple. But, regardless of technical language involved, Federal order minimum blend prices are the outcome of an accounting of how much milk is purchased by regulated handlers, and how that milk is used.

Appendix table 1--Milk production and factors affecting supply, 1970-93

Year	Milk cattle on farms, January 1			Milk cows on farms, average during year	Milk production		Average prices received by farmers per cwt		
	Milk cows and heifers that have calved	Milk cow replace- ments; heifers 500 pounds and over	Number per 100 cows		Per cow	Total	All milk wholesale	Milk eligible for fluid market	Milk manufacturing grade
	-----Thousands-----		Thousands	Thousands	Pounds	Million pounds	----- Dollars -----		
1970	12,091	3,880	32.1	12,000	9,751	117,007	5.71	6.05	4.70
1971	11,909	3,843	32.3	11,839	10,015	118,566	5.87	6.19	4.86
1972	11,776	3,828	32.5	11,700	10,259	120,025	6.07	6.38	5.08
1973	11,622	3,872	33.3	11,413	10,119	115,491	7.14	7.42	6.20
1974	11,297	3,941	34.9	11,230	10,293	115,586	8.33	8.66	7.13
1975	11,220	4,087	36.4	11,139	10,360	115,398	8.75	9.02	7.63
1976	11,071	3,956	35.7	11,032	10,894	120,180	9.66	9.93	8.56
1977	10,998	3,887	35.3	10,945	11,206	122,654	9.72	9.96	8.70
1978	10,896	3,886	35.7	10,803	11,243	121,461	10.60	10.80	9.65
1979	10,790	3,932	36.4	10,734	11,492	123,350	12.02	12.20	11.06
1980	10,758	4,159	38.6	10,799	11,891	128,406	13.05	13.23	12.01
1981	10,849	4,342	40.0	10,898	12,183	132,770	13.77	13.95	12.72
1982	10,986	4,547	41.4	11,011	12,306	135,505	13.61	13.80	12.60
1983	11,047	4,545	41.1	11,059	12,622	139,588	13.58	13.75	12.61
1984	11,059	4,533	41.0	10,793	12,541	135,351	13.46	13.61	12.49
1985	10,777	4,770	44.3	10,981	13,024	143,012	12.76	12.90	11.72
1986	11,116	4,709	42.4	10,773	13,285	143,124	12.51	12.62	11.46
1987	10,466	4,305	41.1	10,327	13,819	142,709	12.54	12.66	11.37
1988	10,311	4,122	40.0	10,262	14,145	145,152	12.26	12.36	11.15
1989	10,212	4,161	40.7	10,126	14,244	144,239	13.56	13.66	12.38
1990	10,153	4,227	41.6	10,127	14,646	148,314	13.74	13.89	12.34
1991	10,156	4,220	41.6	9,992	14,860	148,477	12.27	12.30	11.05
1992	9,913	4,202	42.4	9,835	15,419	151,647	13.15	13.19	11.91
1993 1/	9,838	4,224	42.9	9,705	15,554	150,954	12.86	12.88	11.80

See footnotes at end of table.

Continued--

Appendix table 1--Milk production and factors affecting supply, 1970-93--Continued

Year	Milk cow cost				Grain and other concentrates fed to milk cows			Dairy pasture feed conditions, as percent of normal	Alfalfa hay prices received by farmers per ton	Slaughter cow prices per cwt 3/
	Dairy ration value per cwt	Milk/feed price ratio 2/	Price received per head	Milk required to buy a cow	Total fed	Per cow	Per cwt of milk produced			
	<i>Dollars</i>	<i>Pounds</i>	<i>Dollars</i>	<i>Cwt</i>	<i>Thousand tons</i>	<i>--- Pounds ---</i>	<i>Percent</i>	<i>--- Dollars ---</i>		
1970	3.28	1.74	332	58	24,870	3,979	42.4	81	24.70	21.32
1971	3.44	1.71	358	61	25,107	4,070	42.4	79	27.10	21.62
1972	3.52	1.72	397	65	25,162	4,298	41.9	80	31.45	25.21
1973	4.88	1.46	496	69	25,042	4,389	43.4	83	41.55	32.82
1974	6.23	1.34	500	60	24,586	4,384	42.6	75	52.58	25.56
1975	6.25	1.40	412	47	24,274	4,357	42.1	79	54.38	21.09
1976	6.30	1.53	477	49	25,083	4,545	41.7	70	60.81	25.31
1977	6.20	1.57	504	52	25,518	4,709	42.1	72	60.57	25.32
1978	6.08	1.74	675	64	26,018	4,803	42.8	76	52.25	36.79
1979	6.68	1.80	1,040	87	27,207	5,070	44.1	82	60.37	50.10
1980	7.42	1.76	1,190	91	28,433	5,260	44.2	70	72.00	45.73
1981	8.02	1.72	1,200	87	28,513	5,220	42.9	79	70.90	41.93
1982	7.45	1.83	1,110	82	29,661	5,380	43.7	83	72.73	39.96
1983	7.88	1.72	1,030	76	30,162	5,438	43.2	77	78.70	39.35
1984	8.16	1.65	895	66	28,449	5,253	42.0	74	79.48	39.81
1985	7.35	1.73	860	67	8,891	5,427	41.8	77	73.67	38.31
1986	7.00	1.79	820	66	29,913	5,534	41.8	80	64.85	37.18
1987	6.81	1.84	920	73	29,607	5,736	41.6	79	65.97	44.80
1988	7.74	1.58	990	81	29,853	5,820	41.2	59	82.51	47.91
1989	8.20	1.65	1,030	76	29,602	5,845	41.0	73	95.98	50.11
1990	7.98	1.71	1,160	84	32,402	6,397	43.7	74	92.56	53.32
1991	7.73	1.58	1,100	90	30,934	6,192	41.7	78	78.96	51.50
1992	7.68	1.69	1,130	86	31,572	6,417	41.6	82	75.45	49.69
1993 1/	7.73	1.64	1,160	90	32,185	6,637	42.7	84	85.73	50.14

1/ Preliminary.

2/ Pounds of average concentrate ration equal in value to 1 pound of milk.

3/ Utility grade, Omaha 1965-87, Wisconsin auctions 1988 and after.

Appendix table 2--Propensity to produce milk index, relative production index, and relative price index, by State, 1992, 1985 and 1975

State	Propensity to produce milk index 1/			Relative production index 2/			Relative price index 3/			
	1992	1985	1975	1992	1985	1975	1992	1985	1975	
	<i>Rank</i>	<i>Index</i>								
New Mexico	1	1,070	474	198	749	394	166	70	83	84
Arizona	2	421	324	257	341	268	211	81	83	82
Nevada	3	378	282	222	291	231	182	77	82	82
California	4	278	206	155	231	185	150	83	90	97
Florida	5	254	193	233	183	152	182	72	79	78
Washington	6	236	154	147	212	137	134	90	89	91
Texas	7	189	137	137	151	114	114	80	83	83
Colorado	8	153	113	115	136	110	105	89	97	91
Utah	9	152	124	131	146	129	131	96	104	100
Idaho	10	150	117	96	164	134	107	109	114	111
Pennsylvania	11	141	151	130	130	132	177	92	87	90
Georgia	12	140	132	152	113	103	120	81	78	79
Oregon	13	138	121	101	124	110	94	90	91	93
Vermont	14	124	126	127	110	111	116	89	88	91
Louisiana	15	115	115	155	94	95	136	82	82	88
New York	16	103	104	120	96	94	109	93	91	91
N. Carolina	17	93	110	111	76	93	99	82	84	89
Virginia	18	91	103	102	83	90	93	91	87	91
Wisconsin	19	87	99	97	110	121	114	127	122	118
Maine	20	86	96	109	74	81	94	86	84	86
New Hampshire	21	86	102	113	70	81	94	81	80	83
Maryland	22	84	108	117	77	95	109	92	88	93
S. Dakota	23	83	92	108	94	107	116	113	116	107
Connecticut	24	81	95	113	60	72	88	74	76	78
Michigan	25	79	87	88	84	92	91	106	105	104
Ohio	26	72	80	86	73	80	87	101	100	101
Tennessee	27	71	78	92	77	83	94	109	107	102
Oklahoma	28	70	71	79	66	66	74	94	94	94
Delaware	29	67	73	76	60	64	70	90	87	92
S. Carolina	30	67	100	106	55	86	94	82	86	89
Minnesota	31	63	75	82	82	95	98	130	126	119
Kentucky	32	61	68	92	69	75	97	113	110	105
Massachusetts	33	61	86	106	51	66	84	83	76	79
Arkansas	34	59	66	71	61	69	72	104	105	108
Montana	35	58	65	65	55	63	62	95	96	96
Missouri	36	57	59	76	63	64	79	110	109	104
Indiana	37	51	57	66	55	61	69	108	107	105
Nebraska	38	49	55	77	47	54	72	96	98	93
Alabama	39	48	52	78	39	44	69	82	85	89
Iowa	40	46	48	58	56	56	67	122	118	115
Kansas	41	46	48	68	48	54	73	103	111	108
Mississippi	42	46	56	70	45	55	69	98	98	99
Wyoming	43	44	58	58	43	58	59	98	100	102
N. Dakota	44	43	52	57	46	53	56	106	102	98
Illinois	45	41	45	51	47	51	56	116	113	109
West Virginia	46	35	52	57	31	46	52	89	88	92
New Jersey	47	32	47	62	26	37	50	80	78	80
Rhode Island	48	29	39	71	21	28	52	72	72	73

1/ The "propensity to produce milk index" is the relative production index divided by the relative price index. Figures may not divide exactly because of rounding.

2/ The relative production index is:

$$\frac{(\text{State's milk prod. in year t}) \times 100}{(\text{Total U.S. milk prod. in year t}) + (\text{U.S. avg. total milk prod. in 1957-59})} \times \frac{(\text{State's avg. milk prod. in 1957-59})}{(\text{U.S. avg. total milk prod. in 1957-59})}$$

3/ The relative price index is:

$$\frac{(\text{State's all milk price in year t}) + (\text{State's avg. all milk price, 1957-59}) \times 100}{(\text{U.S. all milk price in year t}) + (\text{U.S. avg. all milk price, 1957-59})}$$

Appendix table 3--Farm operation income statement for dairy farms by region, 1992 1/

	North- east	Lake States	Corn Belt	Northern Plains	Appa- lachia	South- east	Delta	Southern Plains	Mountain	Pacific	All farms
<i>Dollars per farm</i>											
Gross cash income	147,959	123,643	114,096	96,704	153,815	465,161	221,328	301,985	365,540	754,709	166,766
Livestock and milk sales	140,362	113,761	104,798	80,878	140,361	455,220	208,542	282,517	354,112	716,481	155,785
Crop sales (including net CCC loans)	3,457	4,943	6,991	7,666	10,958	1,122	3,559	8,224	4,257	13,200	5,586
Government payments	1,941	3,025	1,385	3,874	1,325	2,167	1,442	2,896	1,661	1,501	2,356
Other farm-related income 2/	2,199	1,914	922	4,286	1,171	6,652	7,785	8,348	5,510	23,527	3,039
Less: Cash expenses	115,157	88,769	91,861	74,906	107,659	380,125	191,550	221,461	295,456	623,634	128,092
Variable	98,792	71,662	77,260	60,114	95,929	351,843	174,498	190,884	267,500	557,216	109,350
Livestock purchases	4,920	4,201	3,686	4,312	5,944	22,982	14,472	17,439	20,508	22,865	6,143
Feed	37,661	21,166	33,227	21,143	39,657	194,163	82,421	100,756	143,460	307,051	45,686
Other livestock-related expenses 3/	6,672	6,217	4,305	3,102	4,402	12,068	3,787	5,119	13,220	27,599	6,796
Seed and plants	2,109	3,019	2,178	1,882	2,090	2,757	3,232	1,745	1,563	2,819	2,529
Fertilizer and chemicals	7,279	7,637	6,593	4,661	8,599	13,649	14,362	7,585	5,108	11,658	7,592
Labor	12,068	8,454	7,025	2,991	13,321	47,112	24,307	18,122	30,191	79,048	13,100
Fuels and oils	3,976	3,603	3,421	5,096	3,591	6,950	4,976	6,146	6,581	10,859	4,165
Repairs and maintenance	9,199	7,281	6,851	6,397	7,001	14,783	8,257	9,864	12,071	25,870	8,565
Machine-hire and custom work	5,758	2,719	4,073	4,147	5,802	17,337	10,392	12,849	15,625	28,328	5,579
Utilities	4,527	3,208	2,854	3,070	2,995	10,953	4,947	5,244	8,928	21,340	4,398
Other variable expenses 4/	4,623	4,157	3,047	3,313	2,527	9,089	3,345	6,015	10,245	19,779	4,797
Fixed	16,365	17,107	14,601	14,792	11,730	28,282	17,052	30,577	27,956	66,418	18,742
Real estate and property taxes	3,678	3,626	1,721	1,459	1,603	4,002	706	1,825	2,931	6,081	3,180
Interest	6,392	7,169	5,302	6,863	5,193	12,054	11,033	14,263	17,803	30,525	8,005
Insurance premiums	2,846	2,229	1,596	1,935	2,331	6,644	2,198	2,893	3,147	7,721	2,558
Rent and lease payments	3,449	4,083	5,982	4,535	2,603	5,582	3,115	11,596	4,075	22,091	4,999
Equals: Net cash farm income	32,802	34,874	22,235	21,798	46,156	85,036	29,778	80,524	70,084	131,075	38,674
Less:											
Depreciation	15,442	12,988	12,287	8,870	8,867	29,008	22,653	17,321	21,913	31,762	14,431
Labor, noncash benefits	1,122	334	371	3	856	3,065	372	1,350	901	6,870	840
Plus:											
Value of inventory change	5,872	8,198	5,499	7,545	1,745	14,315	3,074	7,089	23,481	4,206	7,132
Nonmoney income 5/	4,569	3,668	3,672	1,898	3,830	4,478	3,343	3,895	4,213	5,096	3,903
Equals: Net farm income	26,679	33,418	18,748	22,368	42,008	71,756	13,170	72,837	74,964	101,745	34,438

1/ Dairy farms defined as farms generating at least 50 percent of the total value of production from dairy production.

2/ Includes income from machine-hire, custom work, livestock grazing, land rental, contract production fees, outdoor recreation, and any other farm-related source.

3/ Includes veterinary services and supplies, livestock leasing, custom feed processing, bedding, and grazing.

4/ Includes supplies, registration fees, transportation, storage, and general business expenses.

5/ Defined as the value of home consumption and imputed value of farm dwellings owned by the farm operation.

Source: Farm Costs and Returns Surveys, USDA, Mitchell Morehart, 202-219-0801.

Appendix table 4--Farm operation balance sheet for dairy farms by region, 1992 1/ 2/

	North-east	Lake States	Corn Belt	Northern Plains	Appalachia	South-east	Delta	Southern Plains	Mountain	Pacific	All farms
<i>Dollars per farm</i>											
Total assets	637,408	491,527	463,596	352,783	608,701	1,466,852	542,823	775,579	850,617	1,759,352	595,245
Current assets	69,243	45,373	61,650	88,482	99,838	136,252	81,993	137,577	180,565	204,440	70,241
Livestock inventory	11,555	7,978	13,373	18,227	17,249	24,643	32,327	33,255	37,746	64,565	14,317
Crop inventory	18,039	16,597	22,672	11,993	10,432	6,920	6,505	18,664	35,877	31,430	18,190
Purchased inputs	5,704	6,045	4,101	2,748	4,846	7,862	7,478	5,693	24,299	33,316	6,985
Cash invested in growing crops	1,266	319	190	2,670	694	423	1,395	2,233	276	803	694
Prepaid insurance	712	557	399	484	583	1,661	550	723	787	1,930	640
Other assets 3/	31,967	13,877	20,915	52,360	66,034	94,743	33,738	77,009	81,580	72,396	29,415
Noncurrent assets	568,165	446,154	401,946	264,301	508,863	1,330,600	460,830	638,002	670,052	1,554,912	525,004
Investments	2,965	2,388	636	1,451	2,323	1,055	795	1,181	3,208	7,653	2,375
Land and buildings 4/	400,058	258,933	269,222	147,529	363,057	1,038,322	287,068	357,374	367,773	950,337	333,188
Operator's dwelling	52,184	40,486	44,865	14,432	45,921	61,063	47,107	43,229	51,043	67,746	44,885
Farm equipment	90,015	101,992	71,763	66,887	73,113	89,612	69,497	129,259	98,600	161,181	94,469
Breeding animals	75,127	82,841	60,325	48,434	70,370	201,611	103,470	150,188	200,471	435,741	94,972
Total liabilities	80,690	76,907	57,985	64,051	40,192	179,469	96,804	117,423	181,125	277,149	85,007
Current liabilities	22,433	23,296	13,412	19,396	8,077	48,193	67,796	34,609	47,653	109,902	25,681
Notes payable within one year	8,758	11,585	3,066	10,365	1,714	25,402	57,876	14,732	21,079	73,284	12,496
Current portion of term debt	9,301	7,292	6,601	5,558	3,909	14,353	5,938	12,858	18,836	21,244	8,422
Accrued interest	2,290	2,175	1,627	1,817	1,132	5,131	2,785	3,312	5,202	7,853	2,407
Accounts payable	2,084	2,244	2,118	1,656	1,322	3,307	1,197	3,707	2,536	7,521	2,356
Noncurrent liabilities	58,257	53,611	44,573	44,655	32,115	131,276	29,008	82,814	133,472	167,247	59,326
Non-real estate	18,547	11,853	12,071	7,752	5,212	14,624	14,608	24,868	32,320	30,795	14,571
Real estate	39,710	41,758	32,502	36,903	26,903	116,652	14,400	57,946	101,152	136,452	44,755
Farm equity 5/	556,718	414,620	405,611	288,732	568,509	1,287,383	446,019	658,156	669,492	1,482,203	510,238
Debt/asset ratio 6/	0.13	0.16	0.13	0.18	0.07	0.12	0.18	0.15	0.21	0.16	0.14

1/ As of December 31.

2/ Dairy farms defined as farms generating at least 50 percent of the total value of production from dairy production.

3/ Includes accounts receivable, certificates of deposit, checking and savings balances, and any other financial assets of the farm business.

4/ The value of the operator's dwelling and any associated liabilities were included if the dwelling was located on the farm.

5/ Total farm assets minus total debt associated with the farm business.

6/ Indicates the degree of security for a lender and the relative use of an owner's capital.

Source: Farm Costs and Returns Surveys, USDA, Mitchell Morehart, 202-219-0801.

Appendix table 5--U.S. milk production cash costs and returns, per cwt, 1982-92

Item	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
	<i>Dollars</i>										
Gross value of production:											
Milk	13.52	13.50	13.38	12.69	12.46	12.48	12.20	13.53	13.70	12.24	13.15
Cattle	1.14	1.09	1.07	1.06	1.01	1.17	1.24	1.35	1.43	1.36	1.27
Other income 1/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.14	0.14	0.16
Total, gross value of production	14.66	14.59	14.45	13.74	13.47	13.65	13.44	15.01	15.27	13.73	14.58
Cash expenses:											
Feed--											
Concentrates	3.28	3.43	3.47	3.35	3.19	3.06	3.42	3.75	3.68	3.66	3.43
Byproducts 2/				0.21	0.20	0.18	0.22	0.27	0.28	0.29	0.29
Hay	0.86	0.85	0.82	1.10	1.04	0.99	1.37	1.24	1.18	1.04	1.06
Silage	0.54	0.56	0.58	0.58	0.57	0.53	0.82	0.93	0.86	0.86	0.81
Pasture and other forage	0.04	0.04	0.04	0.06	0.06	0.06	0.07	0.09	0.09	0.09	0.09
Other--											
Milk hauling and marketing	0.45	0.44	0.45	0.58	0.55	0.61	0.61	0.56	0.58	0.57	0.59
Artificial insemination	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13
Veterinary and medicine	0.20	0.21	0.22	0.20	0.20	0.20	0.20	0.21	0.21	0.20	0.23
Livestock hauling	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
Fuel, lube, and electricity	0.40	0.37	0.33	0.32	0.22	0.23	0.22	0.27	0.29	0.29	0.28
Machinery and building repairs	0.37	0.37	0.37	0.40	0.39	0.38	0.38	0.50	0.54	0.48	0.49
Hired labor	0.87	0.85	0.91	0.69	0.68	0.68	0.69	0.71	0.72	0.75	0.77
DHIA fees	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Dairy supplies	0.19	0.19	0.19	0.21	0.19	0.19	0.20	0.21	0.21	0.21	0.20
Dairy assessment	0.00	0.48	0.50	0.13	0.36	0.19	0.03	0.00	0.01	0.05	0.13
Other variable cash expenses 3/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.07	0.06
Total, variable cash expenses	7.39	7.98	8.07	8.04	7.86	7.51	8.44	9.00	8.92	8.76	8.64
General farm overhead	0.60	0.50	0.60	0.53	0.59	0.70	0.81	0.44	0.53	0.48	0.45
Taxes and insurance	0.35	0.36	0.34	0.37	0.35	0.35	0.39	0.39	0.37	0.39	0.39
Interest	1.56	1.55	1.63	1.41	1.23	1.03	1.02	0.77	0.83	0.78	0.66
Total, fixed cash expenses	2.51	2.41	2.57	2.31	2.17	2.08	2.22	1.60	1.73	1.65	1.50
Total, cash expenses	9.90	10.39	10.64	10.35	10.03	9.59	10.66	10.60	10.65	10.41	10.14
Gross value of production less cash expenses	4.76	4.20	3.80	3.39	3.43	4.06	2.78	4.41	4.62	3.32	4.44
Gross value of production:											
Milk	13.52	13.50	13.38	12.69	12.46	12.48	12.20	13.53	13.70	12.24	13.15
Cattle	1.14	1.09	1.07	1.06	1.01	1.17	1.24	1.35	1.43	1.36	1.27
Other income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.14	0.14	0.16
Total, gross value of production	14.66	14.59	14.45	13.74	13.47	13.65	13.44	15.01	15.27	13.73	14.58
Economic (full ownership) costs:											
Variable cash expenses	7.39	7.98	8.07	8.04	7.86	7.51	8.44	9.00	8.92	8.76	8.64
General farm overhead	0.60	0.50	0.60	0.53	0.59	0.70	0.81	0.44	0.53	0.48	0.45
Taxes and insurance	0.35	0.36	0.34	0.37	0.35	0.35	0.39	0.39	0.37	0.39	0.39
Capital replacement	1.57	1.56	1.54	1.66	1.60	1.55	1.67	1.48	1.70	1.35	1.29
Operating capital	0.12	0.12	0.12	0.08	0.05	0.06	0.08	0.09	0.08	0.06	0.04
Other nonland capital	1.04	0.99	0.93	0.53	0.51	0.57	0.65	0.77	0.97	0.86	0.87
Land	0.36	0.36	0.36	0.17	0.14	0.13	0.17	0.42	0.39	0.40	0.38
Unpaid labor	1.51	1.46	1.55	1.68	1.66	1.65	1.67	1.72	1.77	1.84	1.88
Total, economic costs	12.94	13.32	13.52	13.07	12.76	12.52	13.88	14.31	14.73	14.14	13.94
Residual returns to management and risk	1.72	1.27	0.93	0.68	0.71	1.13	-0.44	0.70	0.54	-0.41	0.64

Note: Survey base changed in 1989.

1/ Includes the dairy enterprise share of receipts from cooperative patronage dividends, assessment refunds, renting or leasing of dairy animals, manure sales, and insurance indemnity payments.

2/ The byproducts feed category first appeared in the 1985 FCRS.

3/ Includes the dairy enterprise share of expenses for bedding and litter, and custom manure hauling and disposal.

Appendix table 6--Commercial disappearance: Selected manufactured dairy products, 1970-93 1/

Year	Butter 2/	Cheese		Nonfat dry milk	Canned milk	Frozen products 4/	Milkfat	Skim solids
		American 3/	Other					
----- Million pounds -----						Million gallons	Million pounds	
1970	898.2	1,401.9	904.8	983.2	1,213.8	1,097.3	3,974	9,369
1971	847.1	1,454.8	987.0	981.8	1,186.9	1,102.4	3,986	9,522
1972	885.4	1,595.7	1,127.8	919.2	1,102.6	1,108.6	4,140	9,837
1973	855.6	1,677.1	1,210.2	1,110.1	1,056.7	1,118.6	4,143	10,068
1974	929.9	1,780.6	1,276.5	809.9	999.5	1,128.0	4,118	9,570
1975	950.8	1,717.1	1,331.9	697.0	923.9	1,183.9	4,170	9,587
1976	919.0	1,920.9	1,458.0	719.2	899.0	1,154.0	4,253	9,936
1977	859.8	1,958.8	1,512.3	682.2	775.2	1,167.6	4,223	9,995
1978	903.5	2,064.7	1,655.5	658.4	776.1	1,173.5	4,339	10,150
1979	895.0	2,113.1	1,730.4	603.1	773.7	1,152.1	4,380	10,221
1980	878.8	2,023.9	1,827.9	538.9	732.5	1,166.9	4,333	10,184
1981	869.2	2,147.9	1,875.6	464.1	750.4	1,167.7	4,359	10,229
1982	897.3	2,166.8	2,044.6	447.7	715.3	1,178.2	4,445	10,290
1983	881.7	2,083.3	2,134.3	459.9	685.8	1,224.2	4,457	10,328
1984	902.7	2,253.6	2,310.9	497.8	643.6	1,241.8	4,736	10,726
1985	918.2	2,279.1	2,515.7	435.0	598.1	1,251.0	4,771	10,966
1986	922.9	2,382.8	2,684.9	479.1	582.7	1,248.6	4,871	11,257
1987	902.5	2,437.1	2,880.2	492.9	577.3	1,260.7	4,939	11,569
1988	909.8	2,570.0	3,034.5	734.3	563.3	1,248.0	5,003	12,177
1989	876.0	2,683.1	3,208.9	873.0	520.9	1,214.0	4,978	12,532
1990	915.2	2,784.4	3,426.4	697.6	547.3	1,174.6	5,055	12,600
1991	903.0	2,792.7	3,574.0	663.8	543.7	1,196.1	5,090	12,703
1992	944.2	2,902.7	3,795.4	662.7	571.6	1,203.1	5,090	12,703
1993 5/	1,040.4	2,945.5	3,884.3	628.9	547.8	1,198.3	5,319	12,821

1/ Totals may not add because of rounding.

2/ Imports include butter-equivalent of butteroil.

3/ Imports include Colby cheese; stocks do not include processed cheese.

4/ Excludes Mellorine. Excludes soft ice cream starting 1986.

5/ Preliminary.

Appendix table 7--Fluid milk sales by product, 1970-93

Year	Plain whole milk	Flavored whole milk	Plain lowfat milk	Plain skim milk	Flavored lowfat and skim milk	Buttermilk	Total beverage milk
<i>Million pounds</i>							
1970	41,363	1,144	6,082	2,368	611	1,130	52,698
1971	41,043	1,287	7,022	2,552	538	1,153	53,595
1972	40,027	1,484	8,207	2,599	533	1,131	53,981
1973	38,473	1,549	9,100	2,921	571	1,065	53,679
1974	36,765	1,440	9,763	2,959	561	988	52,476
1975	36,188	1,366	11,468	2,480	719	1,011	53,232
1976	35,241	1,475	12,431	2,524	864	1,021	53,556
1977	34,036	1,446	13,426	2,617	1,062	1,007	53,594
1978	33,235	1,359	14,250	2,543	1,097	983	53,467
1979	32,480	1,236	15,043	2,604	1,129	939	53,431
1980	31,253	1,075	15,918	2,636	1,197	927	53,006
1981	30,397	843	16,662	2,583	1,288	926	52,699
1982	29,350	710	17,038	2,449	1,283	950	51,780
1983	28,871	749	17,638	2,474	1,374	1,006	52,112
1984	28,204	907	18,525	2,726	1,409	1,020	52,791
1985	27,760	882	19,812	3,009	1,430	1,046	53,939
1986	26,446	851	21,157	3,236	1,516	1,017	54,223
1987	25,622	829	21,722	3,403	1,607	1,039	54,222
1988	24,423	807	21,974	3,936	1,612	995	53,747
1989	22,743	767	23,769	4,988	1,606	907	54,780
1990	21,333	691	24,508	5,702	1,657	879	54,770
1991	20,848	675	25,136	6,023	1,726	858	55,266
1992	20,303	691	25,341	6,375	1,751	806	55,267
1993	19,634	693	25,040	6,886	1,783	784	54,820

Continued--