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BY THE COMPTROLLER GENERAL

# Report To The Congress

OF THE UNITED STATES

## Overview Of The Dairy Surplus Issue--Policy Options For Congressional Consideration

The main objective of federal dairy policies and programs is to assure an adequate supply of milk. A principal program--the price-support program--requires the government to purchase, at designated prices, any quantity of butter, cheese, and nonfat dry milk offered by milk processors that meets specifications. Such purchases reduce commercial supplies to quantities that can be sold at prices exceeding or equivalent to the government's purchase price.

The nation's milk consumption has not kept pace with its ability to produce milk. As a result, government expenditures for purchasing and storing surplus products have increased dramatically--government costs totaled about \$9.9 billion in fiscal years 1979 through 1984. Government efforts to reduce costs and inventories have had only limited success.

The potential for significant increases in on-farm productivity is great due to technological advances underway. Unless the government adopts policies that will reduce economic incentives attracting resources into dairy farming, burdensome surpluses and high government costs will likely continue. GAO presents, for congressional consideration, an analysis of several policy options for dealing with the problem. GAO's analysis shows that some options better meet the specific goals that GAO developed from the broad objectives of federal dairy policies.



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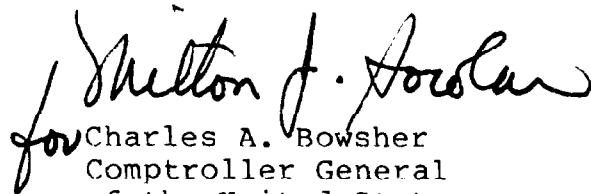
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To the President of the Senate and the  
Speaker of the House of Representatives

This report summarizes our work on dairy-related issues over the last 6 years and discusses the magnitude and nature of the dairy surplus problem. This report also provides, for congressional consideration, our analysis of several policy options for dealing with the problem.

We prepared this report because of widespread concern that the dairy price-support program has not worked as well as it should, as evidenced in recent years by heavy government purchases at high costs, and because the Congress has before it several legislative proposals for revising existing dairy policies.

We are sending copies of this report to the Director, Office of Management and Budget, and to the Secretary of Agriculture.

*for*   
Charles A. Bowsher  
Comptroller General  
of the United States



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## EXECUTIVE SUMMARY

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In recent years, the supply of dairy products has significantly exceeded commercial demand, and government expenditures for purchasing and storing surplus products have increased dramatically--government costs totaled about \$9.9 billion in fiscal years 1979 through 1984. Because this problem is expected to continue, the Congress is considering various legislative proposals to revise dairy policies.

This report summarizes GAO's work on dairy-related issues over the last 6 years and discusses the magnitude and nature of the dairy surplus problem. The report also provides, for congressional consideration, an analysis of several policy options for dealing with the problem.

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### BACKGROUND

The main objective of federal dairy policies and programs is to assure an adequate supply of milk. One of the principal programs--the price-support program--requires the government to purchase, at designated prices, any quantity of butter, cheese, and nonfat dry milk offered by milk processors that meets specifications. Such purchases reduce commercial supplies to quantities that can be sold at prices exceeding or equivalent to the government's purchase price. (See pp. 1 to 5.)

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### RESULTS IN BRIEF

Government dairy product purchases and inventories increased sharply from 1979 through 1983. Even though purchases and inventories dropped in 1984 due primarily to a temporary milk diversion program, the temporary lowering of price supports, and other actions, they remain at high levels, and the Department of Agriculture (USDA) expects this condition to continue.

The nation's milk consumption has not kept pace with its ability to produce milk, and the potential for significant increases in on-farm productivity is great due to technological advances underway.

Unless the government adopts policies that will reduce economic incentives attracting resources into dairy farming, burdensome surpluses of federally purchased dairy products and high government costs will likely continue. GAO's

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analysis shows that some policy options better meet the specific goals that GAO developed from the broad objectives of federal dairy policies.

**PRINCIPAL FINDINGS**

**Support Prices**

The milk support price rose from \$9 to \$13.10 per 100 pounds between 1977 and 1980--a 46-percent increase. Excess milk supplies developed, because dairy farmers were provided a strong financial incentive to produce more milk.

**Costs and Inventories**

The government's net purchase costs in fiscal year 1979 were \$244 million. In 1980, costs increased to almost \$1.3 billion and continued to rise each year, reaching \$2.6 billion in 1983. The temporary (January 1984 through March 1985) milk diversion program and other efforts reduced surpluses in 1984, and costs dropped to \$1.6 billion. USDA, however, expects costs to increase to about \$2 billion in 1985. (See pp. 10 to 12.)

Reflecting the increased purchases was a rise in USDA dairy product inventories, as follows:

	USDA dairy product stocks at calendar year end					
	1979	1980	1981	1982	1983	1984
	----- (million pounds) -----					
Butter	152.6	268.2	381.9	438.7	463.5	259.5
American cheese	2.8	168.6	515.4	646.8	793.3	620.8
Nonfat dry milk	392.7	501.7	803.0	1,188.7	1,320.3	1,170.6
Milk equivalent	3,180.0	7,207.0	12,980.0	15,451.0	17,412.0	11,492.0

**Efforts to Reduce Costs and Inventories**

To try to reduce costs and inventories, the Congress passed temporary legislation to freeze the support price at \$13.10 per 100 pounds in 1981, and to reduce it to \$12.60 in 1983, \$12.10 in April 1985, and \$11.60 in July 1985. (See pp. 13 and 14.) The temporary legislation is due to expire September 30, 1985, at which time the support price will rise to \$16.22 unless other action is taken. (See p. 29.)

Government efforts to reduce costs and inventories have also included temporary programs to donate dairy products to the needy and to reduce the quantity of milk produced and marketed, and actions to expand domestic and

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foreign markets and uses of dairy products.  
(See pp. 15 to 23.)

**Milk Production  
and Consumption  
Trend**

According to recent Office of Technology Assessment testimony, the combined effects from technological advances could increase milk production per cow 14 percent by 1990 and 43 percent by the year 2000. According to USDA, per capita consumption of dairy products will likely remain steady, translating to about a 1-percent annual market growth. In this situation, surpluses will continue to be a problem. (See pp. 24 to 28.)

**Policy Goals  
and Options**

In deciding dairy policies, the government faces a difficult task in balancing the interests of consumers, the dairy industry, distributors, and taxpayers. To assist the Congress in its deliberations on which course of action to take, GAO analyzed nine policy options and their potential consequences in terms of six specific goals that, if met, could help ensure that the overall goal of assuring an adequate supply of milk is met in an efficient manner.

The specific goals relate to automatic adjustment of price levels; accommodation of changes in per-unit production costs, such as those due to technological advances; maintenance of regional production patterns under which milk is produced and distributed at least cost to the consumer; avoidance of excessive government costs; visibility of program costs; and allowing the market to be the main price and income determinant while cushioning declines in the price farmers receive. Although GAO considered each goal as equally important, policymakers may consider one or more goals of greater importance than others. In such a case, different conclusions could be reached about which option would be best.

Of the nine policy options GAO analyzed, two fully meet five of the six specific goals and partially meet the other. Both options assume continuation of the present price-support purchase program. These two options are

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**EXECUTIVE SUMMARY**

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--a supply-demand adjuster, which would raise, lower, or maintain the support price depending on the anticipated level of government purchases and

--a moving-average price, which would establish the support price based on a designated percentage of the average market price for milk over some preceding time period (for example, the preceding 3-year period).

A third option--deregulation of the dairy industry--meets most of the goals but, in the short run, would likely result in substantial industry instability and adverse financial impact on some dairy farmers and processors.

Of the other options, two--using a dairy parity index to set the support price and placing quotas on the amounts of milk farmers can market--do not meet three of the goals, and four--using the cost of production to set the support price, paying farmers to reduce milk marketings, paying farmers the difference when the market price is below a target price, and eliminating the price-support program while retaining other federal dairy programs--do not meet two of the goals. Also, except for the last option, these options only partially meet from one to four other goals. (See pp. 29 to 50.)

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**MATTERS FOR CONGRESSIONAL CONSIDERATION**

Several legislative proposals before the 99th Congress are aimed at changing federal dairy policy. In deliberating such legislation, the Congress may wish to consider either the supply-demand adjuster or moving-average price option as the pricing mechanism for establishing the support price. (See p. 54.)

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**RECOMMENDATIONS**

GAO is making no recommendations.

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**AGENCY COMMENTS**

USDA generally agreed with the facts, conclusions, and matters for consideration raised in the report. USDA made several suggestions to improve the technical accuracy of the report, and GAO made changes where appropriate.



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ABBREVIATIONS

AMS	Agricultural Marketing Service
ASCS	Agricultural Stabilization and Conservation Service
CCC	Commodity Credit Corporation
FAS	Foreign Agricultural Service
FDA	Food and Drug Administration
FNS	Food and Nutrition Service
GAO	General Accounting Office
MDP	Milk Diversion Program
OTA	Office of Technology Assessment
TEFAP	Temporary Emergency Food Assistance Program
USDA	U.S. Department of Agriculture

## CHAPTER 1

### INTRODUCTION

The major objective of federal dairy policies and programs is to assure an adequate supply of milk. In recent years, however, the U.S. dairy industry has produced significantly more dairy products than can be marketed commercially at established market prices. The surplus, in the form of dairy products--such as butter, cheese, and nonfat dry milk--is purchased by the government. The net purchase costs<sup>1</sup> of surplus dairy products increased from about \$244 million in fiscal year 1979 to about \$2.6 billion in fiscal year 1983 and about \$1.6 billion in fiscal year 1984. USDA estimates that net purchase costs will be about \$2 billion in fiscal year 1985. The value of the accumulated surplus inventories, based on costs, increased from about \$570 million in fiscal year 1979 to about \$4.2 billion in fiscal year 1983, and to about \$4.1 billion in 1984.

Resolving the imbalance between supply and demand has become a sensitive political/economic issue. Many agree that something has to be done to reduce federal dairy program costs; however, a consensus has not developed about the means. Taxpayers want reduced government expenditures, and consumers want lower dairy product prices. The dairy industry's various segments--processors, producers, and users--differ in their approaches to reducing the industry's excess production capacity. The dairy surplus problem is expected to receive considerable attention during debates on the 1985 farm bill. Some legislative proposals (such as S. 501, S. 616, and H.R. 2000) have been introduced in the 99th Congress. Additional proposals have come from dairy farmer organizations, dairy product processors, and others.

### DAIRY INDUSTRY

The importance of dairy products to the American diet underlies the need for an assured milk supply. Dairy products are the most important source of calcium and provide significant amounts of other important nutrients, including protein. Two grades of milk are produced. Grade A can be used for fluid consumption or manufacturing. Grade B may be used only for manufacturing. To be classified as grade A, milk must be produced under conditions meeting higher established sanitary

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<sup>1</sup>Net cost represents price-support purchases and related costs for processing, packaging, transporting, and storing dairy products, less (1) proceeds from sales to commercial buyers for domestic use and for export, U.S. military agencies, and foreign government and private welfare agencies, and (2) monies collected from assessments on dairy farmers' milk marketings net of payments made to dairy farmers for milk marketing reductions (see p. 18).

specifications than those for grade B. About 86 percent of the nation's milk supply was classified as grade A in 1984; the rest, as grade B. Grade A milk not used for fluid purposes and all grade B milk are generally used to manufacture dairy products, such as butter, cheese, and nonfat dry milk.

Milk production is seasonal. Production is generally greatest during spring and early summer and lowest in November. Fluid milk is bulky, highly perishable, and subject to bacterial contamination. It must be produced and handled under sanitary conditions and marketed quickly. Thus, milk not consumed in fluid form must be processed to prevent loss. To supply the demand for fluid milk, production must be adequate to meet demand on days of high sales, even in fall and winter. Consequently, many plants use the excess production from days of low demand and periods of heavy production to manufacture dairy products.

#### DAIRY PROGRAMS

Federal dairy programs began as a reaction to events culminating in the Great Depression of the 1930's. The Depression created unemployment and lower family incomes that reduced demand, and milk prices fell by about one-third. As a result, some dairy farmers refused to deliver their milk to dairy plants. This led to civil disorder and interrupted milk supplies. In reaction to these events, the federal government created milk-marketing orders that established marketing rules and minimum milk prices that milk processors must pay dairy farmers for fluid milk. To help ensure a needed supply of dairy products during World War II, the federal government encouraged increased production through price supports. In 1949, legislation was enacted making milk price supports a permanent program.

To assure adequate milk supplies, the federal government since 1949 has used several interrelated programs, the most important of which are marketing orders, price supports, and import quotas.

- Marketing orders establish minimum prices that fluid milk handlers are required to pay dairy farmers producing grade A milk in specified marketing areas according to the use made of the milk.
- Price supports help assure dairy farmers a minimum average price for manufacturing-grade milk and support the level of all milk prices.
- Import quotas prevent interference with the price-support program.

## Marketing orders

Marketing orders are marketing plans designed by the producers and handlers of particular agricultural commodities in specific areas to regulate the marketing of those commodities. Milk-marketing orders set forth acceptable marketing practices, terms and conditions of sale, and prices. Marketing orders are legal instruments issued by the Secretary of Agriculture and, once put into effect, are binding on all producers and handlers operating in the regulated area. The U.S. Department of Agriculture's (USDA's) Agricultural Marketing Service (AMS) administers the federal milk-marketing order program.

As of June 1985, 44 federal milk-marketing orders were in effect based on the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601-624). Only milk of grade A quality is regulated by federal orders, and each order applies to a specific geographic area. According to USDA, milk-marketing orders are designed to aid in stabilizing market conditions in the sale of milk by dairy farmers to dairy processors. Some states, such as California, regulate fluid milk prices under state orders and therefore do not have federal orders. Other states have both federal and state orders.

A milk-marketing order regulates the terms under which milk processors, including cooperatives, purchase grade A quality milk from dairy farmers. Each order requires fluid milk handlers to pay specified minimum prices according to the milk's use as fluid or manufactured products. This concept is referred to as classified pricing. Marketing orders require that farmers receive a "blended" price based on the proportion of milk that is used for fluid consumption and for manufacturing purposes in the marketing order area.

Most orders have three classes. Milk used for fluid consumption is placed in the highest price class (class I) and generally includes whole milk, skim and low-fat milk, milk drinks, flavored milk, and buttermilk. Milk used to manufacture soft products, such as ice cream and cottage cheese, is class II. Milk used in manufacturing hard products, such as butter, cheese, and nonfat dry milk, is placed in class III. Minimum prices for each class are established for each marketing order on the basis of specified relationships to the price of manufacturing-grade milk in Minnesota and Wisconsin (the Minnesota-Wisconsin price series), so that they will automatically reflect changes in support prices when market prices are at or below the support price.

## Price supports

The Agricultural Act of 1949 (7 U.S.C. 1421-1449), which created the price-support program, requires the Secretary of

Agriculture to support the price of milk at 75 to 90 percent of its parity price.<sup>2</sup> Several subsequent laws increased the minimum level of parity for certain periods to 80 percent of the parity price. The program's purpose is to set a price-support level that will (1) assure an adequate supply of pure and wholesome milk to meet current needs, (2) reflect changes in the cost of production, and (3) assure a level of farm income adequate to maintain productive capacity sufficient to meet anticipated future needs.

To try to reduce the dairy price-support program's cost, the Congress froze the price-support level at \$13.10 per hundredweight effective October 1980, and in 1983 reduced the support level to \$12.60 per hundredweight, or 62 percent of parity. As the 1983 legislation also authorized, the Secretary of Agriculture reduced the support price for milk by 50 cents per hundredweight in April 1985 and again in July 1985 because estimated purchases exceeded specified levels. As a result, the support price for milk is currently \$11.60 per hundredweight. These steps, in effect, suspended the use of the parity price formula for setting support prices.

USDA's Agricultural Stabilization and Conservation Service (ASCS) administers the price-support program. In carrying out the program, ASCS supports the price of milk used in manufactured dairy products. To maintain minimum prices, ASCS, through USDA's Commodity Credit Corporation (CCC),<sup>3</sup> purchases any quantity of butter, cheese, and nonfat dry milk that is offered and meets specifications. Such purchases reduce supplies of dairy products on the commercial market to the quantities that can be sold at prices equivalent to the support price. The purchase prices for butter, cheese, and nonfat dry milk are based on the support price plus a manufacturing allowance to cover the costs of processing milk into these products.

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<sup>2</sup>In general, the parity price is that price that will give a farm commodity the same purchasing power it had in a selected base period (Jan. 1910 through Dec. 1914) when prices received and paid by farmers were considered to be in good balance. The formula for computing parity prices is set forth in Section 301 of the Agricultural Adjustment Act of 1938, as amended (7 U.S.C. 1301).

<sup>3</sup>CCC is a wholly owned government corporation created in 1933 to stabilize, support, and protect farm income and prices; to assist in maintaining balanced and adequate supplies of agricultural commodities; and to facilitate the orderly distribution of these commodities. CCC has no operating personnel; its programs are carried out primarily through the personnel and facilities of ASCS.

## Import quotas

Import quotas are authorized under Section 22 of the Agricultural Adjustment Act of 1933, as amended (7 U.S.C. 624). Section 22 provides for restricting imports if they are expected to interfere with the price-support program. These quotas now cover most manufactured dairy products. According to USDA, without import quotas, price-support program costs would increase sharply, and our domestic market would be flooded with dairy products from abroad. Only the President can impose, adjust, or eliminate section 22 import quotas, based on the findings and recommendations of the U.S. International Trade Commission.

The price-support program currently maintains U.S. dairy product prices above world market levels. According to a January 1984 USDA report, U.S. dairy product prices in the domestic market are about 2 to 3 times the prices in the international market. Since 1974, dairy product imports have been held to about 1.5 to 2 percent of U.S. production. In fiscal year 1984, the United States exported agricultural commodities valued at \$38 billion, of which about \$0.4 billion represented dairy products.

## Other dairy-related programs

The surplus dairy products purchased under the price-support program are stored in commercial warehouses until disposed of through donation, sale, or barter. Dairy program policy, as affirmed in Public Law 98-92, enacted September 2, 1983, prevents USDA from disposing of its acquired surplus dairy products in ways that will adversely affect commercial sales. As of July 1985, CCC policy on selling its inventories to commercial buyers called for it to charge 110 percent of the support purchase price. Most dispositions, however, have been through donations to domestic school lunch and other food-for-the-needy programs, many of which USDA's Food and Nutrition Service (FNS) administers, and to foreign assistance programs. The products may also be sold for export or on a restricted basis, such as for animal feed only, or may be exchanged or bartered for products of foreign countries.

In recent years, the Congress has authorized special programs to either reduce the milk supply or reduce inventories of dairy products. These programs have included the Milk Diversion Program (MDP), a temporary 15-month program under which dairy farmers who volunteered to reduce their milk marketings were paid primarily from assessments on all milk marketings, and a special surplus distribution program under which cheese, butter, and other surplus products have been provided to states for distribution to the needy.

## RELATED GAO REPORTS

In our July 21, 1980, report entitled Alternatives to Reduce Dairy Surpluses (CED-80-88), we said that the dairy price-support program was considered by many to be the principal cause of dairy surpluses. We concluded that the parity price formula used to determine the milk price-support level was inadequate because it did not consider many factors affecting milk market conditions and, at the same time, included some factors having little to do with milk production. We concluded that the time had come for the Congress to reassess the dairy price-support program. We recommended certain changes in some components of the parity price formula to improve its effectiveness. We also recommended that the Congress establish a federal nationwide producer-financed promotion program for dairy products. However, we pointed out that our recommendations on changes to the parity price formula, if implemented, would not completely solve the dairy surplus problem. In view of the apparent need for fundamental changes in federal dairy policies, we presented other major policy alternatives that the Congress could consider. Since 1980, the Congress has taken a number of actions to reduce inventories and government costs, most of which were of a temporary nature. (See ch. 3.)

In our March 14, 1984, report entitled Improved Administration of Special Surplus Dairy Product Distribution Program Needed (GAO/RCED-84-58), we concluded that because FNS had not provided national guidelines, some states lacked adequate procedures to ensure that only the needy participated in the program. Program administration varied widely, abuses occurred, and displacement of commercial sales was greater than necessary. We recommended that to deal with the issues discussed in the report, FNS be more specific when it issued the final program regulations. Although final regulations were not issued, FNS took other actions to improve the administration of the program.

We issued a report entitled Effects and Administration of the 1984 Milk Diversion Program (GAO/RCED-85-126), on July 29, 1985. We said the program was one factor contributing to an overall reduction in milk production during 1984 and helped CCC avoid price-support purchase costs of as much as \$664 million. Although the program's effect was consistent with its objective of reducing the quantity of milk marketed for commercial use during the program period, we pointed out evidence indicating that milk marketings would increase after the program expired, and concluded that any effect would be short-lived. In addition, certain program requirements, such as those for controlling dairy cow transfers, were difficult to administer, and we identified or were advised of instances where dairy farmers had or could have circumvented these requirements.



On May 18, 1982, we issued a report entitled Savings Are Possible Through Better Management of Government-Owned Dairy Products (GAO/CED-82-79) in which we said that the government could realize annual savings of up to \$1.4 million if it purchased its requirements for 1-pound packages of butter directly from suppliers, thereby avoiding the expense of repackaging bulk supplies. We also said that about 2,600 staff hours of USDA warehouse examiners' time could be saved annually if they examined commercial warehouses with good performance records two rather than three times a year. USDA took action on our recommendations and now buys some butter in 1-pound packages and inspects warehouses with good performance records twice a year.

In response to several congressional requests, we reviewed the adequacy of USDA's and four states' inventory management systems for surplus products owned by USDA and donated to states under the Temporary Emergency Food Assistance Program (TEFAP). Our review showed that USDA controls over receipts, disposals, and inventory were sound, but that the inventory management systems used by the four states were in need of improvement to assure that products donated for TEFAP were properly accounted for. We also found that one of the four FNS regional offices we visited had not evaluated the state programs, that the evaluation reports issued by the three other regional offices did not always present enough information for management to judge whether the states' systems were adequate, and that only one regional office monitored the states' inventory records to determine whether inventory levels were reasonable in relation to normal usage.

In a draft report submitted to the agency and states for comment, we said that FNS and the states had initiated actions, which if properly implemented, should improve inventory control practices at the state and local levels. We said, however, that FNS monitoring of state programs needed to be improved. Accordingly, we recommended that if TEFAP is extended, FNS (1) periodically evaluate the states' inventory management systems to ensure that the systems provide adequate control over the receipt, disposal, and inventory of products at state and local levels and (2) review states' monthly inventory reports to ensure that program data are reported and that inventory levels are related to normal usage.

As part of the above review, we issued a separate report to Representative Mary Rose Oakar on January 7, 1985, entitled Government-Owned Surplus Dairy Products Held in Inventory (GAO/RCED-85-43) in which we updated a previous report to her and other representatives (GAO/RCED-84-72, Dec. 20, 1983) on the age, condition, and value of USDA dairy inventories. In the January 1985 report, we said that following several years of increases, USDA-owned inventories declined in 1984 because of increased dispositions and lower purchases. Nevertheless, the dairy inventory was getting older, with 36 percent more cheese and 24 percent more nonfat dry milk 1 year or older in June 1984 than in June 1983. We said that although the proportion of dairy products in inventory that USDA inspections had identified

as deteriorated was small, the inventory's overall condition was uncertain because much of it (about 50 percent as of December 1984) had not been reinspected since it was purchased. We reported that USDA lost about \$28 million on dairy product sales in calendar year 1983 and about \$19 million for the first 6 months of 1984, the vast majority of which involved sales of nonfat dry milk. According to USDA officials, the nonfat dry milk, which was sold for use as animal feed, was aged or had a high moisture content but was not off-condition or unfit for human consumption.

#### OBJECTIVES, SCOPE, AND METHODOLOGY

This report discusses the federal dairy programs and policies, the surplus problem that has occurred in recent years, and various alternatives that have been proposed to deal with this problem. This report is intended to provide the Congress a comprehensive overview on dairy-related issues. The report covers reviews we made of dairy-related issues over the last 6 years as well as matters reviewed specifically for inclusion in this report--technology improvements in the dairy industry, dairy product promotion activities, and the potential for increased domestic and foreign donations and sales of surplus products. We did our work on this report between October 1984 and April 1985 and in accordance with generally accepted government auditing standards. To the extent practical, we obtained updated or supplemental information through August 1985.

In preparing this report, we updated statistics and other information contained in our prior reports. Dr. Ronald D. Knutson, professor and extension economist at Texas A&M University, assisted us in our overall review and provided extensive assistance in our analysis of options to revise or replace the dairy price-support program. Dr. Knutson has extensive experience with dairy marketing and policy matters. Also, Dr. Robert Cropp, Professor and Agricultural Marketing Specialist, University of Wisconsin-Platteville; Dr. John W. Siebert, Extension Economist, University of California at Davis; and Dr. Andrew M. Novakovic, Assistant Professor, Department of Agricultural Economics, Cornell University, reviewed and commented on a draft of this report. Their comments were considered and incorporated where appropriate in this report.

Essentially, we focused our work on the following issues:

- Causes of the dairy supply and demand imbalance.
- Problems encountered in past efforts to reduce federal dairy product inventories.
- Alternatives available to the Congress for solving the dairy industry's overcapacity problem.

The methodology we used for our issued reports is discussed in each report. In addition, the methodology we used for work specifically done for this report is as follows:

--We made a limited review of technology changes in the dairy industry to determine whether anticipated technological gains and their possible impact on the surplus issue would be an important consideration in developing dairy policy. We limited our review so as not to duplicate a study initiated by the Office of Technology Assessment (OTA). OTA made a broad study of the impact of technology changes on farm structure that included dairy technology impacts. OTA's interim study report was released in March 1985.<sup>4</sup>

Our work included interviewing dairy scientists from USDA's Agricultural Research Center at Beltsville, Maryland, and its Dairy Forage Research Center at Madison, Wisconsin. We also met with scientists and agricultural economists at Cornell University in New York and at the Universities of Minnesota and Wisconsin. We selected these institutions because they are located in major dairy states and are well known for their dairy research programs. Further, we contacted an official of the federal Food and Drug Administration (FDA), and researchers at the Virginia Polytechnic Institute and State University, Ohio State University, Michigan State University, and the University of California at Davis to discuss specific topics we identified during our review.

--We reviewed dairy product promotion activities and the potential for expanding domestic and foreign markets for dairy products. Our objectives were to obtain current status data on the promotion activities, determine the effectiveness of USDA's efforts to increase quantities of dairy products disposed of through various outlets and a new dairy promotion program, and identify potential operational difficulties that may be surfacing. We interviewed officials of AMS, FNS, and USDA's Foreign Agricultural Service (FAS). We also interviewed officials of state and national dairy promotion programs. Further, we reviewed USDA reports and industry periodicals.

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<sup>4</sup>Technology, Public Policy, and the Changing Structure of American Agriculture: A Special Report for the 1985 Farm Bill, OTA-F-272, Mar. 1985.

## CHAPTER 2

### DAIRY PRODUCT SURPLUSES ARE A

### CONTINUING AND COSTLY PROBLEM

After trending downward in the late 1960's and early 1970's, milk production generally has shown an annual increase since 1975. Most of the milk produced by U.S. dairy farmers is sold for off-farm, or commercial, use. However, commercial use has increased less than production, creating an imbalance and leading to a surplus of dairy products. The government, under CCC's price-support program, acquires the surplus.

Before 1980, surpluses and government costs were relatively small compared with the present situation. From 1980 through 1983, however, CCC purchased an increasing share of the nation's milk marketings, that is, milk sold for commercial use. In fiscal year 1979, CCC purchased about 1.8 percent of the nation's milk marketings, on a milk-equivalent<sup>1</sup> basis, at a net cost of \$244 million. By the end of fiscal year 1983, CCC purchases had risen to about 12.2 percent of milk marketings at a net cost of almost \$2.6 billion. In fiscal year 1984, CCC purchased about 6.6 percent of milk marketings at a net cost of about \$1.6 billion. As of July 1985, USDA estimated that CCC's fiscal year 1985 purchases would amount to 7.5 percent of milk marketings at a net cost of \$2 billion.

### GOVERNMENT COSTS AND INVENTORIES HAVE RISEN SHARPLY IN RECENT YEARS

From inception of the dairy price-support program in 1949, through fiscal year 1979, CCC purchases of surplus dairy products varied from year to year, generally requiring expenditures measured in millions of dollars. However, beginning in fiscal year 1980 and through fiscal year 1984, expenditures surpassed the billion-dollar level. According to USDA statistics, the net costs of dairy price supports ranged from \$26 million to \$539 million annually between fiscal years 1952 and 1973.<sup>2</sup> Over the remaining 1970's, annual outlays fluctuated widely, from about \$31 million to over \$700 million. Then in fiscal year 1980, program costs went to almost \$1.3 billion and, as table 2.1 shows, continued to rise each succeeding year through fiscal year 1983, when net price-support purchases reached a record \$2.6 billion. Although costs dropped to about \$1.6 billion in fiscal year 1984, USDA estimates that they will increase to \$2 billion in fiscal year 1985.

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<sup>1</sup>Milk equivalent refers to the amount of milk required to produce butter, cheese, nonfat dry milk, and other dairy products.

<sup>2</sup>Since Oct. 1, 1976, the federal fiscal year has run from October through September. Before then, it ran from July through June.

Table 2.1: Net Price-Support Purchases,  
1979 Through 1984

<u>Fiscal</u> <u>year</u>	<u>Net price-</u> <u>support purchases</u>
	(millions)
1979	\$ 244.3
1980	1,274.0
1981	1,967.2
1982	2,231.3
1983	2,592.0
1984	1,588.1

Source: USDA's Dec. 1984 Dairy Outlook and Situation Report.

Reflecting these increased purchases was the rise in CCC's dairy product inventories. CCC purchases of milk products averaged slightly more than 3 percent of marketings during the 1966-79 period, before the expansion in production. At the end of calendar year 1983, CCC had inventories equivalent to 17.4 billion pounds of milk, contrasted with about 3.2 billion pounds in 1979. Table 2.2 shows CCC inventories of butter, cheese, and nonfat dry milk and the milk equivalent of all dairy stocks from 1979 through 1984.

Table 2.2: CCC Dairy Product Stocks at Calendar Year End,  
1979 Through 1984

	<u>CCC dairy product stocks at calendar year end</u>					
	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
	----- (million pounds) -----					
Butter	152.6	268.2	381.9	438.7	463.5	259.5
American cheese	2.8	168.6	515.4	646.8	793.3	620.8
Nonfat dry milk	392.7	501.7	803.0	1,188.7	1,320.3	1,170.6
Milk equivalent	3,180.0	7,207.0	12,980.0	15,451.0	17,412.0	11,492.0

Contributing to the recent decreases in CCC purchases and stocks was the MDP, a temporary 15-month (Jan. 1984-Mar. 1985) program to encourage dairy farmers to voluntarily reduce their milk marketings. Still, CCC purchases, which totaled about 16.8 billion pounds milk equivalent in calendar year 1983, were about 8.6 billion pounds milk equivalent in 1984. With the MDP's termination, an expansion in production was a strong possibility with the effect of again-rising government purchases and inventories. In our July 1985 report on the MDP, we said that evidence indicated that production would rebound to preprogram levels after the program expired. (See p. 19.)

USDA's July 1985 Dairy Outlook and Situation Yearbook said that milk production during calendar year 1985 was expected to be 2 to 3 percent above the 1984 level, while marketings were expected to be 0.5 to 1.5 percent higher.

DAIRY FARMERS CONTINUE TO INCREASE MILK PRODUCTION

In 1970 U.S. dairy farmers produced about 117 billion pounds of milk. In 1984, milk production totaled 135.4 billion pounds, or about 16 percent more than in 1970. About two-thirds of the 16-percent increase took place between 1979 and 1984. Dairy farmers accomplished this increase primarily by increasing the yield per cow rather than by milking more cows. In fact, as table 2.3 shows, the number of milk cows actually declined between 1970 and 1979, and after expanding from 1980 through 1983, declined again in 1984. USDA has estimated that the average number of cows in 1985 will be 0.5 percent higher than 1984 levels.

As table 2.3 also shows, milk production per cow has made substantial gains. Between 1970 and 1984, the average number of milk cows declined by over 9 percent, while production per cow increased about 28 percent. The gain in production per cow can be attributed to the introduction of new dairy technologies and the expansion of existing technologies, which include improved breeding, feeding, and management techniques.

Table 2.3: Number of Milk Cows on Farm and Milk Production Per Cow, 1970 Through 1984

<u>Year</u>	<u>Yearly average number of milk cows on farms</u>	<u>Milk production per cow</u>
	(thousands)	(pounds)
1970	12,000	9,751
1971	11,839	10,015
1972	11,700	10,259
1973	11,413	10,119
1974	11,230	10,293
1975	11,139	10,360
1976	11,032	10,894
1977	10,945	11,206
1978	10,803	11,243
1979	10,734	11,492
1980	10,799	11,891
1981	10,898	12,183
1982	11,011	12,306
1983	11,098	12,585
1984	10,840	12,495

Total use of milk has shown a more gradual uptrend over the years compared with total production. While milk production increased by more than 10 percent between 1979 and 1984, commercial use did not increase proportionately. In this same period, commercial sales and exports rose less than 5 percent, from 115.6 billion pounds to 121.3 billion pounds.

#### TREND ANALYSIS AND CORRECTIVE STEPS

Analysts trace the origin of the large price-support purchases and resultant surpluses to the Food and Agriculture Act of 1977 (Public Law 95-113, Sept. 29, 1977). This legislation raised the minimum price-support level from 75 percent of parity then in effect to 80 percent through March 31, 1979, and added a provision for semiannual adjustments through March 31, 1981. Before the 1977 act, the support price for milk was set annually at the beginning of the marketing year<sup>3</sup> and was effective throughout the year, unless the Secretary of Agriculture changed it. The 1977 act required semiannual adjustments to reflect estimated changes in the parity index during the preceding 6 months.

Excess milk supplies eventually developed, primarily because the high level of price supports resulting from these semiannual adjustments in an inflationary economy provided a strong financial incentive for dairy farmers to produce more milk and, with depressed prices in other farming sectors, made dairying a relatively more profitable alternative. To illustrate, the support price went from \$9 to \$13.10 per hundred-weight between 1977 and 1980--an increase of \$4.10, or 46 percent. By comparison, during this same period, the overall inflation rate was 27 percent.

The rise in production and surpluses did not, however, begin immediately after passage of the 1977 act. Any major expansion in milk supply is a long-term process because it takes an average of 27 months from birth until a heifer enters the milking herd. Thus, the increases in production and surpluses did not begin to appear until the 1980 marketing year.

The Congress has taken some steps to reduce the price-support level. It froze the support price at \$13.10 per hundredweight for the period between October 1980 and November 1983, except for a 20-day period in October 1981 when it was \$13.49 per hundredweight. In the Dairy and Tobacco Adjustment Act of 1983 (Public Law 98-180, Nov. 29, 1983), the Congress reduced the price-support level by 50 cents per hundredweight to \$12.60 and authorized additional 50-cent reductions on April 1 and July 1, 1985, if estimated government purchases for the

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<sup>3</sup>Since 1977, the marketing year for milk has run from October through September. Before then, the start of the marketing year was April.

following 12-month periods exceeded specified levels. The Secretary of Agriculture reduced the support price on April 1 to \$12.10 per hundredweight, and on July 1, to \$11.60.



## CHAPTER 3

### INITIATIVES TO REDUCE INVENTORIES

#### AND GOVERNMENT COSTS HAVE HAD LIMITED SUCCESS

With the substantial increases in dairy product inventories and purchases in recent years, the federal government has instituted several programs aimed at reducing surpluses and expenditures. These programs have included measures to donate food to the needy, to reduce the quantity of milk produced and marketed, to expand domestic and foreign markets and uses of dairy products, and to encourage the exchange or barter of surplus commodities for products of foreign countries.

For the most part, the success of such efforts has been limited. The reasons for the limited success are diverse. The temporary nature of some programs, the displacement of normal commercial or export sales, lack of funding, and policy restrictions can be cited as contributing factors. Even though dairy product inventories dropped in 1984, they remain at high levels. This pattern probably will continue despite these more recent initiatives, and until other means are found to better balance supply and demand.

#### TEMPORARY EMERGENCY FOOD ASSISTANCE PROGRAM

One congressional response to concern about the growing inventory has been the Temporary Emergency Food Assistance Program. Initially, the Agriculture and Food Act of 1981 (Public Law 97-98, Dec. 22, 1981) directed USDA to use all available authorities to reduce CCC's dairy product inventories. In December 1981 USDA responded by making cheese available to states for distribution to the needy. The reported success of its initial effort prompted USDA to make additional quantities of cheese available and to add other dairy products to the distribution. This effort evolved into the Special Distribution Program under which butter, cheese, nonfat dry milk, and other surplus products were provided to states for distribution to the needy.

The Congress subsequently formalized the Special Distribution Program when it authorized TEFAP in the Temporary Emergency Food Assistance Act of 1983 (Title II of Public Law 98-8, Mar. 24, 1983). The act directed USDA to make all CCC commodities, in excess of quantities needed for other fiscal year 1983 programs and activities, available for distribution to the needy. It also appropriated \$50 million for state and local costs of storing and distributing products in fiscal year 1983. In September 1983 under Public Law 98-92, the Congress extended TEFAP through fiscal year 1985 and authorized an additional \$50 million for each of fiscal years 1984 and 1985 state and

local program costs. The enabling legislation also required the Secretary of Agriculture to take the necessary precautions to assure that donated commodities did not displace commercial sales. Public Law 99-88, enacted August 15, 1985, extended TEFAP through March 31, 1986.

From December 1981 through November 1984, FNS provided the states with about 1.8 billion pounds of surplus products valued at about \$2.3 billion under TEFAP and its predecessor program. Table 3.1 shows the quantities of commodities made available to the states.

Table 3.1: Surplus Products Made Available to States, December 1981 Through November 1984

<u>Commodity</u>	<u>Date commodity first became available</u>	<u>Surplus products made available to states through November 1984</u>	
		<u>Quantity (pounds)</u>	<u>Value<sup>a</sup></u>
		----- (millions) -----	
Processed cheese	Dec. 1981	926	\$1,343
Butter	Feb. 1982	335	510
Cheddar cheese	Mar. 1983	183	277
Nonfat dry milk	May 1983	114	123
Other:			
Cornmeal	Apr. 1983	59	9
Rice	Apr. 1983	29	6
Honey	June 1983	82	58
Flour	July 1983	87	11
<b>Total</b>		<u>1,815</u>	<u>\$2,337</u>

<sup>a</sup>Based on CCC costs.

At the request of several members of the Congress, we reviewed the program and issued a report in March 1984.<sup>1</sup> After visiting eight states, interviewing program administrators, and reviewing documentation, we concluded that the program did not provide adequate assurance that only the needy received food. We found that the absence of national guidelines on important matters, such as eligibility criteria, quantities of products to be provided program participants, and program controls, contributed to widely varying program operations among the states and, in some states, among localities. As a result, differences existed in program eligibility requirements and the amounts of products given recipients, and program abuses occurred.

<sup>1</sup>Improved Administration of Special Surplus Dairy Product Distribution Program Needed (GAO/RCED-84-58, Mar. 14, 1984).

Moreover, we found that the food distributed contributed to significant displacement of commercial sales. We estimated, using a set of assumed conditions, that almost a third of the cheese given away in the eight states displaced commercial sales. Consequently, this displacement diminished program effectiveness because USDA is obligated to purchase market surpluses, thus offsetting inventory reductions to the extent the distributions displaced commercial sales.

We said that the program could be made more effective in terms of reducing the amount of commercial sales displacement and providing food to the needy if FNS provided better guidance on the population the program is to be targeted to and ensured that the states and local distributing agencies have adequate controls to ensure that only the needy participate. However, we also noted that it would be extremely difficult, if not impossible, to carry out a distribution program of any consequence without having some displacement. We said, therefore, that USDA would have to decide the appropriate balance between a viable program and an acceptable level of risk of commercial sales displacement.

We recommended that FNS establish some parameters on the eligibility criteria to create more equitable state and local programs and help minimize the extent of commercial displacement. We also recommended that FNS require states to develop reasonable program controls that should, as a minimum, require program participants to provide identification and evidence of eligibility. FNS issued interim regulations on December 16, 1983, but did not prescribe specific parameters on eligibility criteria or on what constitutes reasonable program controls. The Director of FNS' Food Distribution Division said that the final regulations would provide more specific guidance on these matters. In August 1984 FNS stated that the states responded so positively to the December 1983 interim rules that no further guidance on eligibility criteria was needed. Regarding program controls, FNS said that proposed regulations were issued in July 1984 to ensure accountability and compliance.

#### RECENT PROGRAMS TO TRY TO BALANCE SUPPLY AND DEMAND

After more than 30 years of handling dairy overproduction through CCC's surplus removal program, the government added two new programs in 1983 to try to help balance dairy supply and demand--the MDP to compensate farmers who reduced milk marketings and a Dairy Promotion Program to promote increased consumption of dairy products. Both programs were authorized by the Dairy and Tobacco Adjustment Act of 1983 and involved assessments on milk marketings to pay program costs. The act also encourages use of exchange or barter of dairy commodities owned by CCC for materials, goods, and equipment produced in foreign countries.

## Effects of the Milk Diversion Program

Under the MDP's terms, dairy farmers voluntarily contracted with CCC to reduce their milk marketings during the 15-month period that ended March 31, 1985, to a level from 5 to 30 percent below their milk marketings during a legislatively established base period (1982 or, at the dairy farmer's option, an average of 1981-82 marketings). In return, dairy farmers received \$10 for each hundredweight of milk marketing reduction. The payments were funded primarily by monies collected from a 50-cent-per-hundredweight assessment on all milk marketed from December 1, 1983, through March 31, 1985, by both MDP participants and nonparticipants in the 48 contiguous states. If necessary, CCC funds were also available for the payments. USDA reported that as of May 31, 1985, MDP payments totaled about \$955 million and that collections from the 50-cent-per-hundredweight assessment totaled about \$875 million.

All dairy farmers seeking a contract were to submit a plan describing how they intended to achieve the reduction and include an estimate of the amount of the reduction intended to be achieved through increased slaughter of dairy cattle, and the approximate number of dairy cattle that would be sold for slaughter during each month of the contract. The methods the farmers used to achieve their reductions, however, could be altered during the program period.

About 38,000 dairy farmers enrolled in the program. They represented about 12 percent of all operations with milk cows and about 20 percent of all commercial milk producers (those with five or more cows). The total contracted milk marketing reduction was 23 percent of the participants' base-level milk marketings. Collectively, this was equivalent to a contracted reduction in milk marketings of about 9.4 billion pounds--7.5 billion pounds in 1984 and 1.9 billion pounds in the first 3 months of 1985.

Our earlier analysis of the MDP<sup>2</sup> suggests that only 3.74 to 4.11 billion pounds, or about half of the 1984 7.5-billion-pound reduction, could be attributed to the program. In addition, USDA estimated that milk produced and not marketed, but rather used on the farm, increased by 705 million pounds in 1984. According to USDA officials in charge of administering and evaluating the program, it is reasonable to attribute this increased on-farm use to program participants. The remainder of the reduction in production was attributable to factors not related to the program, such as long-run milk production trends and changes in the prices farmers received for their milk. For example, one indication of the possible effect of long-run milk production trends and changing prices was the

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<sup>2</sup>Effects and Administration of the 1984 Milk Diversion Program  
(GAO/RCED-85-126, July 29, 1985).

fact that participants had already decreased their 1983 marketings by an estimated 2.2 billion pounds from the 1982 level. In addition, a USDA analysis of the program, reported in February 1985, showed that about 45 percent of nonparticipating dairy farmers included in the analysis also reduced their marketings in the first 9 months of 1984 from a comparable 1983 level.

By reducing 1984 milk production and marketings, the MDP may have reduced CCC's price-support purchases of surplus dairy products by \$614 million to \$664 million. In addition, the associated costs, such as those for processing, transporting, and storing the purchased dairy products, would have been reduced.

Although the MDP was one factor contributing to an overall reduction in milk production during 1984, the following information indicated that production would rebound to preprogram levels after the program expired.

- MDP participants indicated in their preenrollment plans that they intended to achieve some portion of their contracted marketing reduction through management practices, such as reducing the quantity and frequency of herd feeding or reducing the frequency of milking. Such participants could quickly increase production by reverting to previous management practices when the program expired.
- According to our questionnaire survey of 1,723 MDP participants,<sup>3</sup> about 52 percent planned to return to their preprogram marketing levels. Another 20 percent planned to increase marketings by an average of 22 percent, representing a return to nearly preprogram levels.
- USDA estimated that on-farm milk use (such as feeding to calves or hogs) increased during 1984 to 3.07 billion pounds from 2.37 billion pounds in 1983. Participants who achieved their contracted marketing levels by increased on-farm use would have been in a position to immediately increase their milk marketings after the program expired.
- USDA estimated that the number of dairy replacement heifers increased from 4.53 million in January 1984 to 4.95 million in July 1984 and that as of January 1, 1985, the ratio of replacement heifers to milk cows was 44 per 100 cows--one of the highest levels in recent years.

Moreover, the program appeared to have been difficult to administer because opportunities existed for unauthorized

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<sup>3</sup>The structure of our sample and the response rate enabled us to generalize the results to a population of about 28,000 MDP participants (of the total of about 38,000) at a 95-percent confidence level.

marketing of milk and/or transferring of dairy cows that, even with the most stringent requirements, could be accomplished with little risk of detection. As a result, ASCS was unable to ensure that cows sold by MDP participants were actually slaughtered and thus reduced dairy production capacity. We did not attempt to identify the extent to which such problems occurred.

#### Dairy farmers support Dairy Promotion Program

To strengthen the dairy industry's position in the marketplace and to maintain and expand domestic and foreign markets and uses for U.S. dairy products, the Congress authorized a nationwide Dairy Promotion Program in the Dairy and Tobacco Adjustment Act of 1983. In our July 1980 report (see p. 6), we had recommended that the Congress establish a program of this type. Financing for the program, which includes promotion, research, and nutrition education activities, comes from a mandatory assessment of 15 cents per hundredweight on the proceeds of the sale of milk marketed commercially by producers in the 48 contiguous states. This assessment was expected to generate about \$190 million in the 1983-84 marketing year. A 36-member board of milk producers--called the National Dairy Promotion and Research Board--administers program activities.

Data obtained on the status of program activities showed that as of April 1, 1985, the board, which began operations in May 1984, had made many organizational decisions, selected a contractor to carry out advertising activities, and funded 60 research projects. The national board received about \$80 million of the amount collected in its fiscal year that ended April 30, 1985. The remaining collections went to 83 qualified state or regional promotion, research, or nutrition education programs.

Of the national board's fiscal year 1985 budget, 84 percent had gone toward advertising and sales promotion of fluid milk, cheese, butter, and calcium. In addition, the board had provided funds for universities and medical centers to conduct research, develop products, and educate health professionals and consumers. According to USDA data, the board had committed more than \$8 million in 60 projects as of April 1985. The board had also budgeted about \$1.6 million for an evaluation of the entire national program. A report on the evaluation, required by the 1983 act, was submitted to the Congress on June 28, 1985.

The act also requires that within the 60-day period preceding September 30, 1985, dairy farmers must decide through a referendum vote whether to continue the program. A primary concern of the industry promotion officials we contacted was that not enough time will have elapsed before the referendum for the program to demonstrate success, since advertising did not start until September 1984. Nevertheless, our survey of milk

producers<sup>4</sup> showed that more than 55 percent strongly or generally supported the promotion program. An AMS Dairy Division official we interviewed said that the results of the referendum, which closed on August 20, 1985, are expected to be publicly announced by USDA on September 30, 1985.

POTENTIAL TO EXPAND SURPLUS DAIRY  
PRODUCT OUTLETS IS LIMITED

The outlets available for disposing of surplus dairy products have not been able to absorb the large quantity of dairy products in CCC's inventory. These outlets include domestic feeding programs and foreign sales, donations, and barter agreements. The potential for expanding these outlets is limited by such things as the concern that products disposed of through such outlets may displace normal commercial or export sales and the industry's repackaging capacity.

Domestic outlets

During marketing years 1981 through 1983, domestic donations accounted for about 55 percent of butter disposals, 92 percent of cheese disposals, and 10 percent of nonfat dry milk disposals. Recipients included needy individuals, schools and institutions, the military, veterans' hospitals, and the Bureau of Prisons. The bulk of these donations went to individuals, schools, and institutions.

FNS officials involved in food distribution and policy development did not anticipate any expansion of domestic donations in the near future. They told us that the amounts disposed of through traditional domestic donation outlets had been relatively constant and that two limitations on expansion are the industry's capability to reprocess the products for distribution (cut and package cheese and butter and instantize dry milk) and the concern that increased donations, especially donations to individuals, will displace commercial sales.

The military, which purchases its normal needs for dairy products on the open market, can order dairy products from USDA--but only in quantities that exceed normal needs. This limits significantly the amount of surplus dairy products USDA can donate to the military. Also, any expansion in the military's use of surplus dairy products is limited by military nutritionists' desire to reduce troop fat intake. Further, feeding station use has declined because more service personnel live off base.

Sales of surplus dairy products to the U.S. Army during 1981 through 1983 represented about 1 percent or less each of

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<sup>4</sup>Our sample consisted of 1,723 MDP participants (see p. 19) and 1,666 nonparticipants.

butter, cheese, and nonfat dry milk disposals. The products are sold to the military for resale through commissaries around the world. A USDA official said that such sales had been growing and estimated that they could increase 10 to 20 percent over the existing level. Even at this increased level, amounts would be small. Some new products and packaging have been introduced in an effort to increase sales. A limitation on these sales to the military is the requirement that the products can be sold only where there is no U.S. commercial supplier since the government does not want to displace U.S. product sales. Thus certain parts of the world are off-limits for such sales.

An ASCS Commodity Operations official told us that the Bureau of Prisons had received all the surplus dairy products it could use. Another ASCS official told us that a minimal potential existed for expanding donations to the Veterans Administration. This was confirmed by the Veterans Administration's Director of Procurement and Supply who told us that the agency might be able to increase annual use of surplus butter from about 200,000 pounds to 250,000 pounds. He also said that the agency currently receives small amounts of surplus cheese but could use about 250,000 pounds annually. The Veterans Administration is limited in its use of surplus dairy products in the same manner as the military; that is, it can obtain surplus dairy products from USDA only in amounts that exceed normal needs.

USDA had made some restricted commercial domestic sales of surplus dairy products. In such sales, the product is restricted in use, such as for animal feed only. During 1981 through 1983, restricted sales made up about 9 percent of nonfat dry milk disposals, and less than 1 percent each for cheese and butter. An ASCS Dairy Division official told us that any expansion of restricted sales would draw criticism from animal food suppliers since the government sales would likely be displacing normal feed supplies.

#### Foreign outlets

Foreign outlets for surplus dairy products include foreign donations, export sales, and barter agreements. Foreign donations accounted for about 57 percent of the surplus nonfat dry milk disposals during 1981 through 1983, 8 percent of the butter, and 3 percent of the cheese. According to Foreign Agricultural Service officials and a U.S. trade representative, the outlook for expansion of donations was dim because foreign donations can disrupt other nation's markets, a result the United States wants to avoid.

Noncommercial export sales of government-owned surplus dairy products are those made to foreign governments and other agencies for school lunch and welfare use. These sales



accounted for 36 percent, 22 percent, and 3 percent, respectively, of the butter, nonfat dry milk, and cheese disposals during 1981 through 1983. An FAS foreign sales negotiator and a U.S. trade representative told us that opportunities were limited for increased export sales. They said that such sales would tend to drive down world prices and raise concern that these sales, like donations, would displace other nations' markets. The General Agreement on Tariffs and Trade discourages subsidizing exports if the exports displace another nation's market. Complicating the situation is the fact that milk is a surplus product in many nations with significant dairy industries, and worldwide milk production is expected to grow faster than available outlets. On May 15, 1985, the administration announced a plan to subsidize farm exports. This announcement indicated a change in administration policy toward subsidized foreign sales.

USDA also conducts a barter program. The barter activities are carried out under contracts between CCC and private U.S. firms. From 1981 through the time of our review, only three barter agreements had been made, all under presidential directive. These agreements involved exchanging dairy products (nonfat dry milk and dry milkfat) for bauxite from Jamaica.

FAS' Chief Negotiator for barter told us that the President established an interagency barter work group in January 1984 to review barter proposals. As of mid-August 1984, one firm proposal for barter had been received from Mexico. Incomplete barter proposals had also been received from South Africa and the Dominican Republic. According to the Chief Negotiator, follow-up inquiries with each country had not resulted in additional data.

FAS officials also told us that the administration policy is to rely on barter only as a last resort. The reason for this is that the United States is not a significant exporter of dairy products, and any barter agreement would involve displacing sales by other suppliers. In an earlier report on the use of barter to obtain national defense stockpile materials,<sup>5</sup> we concluded that barter of dairy products would be used sparingly because of restrictive legislative requirements and competing national interests.

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<sup>5</sup>Conditions That Limit Using Barter and Exchange to Acquire National Defense Stockpile Materials (GAO/RCED-84-24, Oct. 19, 1983).

## CHAPTER 4

### TECHNOLOGY GAINS IN THE DAIRY INDUSTRY--

#### POTENTIAL FOR SUPPLY INCREASES

Dairy farmers have made considerable strides in improving the efficiency of their operations since federal dairy programs began more than 50 years ago. The potential for significant increases in on-farm productivity is also great; the dairy industry is poised on a series of technological breakthroughs that will expand milk production and reduce production costs. According to OTA testimony before the Joint Economic Committee in October 1984, the combined effects from technological advances have the potential to increase the national average milk production per cow 14 percent by 1990 and 43 percent by the year 2000 if the present economic environment and program policies remain unchanged.

USDA reported in 1984 that the supply and demand outlook for the next several years suggested a continued excess supply of dairy products. According to USDA, there did not appear to be any major breakthroughs on the demand side that would support more than a 1-percent-a-year increase in milk production. Unless federal policies are changed, dairy surpluses and federal costs will likely continue to be a problem.

#### TECHNOLOGY WILL INCREASE MILK PRODUCTION

Scientists at the universities and research locations in major dairy states we visited said that much potential exists for increasing on-farm productivity in the dairy industry. According to USDA's Economic Research Service, improvements in marketing dairy products are possible as well, but not to the extent that the present and potential dairy surplus could be absorbed.

Technology has contributed to increased milk production per cow during the last few decades. In 1934, milk production per cow was about 4,000 pounds; in 1984, it was about 12,500 pounds. Since 1950, annual milk production per cow has more than doubled, thus offsetting a decline in the number of commercial dairy farms and cows. In 1950, U.S. dairy farmers operated 602,000 commercial dairy farms milking 21.9 million cows. By 1984, the number of commercial dairy farms had declined to about 200,000, and the size of the nation's milk cow herd was reduced to 10.8 million.

The vast potential for future increases was demonstrated when one cow produced 55,660 pounds of milk in 1 year compared with the national herd average of about 12,500 pounds per cow.

This was obviously an unusual case, but it demonstrates the potential for future production gains per cow. Many dairy farmers already have herds whose productivity exceeds the national average. In Minnesota, for example, at least 73 dairy farmers belonging to the Minnesota Dairy Herd Improvement Association<sup>1</sup> had herds averaging 20,000 pounds of milk production per cow during 1984.

According to the dairy industry experts we met with, dairy farmers are adopting several technologies that will significantly improve on-farm productivity. These technologies may generally be divided into two categories--biotechnology and electronic information systems.

### BIOTECHNOLOGY

Biotechnology, defined as the use of engineering and other technologies to study and solve problems concerning living organisms, has been used for years in animal science. Much of the technology used by farmers to improve the productive capacity of their dairy herds in the past involved the use of selective breeding and artificial insemination. Today, researchers are developing new technologies, two of which--embryo transfer and bovine growth hormone--appear to be particularly promising in upgrading the productivity of dairy herds.

#### Selective breeding and artificial insemination

Previous generations of dairy farmers upgraded their herds' ability to produce more milk per cow by buying superior dairy cattle from their neighbors or other farmers or even importing them from Europe. They also identified which neighbors or other farmers owned dairy bulls that they considered superior and frequently used these bulls to breed their own cows. The farmers hoped that these selective breeding programs would increase the amount of milk and butterfat their cows would produce.

In 1938, artificial insemination was introduced into the United States from Denmark. Artificial insemination technology permits dairy farmers to breed their cows to the best bulls regardless of location whereas previously they had been limited to locally available bulls. Several cooperatives and corporations have used artificial insemination technology to develop an industry selling bull semen to dairy farmers. These organizations house high-quality bulls at centralized locations where employees collect, freeze, and distribute bull semen. Before being used for artificial insemination purposes, bulls are tested for their ability to produce offspring that demonstrate

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<sup>1</sup>The Minnesota Dairy Herd Improvement Association is a member-owned association that provides testing and management record-keeping services to individual member dairy farmers.

traits, such as above-average milk production and butterfat percentages. Bulls with outstanding milk production traits can, using artificial insemination technology, produce thousands of calves.

According to dairy researchers, the artificial insemination industry has had and will continue to have a significant impact on increasing milk production. According to a USDA researcher in 1984, the artificial insemination industry had increased milk production about 1,500 pounds per cow higher than it would be if artificial insemination had not been available to dairy farmers. The potential for increased milk production would appear to be great since, according to University of Minnesota researchers, only about half the nation's dairy cows are artificially inseminated.

### Embryo transfer

Embryo transfer involves the transfer of an embryo from the reproductive tract of one cow to another. Cows with high milk production traits are artificially inseminated with semen from high-quality bulls. The resulting embryo is removed from the high-producing cow and transferred to a cow of less value that carries the calf to birth. According to one researcher, a cow, through embryo transfer, can produce 5 to 12 calves per year and over 100 calves during her lifetime compared with the usual 1 calf per year and an average 3.5 calves during an average cow's lifetime.

According to some agricultural researchers, the dairy industry's adoption of embryo transfer technology has been limited due to the high cost compared with the cost of artificial insemination. The embryo transfer industry is rather small, considering the total number of cows. In 1981 about 10.9 million cows had calves; about 30,000 calves were produced by embryo transfer. Yet, according to the researchers, substantial expansion is possible in the next few decades. Reduced embryo transfer costs might encourage more dairy farmers to adopt the technology, and more high-producing cows would be added to the nation's dairy herd.

Researchers are developing related technologies that would lower embryo transfer technology costs. These technologies include freezing, splitting, and determining the sex of embryos. Freezing embryos permits preserving valuable embryos over time and distance. An embryo could be removed from a valuable cow and be implanted in another cow months or years later or thousands of miles away. A split embryo would allow two identical animals to be produced. By implanting half the embryo and freezing the other half, dairy farmers could evaluate the milk production traits of the firstborn animal. If the animal proves desirable, the frozen embryo half could later be thawed and implanted, and an identical animal with known milk production traits could be introduced into the herd years later.

In the near future, researchers will likely be able to readily determine the sex of an embryo and thus guarantee female births, which would likely encourage more dairy farmers to adopt embryo transfer technologies. Most dairy bull calves have little economic worth beyond their slaughter prices, and they are either sold to meat processors shortly after birth, or castrated and raised for red meat production.

### Bovine growth hormone

According to Cornell University researchers, the use of bovine growth hormone, a protein naturally produced by dairy cows, could increase milk production by 15 to 40 percent, depending on the cow's stage of lactation. Cornell University researchers believe the hormone's effects on dairy production would be immediate and major, similar to increased crop production caused by the widespread use of commercial fertilizer after World War II. More milk per cow translates into a need for fewer cows.

Researchers have isolated the gene responsible for bovine growth hormone production and transferred the gene to ordinary bacteria. The altered bacteria can be reproduced on a large scale by standard fermentation techniques. This makes the production of the hormone commercially feasible.

Before commercial production of the bovine growth hormone can take place, FDA must approve its use because the hormone involves animal products sold for human consumption. According to an FDA official, FDA has not received an application from any drug company wishing to start commercial production of a bovine growth hormone product, but Cornell University has been granted permission to test this substance on dairy cows. He further noted that it could take 6 months to 10 years from the time FDA received the application until it finally approved a bovine growth hormone product for commercial use. One of the economists reviewing a draft of this report said that the hormone may be commercially available within 3 to 5 years; another said in 2 to 3 years.

### ELECTRONIC SYSTEMS

A key to a successful dairy operation has always been good recordkeeping that would ensure timely breeding, proper feeding, and identifying cows whose economic value as milking cows was decreasing and that should be treated or removed from the milk herd. Electronic systems have been adapted to dairy farming, successfully solving some feed ration problems.

Dairy farmers are also starting to use computerized feeding systems to increase milk production. With computerized feeding systems, each cow is automatically fed a programmed supplemental

ration according to her needs. With some systems, each cow wears a neck tag with an identifying number, and as she approaches the feeder box, a computer reads her specific number, which commands the feeder to dispense a predetermined amount of feed.

According to an Ohio State University research scientist, some dairy farmers using the system report a daily increase of 2 pounds of milk per cow, increased butterfat percentages, a 30-percent reduction in high-protein feed costs, and improved animal health. Experts indicate that since feed costs represent about 50 percent of on-farm milk production costs, the pay-back period on these systems is only about 16 months. According to the Ohio State University researcher, some 2,000 systems were in service nationally as of early 1984. However, only about 200,000 cows, representing less than 2 percent of the nation's total herd of about 11 million cows, were being fed using these systems in early 1984. Therefore, potential exists for increased use of this technology.

#### DEMAND FOR DAIRY PRODUCTS

USDA reported in 1984 that the supply and demand outlook for the next several years suggested a continued excess supply of dairy products with no foreseeable technological changes that might increase dairy product consumption.

According to USDA, per capita consumption of dairy products will likely remain steady, translating into about a 1-percent annual market growth. USDA further stated that fluid milk would continue to lose market share in the total beverage market and that, in the next decade, the growth of fluid milk sales could range from none to a rate slower than the population growth. The demand for cheese was expected to grow, but imitation--nondairy--cheese could capture some market share. The demand for butter probably will remain stable, and the demand for nonfat dry milk will likely continue to decline, according to USDA.

Others believe that potential exists for increasing per capita consumption of dairy products through promotion and research activities. One of the most important developments in this regard is the dairy promotion, research, and nutrition education program authorized by the Dairy and Tobacco Adjustment Act of 1983. (See pp. 20-21.)

## CHAPTER 5

### ANALYSIS OF OPTIONS TO REVISE

#### OR REPLACE PRICE-SUPPORT PROGRAM

In our July 21, 1980, report to the Congress (CED-80-88), we pointed out the need for reassessing the dairy price-support program, which was based on the concept of parity. Parity is a standard used to measure the degree to which farm prices are in line with what Congress has defined as a fair goal. We pointed out that such a program could lead to a serious surplus problem. We presented a number of alternatives to help reduce surpluses and balance the interests of producers, consumers, and taxpayers. Over the past few years, large and costly surpluses of dairy products have occurred. Unless the dairy price-support program is revised or replaced so that dairy policy is sufficiently flexible to adapt to rapidly changing economic and technological conditions, large surpluses could persist.

In the present policy debate, a wide range of policy options has been discussed. Some producer interest groups would like to reinstate a diversion program like the one that ended March 31, 1985. Others call for a target price program under which the government would make payments to dairy farmers equal to the difference between a target price and the market price when the latter price is lower. Other groups, reflecting the interests of consumers and taxpayers, have suggested phasing out the price-support program. Such options have drastically different implications for dairy farmers, consumers, processors, distributors, and taxpayers.

A decision on the direction of dairy policy is forced by circumstances. The dairy price-support level will revert to a minimum of 75 percent of parity as prescribed by the Agricultural Act of 1949 in the event that the Congress does not take other action by October 1985. USDA projects that this would result in a price-support level in October of \$16.22 per hundredweight--40 percent higher than the July 1, 1985, price-support level of \$11.60 per hundredweight. Such an increase could send a signal to the milk industry to further increase the capacity to produce milk--causing greater surpluses, increased government costs, and higher consumer prices. In fact, USDA estimates that if the support price is increased to \$16.22 per hundredweight, CCC net purchase costs will total \$4.2 billion in fiscal year 1986.

Most of the dairy policy options in this chapter were previously discussed in our 1980 report. Our analyses of them have been updated to reflect more recent industry conditions. The following options, reflecting the current policy debate, are analyzed in this report:

1. Continue the current price-support program but change the basis for the support price to
  - dairy parity, which would index milk prices to the prices of inputs used to produce milk;
  - an average-cost-of-production concept, which would index milk prices to the national average cost of producing milk as computed annually by USDA;
  - a supply-demand adjustment factor, which would raise milk prices when government purchases or stocks of dairy products are low and vice versa; or
  - a percentage of the moving average of market milk prices over the preceding 3 years.
2. Establish a voluntary production control (diversion) program with a producer assessment to cover program costs.
3. Establish a mandatory marketing control program with marketing quotas.
4. Establish a target price program like that used for such major crops as wheat, corn, rice, and cotton.
5. Move toward or to deregulation by
  - eliminating the milk price-support program and establishing a national milk-marketing order system with prices of milk based on the use of milk or
  - eliminating both the price-support program and milk-marketing orders, and reverting to a free market policy.

As noted previously (see pp. 3-4), the objectives of the milk price-support program are to assure consumers an adequate milk supply, to reflect changes in production costs, and to assure a level of farm income adequate to maintain production capacity in anticipation of future needs. Federal milk-marketing order legislation implies added dairy policy objectives of providing stable and dependable markets for farmers and an efficient pricing mechanism that operates in the public interest. (See p. 3.)

Since enactment of the price-support program, dairy farmers have tended to produce more milk than can be marketed commercially at established prices--a supply-demand balance has seldom been achieved. The result has been high government costs, especially since 1980. The government, therefore, faces the difficult task of balancing the interests of consumers,



the dairy industry, distributors, and taxpayers. To assist in accomplishing this task, we converted the broad objectives of dairy policy into a number of specific goals. We then determined the possible consequences of each of the above options in light of these goals. We viewed each of these goals equally; that is, we did not assign greater weight to one over another. These specific goals are:

- Dairy policy should provide automatic adjustment of support and market price levels so as not to generate large surpluses. With automatic price adjustments, the continual task of enacting legislation to adjust milk prices could be avoided.
- Dairy policy should accommodate changes in production costs per hundredweight. In the past, milk support prices have not accurately reflected changes in production costs because higher milk yields resulting from new technology have not been considered in parity computation procedures.
- Dairy policy should avoid regional production patterns different from those that would exist under a pricing mechanism where milk is produced and distributed at least cost to the consumer. Taking production and distribution costs into consideration, the most efficient farmers would tend to have the most incentive to increase production if this objective was met.
- Dairy policy should avoid large government costs. The cost of federal programs has become an important factor in making government policy decisions.
- Dairy program costs should be visible so that program benefits can be more readily compared with taxpayer, producer, and consumer costs. Policy decisions can be facilitated if program costs and benefits are apparent, as opposed to being hidden in product prices.
- Dairy policy should result in the market mechanism being the main price- and income-determining factor most of the time, while also cushioning the amount by which the price could drop. This does not imply that all farmers will cover their production costs all the time. It does aim to ensure industry conditions sufficiently stable to maintain production capacity for future needs.

The extent to which each of the options meets the six specific policy goals is discussed below and summarized in a chart on page 50.

CONTINUE THE CURRENT PRICE-SUPPORT PROGRAM  
BUT CHANGE THE BASIS FOR THE SUPPORT PRICE

Under this dairy policy option, the price of milk would continue to be supported through the purchase of surplus dairy products. The federal milk-marketing order program would also be continued. There would not be an assessment and diversion program. The central issue is the means of establishing the milk price-support level.

As we indicated in our July 1980 report, how parity is measured should be changed if a price-support program based on parity is to continue.<sup>1</sup> We cited three major reasons for such a change:

- Parity's past record of fostering surplus production.
- Parity's failure to reflect changes in dairy input costs.
- Parity's failure to reflect increases in milk output per cow.

In that report, we evaluated three alternative methods of establishing the milk price-support level. These were

- a dairy-specific parity formula (dairy parity),
- a cost-of-production formula, and
- a supply-demand adjustment formula.

To these, we have added a fourth formula--a percentage of the 3-year moving average market price.

Dairy parity

Under the current parity formula, changes in support prices are based on changes in the relationship between (1) the index of prices paid by farmers for all inputs used in or related to the production of all farm products and (2) the index of prices received by farmers for milk. The dairy parity index would simply relate the dairy support price to an index of prices paid by dairy farmers for the specific inputs required to produce milk.

In computing the index of prices paid by dairy farmers, prices of different inputs would receive different weights according to the importance of those inputs in producing milk. These cost component weights in the dairy parity index could be

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<sup>1</sup>Unless the Agricultural Act of 1949 is amended, the dairy price-support level would be between 75 and 90 percent of parity.

derived from USDA's annual milk cost-of-production surveys. An important issue in deriving these weights involves whether to include only purchased inputs. Historically, the parity index has imputed family living costs in the index of prices paid with about a 30-percent weight. Including family living costs would have the effect of making the dairy parity index more stable--since these expenses generally move on a relatively stable upward trend with increases in the Consumer Price Index. A comparison of the 1984 parity weights with dairy parity when family living costs are included and when they are excluded follows.

Table 5.1: Comparison of 1984 Parity Index With Dairy Parity Index With and Without Family Living Costs

Current parity index		Dairy parity index		
		Cost component	Weight	
Weight	Cost component		With family living cost	Without family living cost
Family living	30.4	Family living	30.4	
Feed	11.8	Feed	34.0	48.7
Feeder livestock	11.7	Fuels, lubricants, and electricity	2.6	3.7
Seed	1.8	Machinery and building repairs	2.6	3.8
Fertilizer	4.2	Marketing	0.8	1.1
Agricultural chemicals	1.7	DHIA <sup>a</sup> fees	0.3	0.5
Fuels and energy	3.5	Dairy supplies	1.3	1.9
Farm and motor supplies	2.2	Livestock hauling	0.1	0.2
Autos and trucks	2.5	Milk hauling	2.4	3.4
Tractors and self-propelled machines	4.5	Artificial insemination	0.8	1.2
Other machinery	2.7	Veterinary and medicine	1.5	2.1
Building and fencing	3.6	Interest	11.0	15.8
Farm services and cash rent	7.4	Taxes and insurance	2.5	3.6
Interest	4.0	Hired labor	5.9	8.4
Taxes	2.8	General fram overhead	3.9	5.7
Wage rates	5.2			
Total	100.0		100.0 <sup>b</sup>	100.0 <sup>b</sup>

<sup>a</sup>Dairy Herd Improvement Association.

<sup>b</sup>Does not add due to rounding.

The dairy parity option is similar to a price-setting proposal made by the National Milk Producers Federation.<sup>2</sup> The Federation's Dairy Pricing Index would give a weight of 80 percent to dairy farmers' cash expenses. Also included would be the price farmers received for beef and the Consumer Price Index, each receiving a weight of 10 percent.

#### Dairy parity consequences

The use of a dairy parity index to adjust the price-support level would give greater weight to changes in dairy input costs than the current parity formula does. For example, a feed cost rise would cause a greater increase in the milk price-support level under the dairy parity index than under the current parity formula because feed would have a greater weight. However, dairy parity does not solve important problems related to the first two specific dairy policy goals listed on page 31:

--Dairy parity does not assure that the initial support-price level will prevent a large surplus. If the initial support price is set too high and a large surplus accumulates, the dairy parity concept would not automatically adjust the support level downward. The Federation proposal attempts to deal with this issue by setting the formula base during the years 1976-78, a period of lower surplus production.

--Dairy parity itself does not deal with changes in production costs per hundredweight. For example, higher output per cow may reduce production costs per hundredweight of milk. Since dairy parity does not reflect higher milk yields, over time dairy parity could result in too high a milk price--just as is currently the case in parity pricing. Therefore, while the price-support level might initially be set at 100 percent of dairy parity, over time the support level would need to be gradually reduced from full dairy parity, or surpluses would accumulate.

The extent to which the dairy parity option meets the other specific dairy policy goals is as follows:

--Dairy parity would not seriously distort regional production patterns. The most efficient farmers would tend to have the most incentive to increase production.

--Dairy parity would not necessarily avoid a large surplus and thus would not prevent large government costs. As

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<sup>2</sup>The National Milk Producers Federation represents its dairy cooperative members in, among other things, developing dairy policy.

under regular parity, dairy parity prices may be too high either because the initial support price is set too high or because of technological change.

- Program costs would be partially revealed in CCC expenditures on product purchases. Program costs would also be partially hidden in product prices paid by consumers when the support price is above the price the market would set.
- Dairy parity would keep industry conditions sufficiently stable to maintain production capacity for future needs. If the support price remained relatively high, it, not the market, could become the main price- and income-determining factor. This could result in considerable income enhancement, thus not fully satisfying the goal of only cushioning price declines.

#### Average cost-of-production pricing

In 1973 the Congress mandated that USDA study, and annually update, the costs of producing milk. Cost-of-production pricing would use USDA's estimates of the cost of producing milk to set the milk price-support level.

An important issue involved in cost-of-production pricing, like dairy parity, involves the treatment of inputs owned by the farmer, such as facilities, land, and home-raised feed. Home-raised feeds are generally less costly than purchased feeds. Valuing these home-raised feeds is difficult. In commenting on a draft of this report, a USDA official said that an additional problem is that USDA's cost-of-production estimates are subject to revision--sometimes substantial--based on more current data.

How to value other inputs owned by dairy farmers is also a difficult issue. If too high a return is provided to capital, labor, land, and management services provided by the owner, excess production would result.

USDA estimated the national average milk production cost for 1983 at \$13.40 per hundredweight. This includes allocated returns to owned inputs using standard USDA procedures.

#### Consequences of cost-of-production pricing

Cost-of-production pricing would remedy the dairy parity option's problem of dealing with increased output per cow because cost of production is computed on a per-hundredweight basis.

One possible result of cost-of-production pricing stems from the milk industry's structure and the tendency of larger

volume dairy farmers to experience lower per-unit costs. USDA data indicate that about 60 percent of the milk is produced by the largest 20 percent of the dairy farmers. Thus, in computing the average cost, 60 percent weight would be given to the costs of 20 percent of the dairy farmers. Since larger volume dairy farmers tend to have lower per-unit costs, the remaining 80 percent of the dairy farmers will tend to view the average cost, so computed, as being below their average costs. In this situation, the milk support price might be raised on a discretionary basis above this average cost to reflect the costs of the smaller farmers, but this would tend to generate surplus production by those farmers with lower per-unit costs.

The extent to which the cost-of-production option meets the six specific dairy policy goals is as follows:

- Cost-of-production pricing would not automatically adjust the support price to avoid generating large surpluses. For example, if the demand for milk declined, the support price of milk would not fall under this option. Likewise, if too high a return was provided to inputs owned by farmers, cost-of-production pricing could result in too high a price, thus causing excess supply.
- Cost-of-production pricing would deal annually with changes in production costs per hundredweight. For example, the price would be adjusted downward if costs per hundredweight fell as output per cow rose due to technological change.
- Cost-of-production pricing would not seriously distort regional production patterns because the most efficient farmers would tend to have the most incentive to increase production.
- Like dairy parity, cost-of-production pricing would not necessarily avoid large surpluses and thus would not necessarily prevent large government costs. Since high government costs can result from reduced demand that is not reflected in cost-of-production pricing, high costs are possible.
- Dairy program costs would be partially revealed in CCC purchases, but also partially hidden in product prices paid by consumers when the support price is above the price the market would set.
- Cost-of-production pricing would cushion the amount by which the price could drop. A price level determined principally by the average production costs of those dairy farmers who produce most of the milk and tend to have lower per-unit costs could result in a support price below the average costs of most dairy farmers. However, because this option would cushion the amount milk prices

could drop and would probably result in the market's being the main price- and income-determining factor most of the time, the goal would be met.

Supply-demand adjuster pricing

Supply-demand adjuster pricing is a systematic procedure for changing the milk price-support level to avoid large surpluses. Although the measure of surplus conditions used to adjust the support price could be either CCC purchases or CCC stocks, as discussed later, using CCC stocks may not be desirable. In using a supply-demand adjuster formula, a desired level of purchases would need to be determined. For example, desired CCC purchases might be the level normally used in school feeding programs.

Robert E. Jacobson, an Ohio State University dairy economist, suggested the following supply-demand adjuster schedule in terms of milk equivalent purchased by CCC.<sup>3</sup>

Table 5.2: Supply-Demand Adjuster Schedule  
Suggested by a Dairy Economist

<u>Annual CCC purchases</u> (billion pounds)	<u>Percent by which support price would be adjusted</u>
Less than 1	+4
1.0-1.9	+2
2.0-3.9	0
4.0-4.9	-3
5.0-5.9	-5
6 or more	-8

Jacobson has proposed setting the desired level of CCC purchases at 2.0-3.9 billion pounds. A similar National Milk Producers Federation proposal would set desired purchases at 3.0-4.9 billion pounds. Once the desired level is determined, a lower level would trigger an increase in the support price, and a higher level would trigger a reduction.

Either actual or projected purchases could be used in the supply-demand adjuster. While projected purchases would provide an opportunity to adjust prices in anticipation of changed conditions, projections could also be subject to dispute and to uncertainty due to prediction errors.

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<sup>3</sup>"Supply-Demand Adjuster Pricing," Dairy Policy Options for 1985, Texas Agricultural Extension Service, Texas A&M University, College Station, 1985.

Supply-demand adjuster pricing is not a new concept. A form of the concept was enacted in the Dairy and Tobacco Adjustment Act of 1983, which lowered the minimum milk price-support level from \$13.10 per hundredweight to \$12.60 and allowed for an additional 50-cent-per-hundredweight reduction on April 1, 1985, if CCC purchases in the succeeding year were projected to be above 6 billion pounds and either (1) a further 50-cent reduction on July 1, 1985, if purchases in the next year were projected to exceed 5 billion pounds or (2) an increase of not less than 50 cents on July 1, 1985, if purchases in the next year were projected at 5 billion pounds or less.

In commenting on a draft of this report, a USDA official said that using stock levels as the basis for the supply-demand adjuster would not be desirable because large purchases could be offset by large donations resulting in low stock levels. In such a situation, an increase in the support price could be triggered, and purchases could increase. We generally agree with this assessment. Conversely, however, using purchases as the sole basis for the supply-demand adjuster could result in increasing the support price, and consequently purchases, when stock levels are extremely large. Therefore, it may be necessary to provide the Secretary of Agriculture with the authority to limit or forgo support-price increases called for by a supply-demand adjuster based on purchases when stock levels are high.

#### Consequences of supply-demand adjuster pricing

The extent to which this option meets the six specific dairy policy goals is as follows:

- Supply-demand adjuster pricing considers both milk supply and demand forces, thus avoiding large surpluses-- provided that the desired purchase level is not set too high. In addition, its automatic nature means that the initially established price-support level is less important. If the support price is initially set too high, government purchases could be expected to exceed the desired level, and the support price would automatically be adjusted downward; and if set too low, upward.
- The supply-demand adjuster would accommodate changes in production costs per hundredweight. For example, if a major technological change lowered production costs and induced an increase in supply, government purchases might end up exceeding the desired level. The supply-demand adjuster would automatically adjust the price downward.



- Distortions in regional production patterns would be minimal under supply-demand adjuster pricing. The most efficient farmers would tend to have the most incentive to increase production.
- If the desired purchase level is sufficiently low, a supply-demand adjuster would be more effective at avoiding large government costs than the previously discussed dairy parity or cost-of-production pricing. Higher government costs associated with higher purchases would automatically lead to a fall in the support level, thus reducing (1) the incentive to produce milk and (2) government costs.
- Program costs would be partially revealed in CCC purchases, but also partially hidden in higher product prices paid by consumers when the support price is above the price the market would set.
- Provided that the desired purchase level was not too high, the market mechanism would be the main price- and income-determining factor. In this situation, the price would automatically adjust annually toward achieving the desired level of purchases. Also, the amount by which the price could drop would be cushioned.

#### Moving-average pricing

One of the bills introduced in the 99th Congress (S. 501) would require that future price-support levels for milk and other major farm commodities be set at a percentage of the national average market price over the preceding 3 years. For milk, the percentage would initially be set at 90 percent for fiscal year 1988 and be gradually reduced to 75 percent for 1991 and subsequent years. As a general rule, under existing dairy legislation, the market price has tended to be set by the support price. Thus, setting the milk support price at a percentage less than 100 percent of the moving-average market price would be a major departure from past dairy policy.

If this proposal were adopted, there could be a marked decline in the support price. For example, if the support level for 1985 had been set at 75 percent of the preceding 3 years' average market price for manufacturing grade milk, the support price would have been \$9.46 per hundredweight.<sup>4</sup> The market

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<sup>4</sup>Our computation of \$9.46 is based on a simple average of reported prices for manufacturing grade milk in 1982, 1983, and 1984 as reported in USDA's Dairy Outlook and Situation Yearbook, July 1985.

price then would be determined by the competitive market environment and generally could be expected to be above the support price. Yet the support price would still prevent milk prices from suddenly falling to very low levels. If the price-support level were set at a higher percentage of the moving-average price, such as 90 percent, the support program would play a more important role in price determination.

#### Consequences of moving-average pricing

Moving-average pricing would set the support price at less than 100 percent of the average market price over some preceding time period. Thus, it would place increased reliance on the market mechanism to adjust prices in accordance with market supply and demand conditions. The initial and subsequent support levels would be automatically determined. The extent to which this option meets the six specific dairy policy goals is as follows:

- Moving-average pricing would tend to reduce large surpluses over time. An automatic price adjustment mechanism would exist to lower support prices when supplies increased or demand decreased, and vice versa. The amount by which support prices could change would depend on the percent of the moving-average price that was used.
- A reduction in production costs caused, for example, by a major technologically induced increase in milk yields, would result in an initial buildup in CCC purchases, followed by a gradual decline in the moving-average price. Thus, moving-average pricing would reduce the price-support level in response to lower costs.
- Moving-average pricing would not distort regional production patterns because market prices would determine the regional allocation of milk production resources. Thus, the most efficient farmers would tend to have the most incentive to increase production.
- Without large surpluses, high government costs would not occur.
- With the support level set at less than 100 percent of the moving-average market price, the support price would gradually change. During a period when the support price was falling, some program costs would be hidden in product prices.
- With a support level of less than 100 percent of the moving-average market price, the market would influence prices farmers receive for their milk. However, the

moving average would cushion the amount of a price-support decline. The extent to which prices could fall would depend on the percent of the moving-average market price that was used.

#### ASSESSMENT AND DIVERSION PROGRAM

In the assessment and diversion program that ended March 31, 1985, dairy farmers were offered \$10 per hundredweight for voluntary reductions in marketings below their marketings during a base period. Authorization of a program to take effect whenever a large surplus exists would, in effect, institutionalize the program as a means of periodically adjusting milk marketings, and hence production, downward. Our Milk Diversion Program review (see pp. 18-20) indicated that a short-term, voluntary diversion program is not likely to be effective in adjusting production on a long-term basis. However, such a program can be used on a periodic basis to reduce surplus production and reduce purchase and storage costs.

A critical issue in determining the need for a milk diversion program involves the pricing objective. If the support price were to be set above the market-clearing level (i.e., the price at which supply and demand are in relative balance), a standby diversion program would probably be needed to avoid large surpluses. In the event of a major technological change, such as the bovine growth hormone, a diversion program might also be effectively used to pay farmers not to market milk. The assessment procedure would require dairy farmers to bear all or part of the diversion program's costs.

#### Consequences of an assessment and diversion program

This option would subject dairy farmers to periodic assessments and voluntary production controls. Voluntary production controls would be achieved by offering farmers payment for reductions in marketings. From the dairy farmers' perspective, the assessment would be a cost of producing milk. USDA considered the assessment as a cost from the farmers' perspective in its 1983 cost-of-production estimate (Dairy, USDA, Agr. Inf. Bul. 474, p. 34). As a result of the assessment, net returns to dairy farmers per unit marketed would decline. On the other hand, payments for voluntary reductions in milk marketings would increase net returns for those farmers who participate. The extent to which this option would meet the six specific dairy policy goals is as follows:

- A diversion program does not rely on price changes to avoid large surpluses. In the event of a large surplus, price would not automatically be adjusted downward.

Rather, the diversion program would rely on payments to farmers for voluntary reductions in milk marketings to reduce a large surplus.

- An assessment/diversion program does not automatically accommodate changes in production costs. However, if technological change results in lower costs and larger supplies, assessments and diversion payments could be increased to reduce supplies. Reduced production costs due to technological change would be partially offset by the higher assessment. The proceeds from the higher assessment would be used as payments to farmers to reduce marketings, and hence production.
- An assessment/diversion program could affect regional production patterns; however, such effects could be consistent with the goal of producing and distributing milk at least cost. For instance, the less efficient farmers with lower profits would be more likely to participate in such a program than efficient farmers with higher profits, a pattern consistent with such a goal. On the other hand, in those regions with an increasing trend in production, farmers might find the cost of participating in the program artificially high. This can occur if base milk marketings are defined as a past marketing level. Thus, to receive diversion payments, these farmers would have to first reduce their current marketings back to the previous base level since only cutbacks below this base level would be eligible for diversion payments. Because of this artificially high cost of participation--equal to the lost profits on the total cutback and not just the profits lost on the cutback eligible for diversion payments--such farmers would be less likely to participate and reduce marketings as much as would be consistent with the least cost goal. Depending on how the program is designed, the goal of avoiding regional distortions could be partially satisfied.
- If a diversion program is financed with the assessment covering the diversion costs, the reduction in government costs would depend on the assessment level and the percentage of dairy farmers who would participate. Because this program would be voluntary, the goal of avoiding large government costs would be partially satisfied.
- The costs of an assessment-financed diversion program are not visible to the public. In addition, since the support price would not be reduced, hidden consumer costs would be present.
- The very existence of a diversion program suggests that market prices have been maintained above the

market-clearing level and that income enhancement, rather than cushioning price declines, is a primary goal of dairy policy. Thus, this goal would not be fully satisfied in that the level of protection would be maintained above the level determined through the market mechanism.

#### MANDATORY MARKETING CONTROLS

Under this option, production would be controlled through quantitative limits, or quotas, on how much milk each dairy farm can market. Such quotas could be set in reference to a farm's historic marketing level. Any milk marketed over the allocated quota would be priced at far below the cost of milk production. If the support program's objective is to ensure milk prices above market-clearing levels over the long run, mandatory marketing controls would be one method for doing that.

In developing quota programs, questions invariably arise about allocating quotas to new farmers and transferring quotas among existing farmers. Quota transfers are generally permitted through market channels. However, restrictions frequently exist on the speculative purchase of quotas.

#### Consequences of mandatory marketing controls

Mandatory controls were once a major aspect of farm price-support policy. However, under today's price-support programs, mandatory controls exist only for tobacco and, to a limited extent, for peanuts. The reasons for this policy change are inherent in the consequences of mandatory controls. The consequences are described in the following discussion of the extent to which this option would meet the six specific dairy policy goals.

- Quotas are designed to restrict production, through use of marketing limits, to avoid large surpluses. Because quotas control the quantities produced and marketed, an automatic price adjustment mechanism is not needed.
- Quotas inhibit responses to changes in production costs per hundredweight. While there are always incentives for farmers to reduce costs as a means of increasing profits, experience in tobacco indicates that incentives to adopt output-expanding technology tend to be curbed by the quota's existence. That is, quotas that limit the amounts that can be profitably marketed place constraints on farmers' ability to expand output and reduce costs. If production costs fall in response to technological change, higher profits tend to be bid into the quota's value. Because the returns from technology are not reflected in increased production and lower consumer prices, the objective of accommodating changes in production costs would not be met.

- Quotas distort geographical production patterns. Production tends to be frozen in areas where the initial quotas are allocated. In a 1985 report,<sup>5</sup> we said that this was the case in tobacco until 1983 because until then tobacco allotments and/or quotas<sup>6</sup> could only be sold with the farm. Even if quotas were transferable, the market mechanism tends to be distorted. Resources are misallocated, just as they are when a commodity's price is set too high. While surplus production should be curtailed, incentives are created for consumers to use substitutes; for farmers to buy additional quotas rather than productive resources; and for resources that would otherwise be devoted to producing the commodity, to be used for producing other products.
- Quota programs are relatively low cost programs to the government. Although the government incurs some administrative costs, the government's commodity purchase and storage costs could be reduced.
- A quota program's cost would be borne by consumers in the form of higher milk prices. The quota value would be a windfall going to dairy farmers who initially receive the quota. However, the cost of quotas purchased by future dairy farmers or by farmers seeking to increase their marketings would be part of the cost to them of producing milk. They must acquire a quota to market, or expand the marketing of, milk. For example, in Ontario and Quebec, Canada, quotas acquired for the right to market milk in 1983 cost the equivalent of between \$2,540 (U.S. \$2,062) and \$3,327 (U.S. \$2,700) per cow (Dairy Outlook and Situation Report, USDA, Dec. 1984, p. 34).
- A mandatory control program suggests that income enhancement, rather than cushioning price declines, is a primary program objective. It is likely that prices would be supported above market-clearing levels. Therefore, because the level of protection would be maintained above the level determined through the market mechanism, the goal would not be fully satisfied.

#### TARGET PRICE

A target price program for milk would involve setting of a desired, or target, price and direct payments from the government to dairy farmers equal on a per-unit basis to the difference between the target price and the market price--when the

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<sup>5</sup>Department of Agriculture and Producer Costs to Operate the Tobacco Program (GAO/RCED-85-30, Feb. 8, 1985).

<sup>6</sup>Under the tobacco program, allotments limit the acreage that can be planted while quotas limit the amount of tobacco that can be marketed.

market price falls below the target price. The direct payment is referred to as a deficiency payment. One of the bills introduced in the 99th Congress (S. 501) would require that, starting in fiscal year 1988, a target price program using the moving-average market price (see p. 39) replace the existing program of supporting prices through government purchases.

Consequences of target pricing  
without a price-support purchase program

If target pricing operated without a program of government purchases of surplus products, the key factor influencing milk production would be the target price. If the target price was set near the expected free-market equilibrium level, the market price would not be affected materially, and deficiency payments would be small. If the target price was set substantially above the expected free-market equilibrium level, the market price would fall under the burden of abundant milk supplies, and payments would be large. This is what has happened in the target price programs for wheat, cotton, and rice.

Target prices have several important effects that extend beyond the goals discussed below. For example, import quotas are currently used to prevent lower cost imported dairy products from displacing higher cost price-supported domestic dairy products. Without a price-support purchase program, this justification could no longer be used to justify import quotas. Under a system of target prices, the demand for U.S. dairy products could be expected to increase because all production would be sold in the market at prices likely to be lower than they would be under a price-support purchase program. In the process, the demand for substitute products such as margarine and imitation cheese could be expected to decrease. The extent to which the target price option without a price-support purchase program would meet the six specific dairy policy goals is as follows:

- The target price itself does not automatically adjust to changes in the market so as not to generate large surpluses. However, the goal of avoiding large surpluses would be partially satisfied because in the face of increased supply, the market price could be expected to adjust downward until demand absorbed the increased supply. The goal would not be fully satisfied, however, in cases where the target price would be above the market price, in which case the prospect would remain of more milk being produced and marketed than under free-market conditions.
- The target price option indirectly accommodates changes in production costs per hundredweight. For example, lower costs caused by technological changes would be

expected to result in increased supply, which would cause lower market prices to the benefit of consumers. However, the goal of accommodating changes in production costs would not be fully satisfied because the target price itself would not change as a result of changes in production costs.

- Target prices do not in themselves affect regional production patterns any differently than support prices do. However, since current target price programs are subject to limitations on the total amount of payments made to individual farmers (recently, \$50,000 per farmer), we assume that a payment limitation would also apply to a target price program for dairy farmers. To the extent that a payment limitation is effective, production by smaller (presumably higher cost) farmers likely would be fostered. Regional production patterns could be distorted to the extent that the smaller farmers are not evenly distributed across regions.
- A target price program, by itself, would not require that CCC purchase dairy products. However, if target prices are set above market-clearing levels, government costs could become very high because of large deficiency payments. Thus, the target price option does not necessarily avoid large government costs.
- A target price program would make dairy program costs, that is, the deficiency payments, visible to the public rather than being hidden in the price of milk.
- A target price program would cushion the amount by which returns to the farmers could drop. However, during some periods the target price could be set at a level where it, rather than the market mechanism, would become the main price- and income-determining factor, thus not fully satisfying the goal of only cushioning price declines.

#### DEREGULATION

Milk is the only commodity with both marketing orders and a price-support program. Established at a time when much of the milk production was grade B, the price-support program in effect supported manufactured product prices. Through marketing orders, grade A milk prices, as distinguished from grade B or manufactured product prices, were set at a higher level to encourage milk production for fluid use. Since most milk is now grade A, questions are being raised regarding whether both support prices and marketing orders are necessary. What would be the consequences of removing price supports while retaining marketing orders? What if both price supports and marketing orders were dropped?



## Marketing orders only

If marketing orders were retained to set minimum prices paid by processors according to the use to which the milk is put, these orders would probably be expanded to cover those parts of the country not covered by federal marketing orders. Currently, grade B milk is not regulated by federal marketing orders. In addition, several states, such as California, regulate fluid milk prices under state orders.

We assume that a national milk-marketing order system would price milk on the basis of use. Higher prices would be paid for milk used for fluid purposes than for milk used for manufacturing. Grade A producers would be paid on a blend price basis as they are currently, although grade B producers would be paid the manufacturing use price. Geographic price differentials would still probably exist, although multiple price-basing points (rather than the single price-basing point now used) might be needed to reflect relatively low milk production costs and large volumes of manufactured products in areas such as California, Idaho, and New York.

## Marketing orders only consequences

In the absence of production control provisions, marketing orders tend to be less insulated from market forces than either target or support prices. In the long run, price and income levels could be more unstable than with supports because of the past tendency to set the support price above market-clearing levels.

The extent to which the marketing orders only option would meet the six specific dairy policy goals is as follows:

- Retaining federal orders in the absence of the price-support program would place the burden for raising producer returns on classified pricing--charging a higher price for fluid grade milk. Market forces would exert pressure on the order system not to set the fluid use price too high. If the fluid use price was set too high, the manufacturing use price would be forced down; the blend price would also be forced down as fluid use falls. As a result, an automatic mechanism would exist that would probably prevent large surpluses.
- Because marketing orders tend to be affected by market forces, we assume that they would adjust to changes in production costs. For example, a technological change that results in increased supply at less cost should induce lower manufactured milk prices. This, in turn, would lead to lower fluid milk prices.

- The current order program has distorted regional production patterns because order changes have not kept pace with changes in either costs of production or transportation by region.<sup>7</sup> If the same procedures would be followed under an expanded program, the same results could be expected.
- Federal marketing orders are self-financing through assessments on regulated handlers and deductions from dairy farmers. Government expenditures are limited to administrative costs associated with Washington-based personnel. Thus, this policy option avoids large government costs.
- The costs of marketing orders are not visible. If fluid use milk prices are set too high, the extra cost is reflected in increased consumer prices for fluid milk and lower prices for manufactured products.
- The order system could cushion price declines to the extent that it can effectively set minimum prices. Because of the relatively large number of producers and competition, we assume that prices and incomes would be determined much of the time by market forces.

#### No orders and no supports

Under this policy option, both price supports and marketing orders would be removed. Prices would be determined by competitive market forces.

#### Consequences of no orders and no supports

The consequences of free-market conditions in milk are much debated. There are destabilizing forces that operate in the market for a highly perishable product, such as milk, that do not exist in other products' markets. Milk is produced and marketed on a daily basis by a large number of farmers. It must be sold or it generates no income. This tends to place farmers at a bargaining disadvantage unless prices are set administratively, or unless production is controlled. The way in which individual farmers and farmers in milk cooperatives would deal with a free-market situation is unclear.

Without marketing orders, there would probably be a single milk price regardless of the milk's use. The reason lies in the ability to use nonfat dry milk powder to reconstitute a fluid

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<sup>7</sup>A more detailed discussion on how milk-marketing orders distort regional price, production, and trade patterns is presented in a USDA study entitled Review of Existing and Alternative Federal Dairy Programs (Report No. AGES 840121, Jan. 1984).

product.<sup>8</sup> Existing marketing orders make it economically infeasible to substitute reconstituted milk for fluid milk, which is a key to maintaining the present system of classified pricing.

The extent to which this option would meet the six specific dairy policy goals is as follows:

- In the free market, prices would be expected to automatically adjust to market-clearing levels thus preventing large surpluses. After many years of regulation, the milk price drop could be expected to be greater in the short run than in the long run. Fluctuation in prices would tend to be greater, with more price cycles--although not the same cycles as fostered by excessive support prices. Consumer prices would generally tend to be lower than any of the alternatives discussed in this report, except the target price option, although at times they could be higher.
- The free market automatically adjusts to changes in production costs. For example, those dairy farmers who failed to adopt cost-reducing technologies would likely be forced out of business by lower prices.
- Any regional distortions associated with the current price-support and federal order system would be eliminated. The most efficient farmers would tend to have the most incentive to increase production.
- With a free market, no government dairy program costs would be incurred. Increased social program costs, however, could be associated with dairy farmers displaced from dairying who fail to find employment elsewhere. The magnitude of this cost relative to that of the current program or its alternatives is difficult to assess.
- Dairy program costs would be zero, so their visibility would not matter. The goal, therefore, is not applicable.
- A free market would not cushion price declines.

SUMMARY OF EXTENT TO WHICH POLICY  
OPTIONS MEET SPECIFIC POLICY GOALS

Table 5.3 summarizes the results of our analysis of the extent to which each of the options meets the six specific policy goals.

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<sup>8</sup>States might attempt to regulate the use and/or pricing of reconstituted milk. They might also set up state milk-marketing orders. It is assumed in this alternative that neither of these eventualities would occur.

Table 5.3: Extent to Which Policy Options Satisfy Goals for Dairy Policy

<u>Goals</u>	<u>Continue current purchase program</u>						<u>Deregulation</u>		
	<u>Dairy parity</u>	<u>Cost of production</u>	<u>Supply-demand adjuster</u>	<u>Moving-average price</u>	<u>Assessment and diversion controls</u>	<u>Mandatory controls</u>	<u>Target price</u>	<u>Marketing orders</u>	<u>No orders</u>
Provide automatic price adjustment to avoid large surplus	No	No	Yes	Yes	No	N/A	P	Yes	Yes
Accommodate changes in cost of production	No	Yes	Yes	Yes	No	No	P	Yes	Yes
Avoid regional production inefficiencies	Yes	Yes	Yes	Yes	P	No	No <sup>a</sup>	No	Yes
Avoid excessive government costs	No	No	Yes	Yes	P	Yes	No	Yes	Yes
Provide visible program costs	P	P	P	P	P	No	Yes	No	N/A
Let market determine prices and incomes, but cushion price declines <sup>b</sup>	P	Yes	Yes	Yes	P	P	P	Yes	No

Notes: P indicates the goal is only partially satisfied.

N/A indicates the criterion is not applicable.

<sup>a</sup>Assumes payment limitation.

<sup>b</sup>In the case of this goal, P also indicates that there could be significant income enhancement.

## CHAPTER 6

### CONCLUSIONS AND MATTERS FOR CONSIDERATION BY THE CONGRESS

#### CONCLUSIONS

The main objective of federal dairy policies and programs is to assure an adequate supply of milk. In recent years, however, the dairy industry has produced significantly more dairy products than can be marketed commercially, and the federal government has spent billions of dollars in buying, storing, and handling the dairy product surpluses. Although actions have been taken to reduce government purchases and inventories by lowering the milk support price and instituting the diversion and emergency feeding programs, these actions have had limited success in meeting these objectives. Even though the government's dairy product inventories dropped in 1984, they remain at high levels. This condition is expected to continue.

Dairy farmers have improved the efficiency of their operations considerably since dairy programs began in the 1930's, and the potential for significant increases in dairy farm productivity is great. According to recent OTA testimony, the combined effects from technological advances could increase milk production per cow 14 percent by 1990 and 43 percent by the year 2000 if the present economic environment and program policies remain unchanged. The nation's milk consumption has not kept pace with the ability to produce milk. If this situation continues, surpluses will continue.

A dairy policy decision is forced by circumstances. Unless the Congress takes alternative action, the price-support level will revert in October 1985 to a minimum of 75 percent of parity. This would result in a support price of \$16.22 per hundredweight--40 percent higher than the present level of \$11.60. Such an increase could mean significantly higher prices for consumers of dairy products and would signal the milk industry to increase production capacity--thereby increasing surpluses and government costs.

The question then is should the present support program be reauthorized, revised, or replaced. We believe that any dairy policy that the Congress adopts should be sufficiently flexible to adapt to rapidly changing economic and technological conditions affecting the milk industry. Unless dairy policies reduce economic incentives attracting resources to or keeping the inefficient farmers in dairy farming, burdensome surpluses of federally purchased dairy products and high government costs will continue.

In an attempt to assist the Congress in its deliberations on which course of action to take, we have evaluated the consequences of several options for revising or replacing the present support program. To analyze these options, we set out six specific policy goals that we considered important to balance the interests of consumers, the dairy industry, distributors, and taxpayers. Our judgment is that if these specific goals were met, it would facilitate the efficient accomplishment of the broad policy objective of an adequate supply of milk.

We considered each of the six goals as equally important. We did not attempt to assign greater weight to one over another. We recognize, however, that different or additional goals could be established and that policymakers may consider one or more goals of greater importance than others. The conclusions we draw from the options and goals we considered are as follows.

Maintain dairy price-support  
purchase program but change basis  
for determining support level

We considered four options in conjunction with continuing the present price-support program, each of which would replace the program's parity formula as the basis for the support price. Except for only partially meeting the goal of providing visible program costs, which is also the case with the other three options in this category, the supply-demand adjuster option meets all the goals we considered. If the desired purchase level is sufficiently low, this option would avoid large government surpluses and costs by automatically adjusting the support price up or down based on either actual or projected levels of government purchases. It would also accommodate changes in per-unit production costs, such as those resulting from technological advances; help avoid regional production inefficiencies to enable consumers to purchase dairy products at least cost; and let the market determine prices and incomes most of the time but cushion price declines for dairy farmers to ensure industry stability.

The moving-average pricing option also meets all the goals we considered, with the previously mentioned exception of only partially meeting the goal of providing visible program costs. With moving-average pricing, achieving some of the goals would be more gradual than with a supply-demand adjuster.

The cost-of-production option would accommodate changes in production costs, such as those due to technological advances; avoid regional production inefficiencies; and let the market determine prices and incomes most of the time but cushion price declines. However, using production costs to set the support

price would not meet the goal of providing automatic price adjustments to avoid large surpluses and, consequently, large government costs.

Dairy parity indexing would avoid regional production inefficiencies, but would not meet three of the goals: (1) providing automatic price adjustments to avoid large surpluses, (2) accommodating changes in cost of production, such as those due to technological advances, and (3) avoiding excessive government costs. Also, dairy parity indexing, while cushioning price declines, could result in support prices, and therefore dairy farmers' incomes, substantially above those that would result from a system in which the market is the main price- and income-determining factor, thus not fully satisfying this goal.

#### Milk diversion program

A milk diversion program financed by assessments does not, by itself, fully meet any of the six goals we considered. However, as discussed on page 41, a diversion program could be used to complement other programs in a situation where milk production suddenly surges due, for example, to a major technological breakthrough such as is projected for bovine growth hormone.

#### Mandatory marketing controls

With a mandatory marketing control program, the goal of providing automatic price adjustments to avoid large dairy surpluses is not applicable because marketing quotas would be established based on estimated national demand. While this option would avoid excessive government costs and partially meet the goal of cushioning price declines, it does not meet the remaining goals. Further, although excessive government costs for purchasing dairy products would be avoided under this option, USDA would incur some costs to administer the quota system.

#### Target price program

A target price program involving deficiency payments could lead to excessive government costs if target prices were set much above market-clearing levels. In such a case, program costs--i.e., the deficiency payments--would be visible. Also, assuming a limitation on the total amount of deficiency payments to individual farmers, a target price program could distort regional production patterns to the extent that smaller (presumably higher cost) farmers are not evenly distributed across regions.

A target price program would only partially satisfy the goals of automatically adjusting price levels so as not to generate large surpluses; accommodating production cost changes, such as those due to technological advances; and letting the market determine prices and incomes for the most part, while cushioning price declines.

#### Deregulation with or without marketing orders

Eliminating the price-support program but retaining marketing orders would result in partial deregulation of the dairy industry. This option would not avoid regional production inefficiencies or provide visible program costs. It would, however, satisfy the other four goals.

If marketing orders were eliminated along with the price-support program, there would be no program costs nor would there be a price-decline cushion provided for dairy farmers. The other goals would be met. Such deregulation, however, would likely result in the short run in substantial industry instability and adverse financial impact on some dairy farmers and processors.

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As indicated by the extent to which the specific goals are met, the supply-demand adjuster with sufficiently low purchase levels and the moving-average price options best meet the specific goals we believe should be a part of dairy policy, although the moving-average price option would take longer to achieve some of the goals. To a somewhat lesser extent, deregulation meets the specific goals as well. Obviously, the Congress may view these goals or others with different weight and, accordingly, the extent to which a particular option would be favored would change. For example, greater weight might be given to the importance of cushioning price declines relative to the visibility of program costs. If so, a higher level of price and income might be justified.

#### MATTERS FOR CONSIDERATION BY THE CONGRESS

To avoid reverting to the parity formula required by the Agricultural Act of 1949, which would result in increasing the current support price from \$11.60 to \$16.22 a hundredweight, legislation will be needed to revise or replace the present dairy price-support program. In deliberating such legislation, the Congress may wish to give consideration to either the supply-demand adjuster or moving-average price option.



AGENCY COMMENTS

USDA provided official oral comments on a draft of this report. USDA officials responsible for administering and evaluating dairy and related programs (including the Assistant Secretary for Food and Consumer Services; the Deputy Under Secretary for International Affairs and Commodity Programs; and the Administrators of AMS, ASCS, and FNS) said that the draft report was balanced in tone and that they generally agreed with the facts, conclusions, and matters for consideration presented in the report. They offered several suggestions to improve the technical accuracy of the report. We revised the report, where appropriate, based on the suggestions made.

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