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THE IMPACT OF DAIRY IMPORTS ON THE U.S. DAIRY INDUSTRY

A REPORT

BY THE

ECONOMIC RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE

In Compliance With

Title II, Section 205 of the Agriculture and Consumer Protection Act of 1973

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FOR THE

COMMITTEE ON AGRICULTURE AND FORESTRY
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FOREWORD

At the time the Senate Committee on Agriculture and Forestry considered the legislation which subsequently became the Agriculture and Consumer Protection Act of 1973, there was considerable discussion of the impact dairy product imports have had and were having on the domestic dairy industry. At that time, executive actions had been taken to expand dairy product imports for the purpose of holding down or reducing domestic prices of these products. In the face of declining milk production, these actions served as a blow to the morale of the dairy farmer and reduced his confidence in his markets and the future of the industry.

In view of this, the Committee included provisions in the bill, S. 1888, which was reported to the Senate to provide for a specific ceiling on imports of dairy products for food use of no more than two percent of the total consumption of dairy products in the preceding calendar year. While this provision did not become a part of the final law, the issue was of such concern and merit that the Congress did direct the Secretary of Agriculture to conduct a comprehensive study to determine the effect of increases, if any, of the level of imports upon domestic dairy farmers, handlers, processors and consumers. The report contained herein is the result of that directive.

As the second largest element of American agriculture and the source of a vital part of our food supply, the dairy industry and its future must be of concern to each of us. This study represents an important item of information for use in future policy considerations and recommendations.

The study considers three trade policy alternatives for the dairy industry and the impact of each over time. They are: first, maintain the existing dairy price support program with continued import quotas; second, free trade in dairy products for all countries; and third, an open U.S. market with no domestic price supports or import quotas for dairy products. Obviously, this country could unilaterally implement only the first and third alternatives, and the first portrays the present program effects.

Briefly, looking at the report in regard to the third alternative—an open U.S. market—some of the principal points include:

1. Imports of butter, cheese and dry milk would immediately flood U.S. markets, thereby driving market prices down and devastating the domestic dairy industry.
2. Producers would be subjected to catastrophic price declines and tremendous losses, thus forcing them out of business.
3. Domestic processors would also suffer. Forced closing of plants would subsequently result in employment loss.

4. Consumer prices would immediately decline, but by 1979 would have increased to levels higher than under a continuation of the existing program.

5. But, just as important, an open market policy would quickly place this country in a position of dependence on foreign suppliers. Our oil crisis has clearly demonstrated the shortfalls of this arrangement.

It is my hope that the wide distribution of this study will be of significant help to the Committee as it solicits views during reconsideration of the provisions of the Agriculture and Consumer Protection Act of 1973.

The number of farms reporting milk cows is decreasing at an alarming rate. Between 1964 and 1969 our dairy farm numbers were cut in half and between 1969 and 1973 there was another loss of nearly 40 percent. In total, we have seen nearly 850 thousand dairy farmers depart in the past 10 years.

This trend cannot be allowed to continue. Milk and its products are an essential element of nutrition and our diets.

And the only way to prevent this trend from continuing is to provide the framework for a strong and viable dairy industry.

The Committee hopes to achieve this goal in the anticipated Agriculture and Anti-Depression Act of 1975.

In any event, the Committee is printing this study in order to provide interested parties an opportunity to study, analyze and form opinions on dairy price support policy.

HERMAN E. TALMADGE,
Chairman, Senate Committee on Agriculture and Forestry.

PREFACE

This study was undertaken in response to the Agriculture and Consumer Protection Act of 1973, which directed the Secretary of Agriculture to carry out a comprehensive study to determine the effect of increases, if any, of the level of imports upon domestic dairy producers, handlers, processors, and consumers (app. A). The Act directed that the findings be reported to Congress by January 1, 1975.

The study was made by the Department of Agriculture's Economic Research Service, with assistance from members of USDA's Foreign Agricultural Service and Agricultural Marketing Service. The Agricultural Stabilization and Conservation Service provided partial financial support for the study. Two meetings were held with dairy industry representatives—one at the inception of the study and one when the procedures and approach were finalized. These meetings were intended to add focus to the study but no specific results were reviewed at these meetings.

SUMMARY AND CONCLUSIONS

The dairy industry in the United States is an important element in our total agricultural plant. Consumer expenditures for milk and dairy products accounted for animal sales of $19 billion in 1973. Of this amount, $9.7 billion represented fluid milk and related sales, and $9.3 billion represented the sales of manufactured dairy products. Dairying is also important to the industrial sector as dairy processing plants employ about 200,000 people.

This study represents the results of an analysis of three trade alternatives:

(1) Continued U.S. policy of import quotas for dairy products at the current Section 22 level.

(2) Free trade in dairy products in the United States and abroad. This means all countries would eliminate trade barriers, subsidies, and price support programs and allow a free flow of dairy products and movements of prices toward a world price.

(3) An open U.S. market policy with no dairy import quotas. This means that the United States would eliminate trade barriers while all other countries would be free to pursue their individual dairy policy including imposing trade barriers and export subsidies. This would necessitate the elimination of the U.S. dairy price support program.

Specific numbers are shown presenting the estimated impact of the three trade alternatives on such items as: levels of imports into the United States; U.S. milk production, consumption, and prices; net cash income and number and sizes of dairy farms and processing plants. The numbers are precise, but they are intended to illustrate the direction and magnitude of expected changes under each of the three trade alternatives. Many assumptions were needed to arrive at these specific numbers. This should be kept in mind when looking at specific numbers and drawing conclusions therefrom.

Some recent studies have looked at the question of more liberalized trade and the implications for the U.S. dairy industry. Some results of this study differ from the results in those studies because of different assumptions and scope of analysis. This study comprehensively considers dairy but assumes trade in other agricultural products as given and is, therefore, a partial analysis.

Dairy import quotas primarily exist because of the dairy price support program. Without quotas the price support program would have to be discontinued, otherwise the U.S. Government would, to some extent, have to support world dairy prices. The question of whether expanded imports of dairy products are in the best interest of this country is not clear-cut. Numerous trade-offs in national objectives are involved.

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For example: (1) Lowest possible consumer prices in the short-run may imply rather harsh adjustments by farmers and processors of dairy products; (2) taking advantage of lower consumer prices in the short-run through imports would make us more dependent on foreign supplies and would open us up to the risks and uncertainty associated with the dependability of those supplies.

Summary of Analysis of Three Trade Alternatives

Three trade alternatives were analyzed for the period 1975–80. The analysis is based on expected supply and demand conditions and dairy policies in major dairy areas. The six major dairy-producing regions considered are: the expanded European Economic Community, including both the EC–6 [1] and the EC–3 [2], the United States, Canada, New Zealand, and Australia. Also, a group of other significant producing or consuming countries was included in the analysis. This group consisted of: Argentina, Brazil, Colombia, Peru, Uruguay, Japan, Austria, Finland, Greece, Norway, Spain, Sweden, and Switzerland.

Continued Section 22 Import Quotas

Under this alternative, present import quotas for dairy products at the current Section 22 level would be continued along with the dairy price support program.

Levels of imports that would enter the United States.—Imports would be 1.7 billion pounds of milk equivalents annually through 1980, or about 1.5 percent of U.S. production (table A).

U.S. milk production and consumption.—Production would increase about 3 percent from 1974 to 1980. Consumption would drop from 544 pounds per capita in 1974 to 523 pounds in 1980.

U.S. milk and dairy product prices.—Farm milk prices would be above 85 percent of parity in 1980. Consumer prices for selected dairy products would range from 20–28 percent higher in 1980 than in 1974—about 3 percent greater than under the free trade alternative.

Net cash income of U.S. dairy farmers.—Dairy income from 1975–80 would equal 1972 income in purchasing power.

Number and size of U.S. dairy farms and processing plants.—More than 181,600, or 47 percent, of the U.S. dairy herds in 1973 would discontinue production by 1980. There would be 20 percent fewer cheese plants and 44 percent fewer butter plants in 1980 than in 1972.

Free World Trade in Dairy Products

This alternative assumes no trade barriers, subsidies, or price support programs in any country.

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[1] France, West Germany, Belgium, Luxembourg, Netherlands, and Italy.
[2] Denmark, Ireland, and the United Kingdom.

TABLE A.—ESTIMATED DAIRY IMPORTS IN MILK EQUIVALENTS UNDER 3 TRADE ALTERNATIVES, 1975–80 [1]

Year	Continued quotas		Free trade		Open U.S. market	
	U.S. imports (billion pounds)	Percent of production	U.S. imports (billion pounds)	Percent of production	U.S. imports (billion pounds)	Percent of production
1975.....	1.7	1.5	2.9	2.5	12.2	11.0
1976.....	1.7	1.5	2.8	2.4	13.4	12.5
1977.....	1.7	1.4	3.8	3.3	10.5	9.6
1978.....	1.7	1.4	4.3	3.7	9.2	8.3
1979.....	1.7	1.4	4.8	4.1	8.0	7.2
1980.....	1.7	1.4	5.3	4.5	6.7	6.0

[1] See tables 8, 11, and 15.

TABLE B.—ESTIMATED U.S. MILK PRODUCTION, CONSUMPTION AND FARM MILK PRICE UNDER 3 TRADE ALTERNATIVES, 1975–80

Year	Continued quota			Free trade			Open U.S. market		
	Milk production (billions of pounds)	Civilian consumption (billions of pounds) [2]	Farm milk price (per hundredweight) [1]	Milk production (billions of pounds)	Civilian consumption (billions of pounds) [2]	Farm milk price (per hundredweight) [1]	Milk production (billions of pounds)	Civilian consumption (billions of pounds) [2]	Farm milk price (per hundredweight) [1]
1975	114.8	113.7	$8.90	114.1	114.2	$8.77	111.0	120.4	$6.94
1976	117.0	114.4	9.39	116.4	114.8	9.04	107.2	116.3	8.26
1977	118.0	116.2	9.43	116.8	117.2	9.02	109.3	116.3	9.00
1978	118.6	116.9	9.73	117.1	118.0	9.25	110.3	116.1	9.61
1979	119.0	117.3	10.05	117.2	118.7	9.54	111.2	115.8	10.22
1980	119.0	117.4	10.39	116.9	118.9	9.72	111.6	115.0	10.90

[1] All milk wholesale price.
[2] Production and consumption can be reconciled by adding imports and beginning stocks on the supply side; and exports, fed to calves, ending stocks and military use on the demand side (see tables 8, 11, and 15).

Levels of imports that would enter the United States.—Imports would increase from 2.9 billion pounds in 1975 to 5.3 billion pounds in 1980.

U.S. milk production and consumption.—U.S. milk production would be 117 billion pounds by 1980, or nearly 2 percent larger than in 1974. Consumption would drop from 544 pounds per capita in 1974 to 531 pounds in 1980.

U.S. milk and dairy product prices.—Farm prices under free trade would be at 99 percent of the price needed to leave real 1972 net cash income unchanged in 1975 and decrease to 94 percent by 1980. Consumer prices for selected dairy products would range from 16–22 percent higher in 1980 compared to 1974, or slightly less than under a continued quota policy.

Net cash income of U.S. dairy farmers.—Dairy income would range from 72–89 percent of the 1972 net cash income but would trend toward the lower end of this range by 1980.

Number and size of U.S. dairy farms and processing plants.—By 1980, an additional 4,200 U.S. dairy farms would discontinue production than under the continued quota alternative. There would be 47 percent fewer butter and 20 percent fewer cheese plants in 1980 than in 1972—a more rapid decline than under a continued quota policy.

Open U.S. Market Policy

This alternative assumes no dairy import quotas or price support program in the United States. Other countries would be free to pursue their own policies. Results would be similar whether countervailing duties are levied, or not.

The impact of the open market alternative shown in this report is greatly influenced by the relatively short-run cycle in surpluses expected in the EC–9. Conditions in 1974 suggest growing surpluses which, to a large extent, would be imported into an open U.S. market. The costs of these surpluses would become burdensome to the EC–9 and policies to reduce them would be implemented causing imports to the U.S. to decline through 1980 from a 1976 high.

Levels of imports that would enter United States.—Imports would be 12.2 billion pounds of milk equivalents in 1975, 13.4 billion pounds in 1976, and 6.7 billion pounds in 1980.

U.S. milk production and consumption.—Milk production would be 3.8 billion pounds less in 1975 and 9.8 billion pounds less in 1976 than what it would have been under the continued quota alternative. Consumption would increase sharply in 1975 and 1976 compared with continued quotas, but would decrease later in the decade to about 513 pounds per capita by 1980.

U.S. milk and dairy product prices.—The expected 12 billion pounds of imports to enter an open U.S. market in 1975 would reduce the U.S. all-milk wholesale price to about $6.94 per 100 pounds (about $2 less than if quotas were continued). Primarily because EC–9 surpluses are expected to start declining in 1976, prices would start to recover and would be higher in 1978–1980 than if quotas were continued. Product prices would be lower in 1975 and 1976 than under a continued quota policy but would be higher in 1980.

Net cash income of U.S. dairy farmers.—Dairy farmers would experience a sharp drop in income in 1975 and 1976 but those dairymen

remaining would have a net cash income in 1979–80 similar to what would be expected under a continued quota alternative.

Number and size of U.S. dairy farms and processing plants.—By 1980, an additional 17,300 herds would discontinue production than under the continued quota alternative. Most would be smaller herds but all size groups would be affected. There would be 56 percent fewer butter and 26 percent fewer cheese plants in 1980 than in 1972.

The Question of Relaxing Import Quotas

Three key questions in considering the impact of relaxing dairy import quotas include:

1. Are there areas of the world that can produce dairy products at a lower cost than the United States?

2. Is the potential supply from those areas large enough to drive the U.S. market price to their cost of production plus transportation and any differences in processing cost or at least to substantially lower the U.S. price?

3. What would be the potential exports to the United States from countries who could not compete with the U.S. market price but would subsidize exports?

Some main conclusions with respect to these questions are:

1. New Zealand and Australia are the major exporting areas that could profitably ship dairy products to the United States without export subsidies. This is primarily due to the low cost of milk production of their pasture-based dairy industries.

2. The potential increase in supply of dairy products from New Zealand and Australia is quite limited through 1980. Their potential growth even with higher free trade prices from 1976 to 1980 is estimated at about 12.5 percent. Only about 1.5 billion pounds of this increased production would be reflected in exports, as New Zealand's total domestic consumption will also increase by 1980.

The total increase in milk production in Australia would be slightly less than for New Zealand but exports would increase about 1.9 billion pounds of milk equivalents taking into account their expected increase in consumption.

Most of this increase from New Zealand and Australia would be offset by deficits created by lower free trade prices in the EC–9. Therefore, the potential supply from Oceania is so small relative to total production in all the major supply areas that under free trade, prices would not fall to Oceania's current cost of production plus transportation and any differences in processing costs.

3. No export subsidies would exist under conditions of free trade so dairy products would not flow from high to low cost areas of production. However, the EC–9 is the dominant factor in determining the implications of an open U.S. market because of its surplus dairy policies and the volume of those surpluses. These surpluses, which would have to enter world markets, could change dramatically with rather normal variations in production or consumption.

Additional results of the study related to specific issues surrounding the dairy import question are summarized in the following sections.

Dependability of Imported Supplies

Once a policy of expanded imports is adopted, the short-run tendency would be to lower prices and reduce domestic production. This

country would then become increasingly dependent upon imports. If, after the U.S. industry had adjusted to a higher level of imports, the level of imports would remain stable, no serious disruption would be expected in the longer run. However, as the degree of dependence grows, the question of reliability of imports would become more crucial. Resources once taken out of dairying cannot be quickly replaced.

Dependability of foreign supplies, in large part, would depend upon policies followed by the major dairy-producing countries as well as policies followed by this country. Lower cost dairy products would be available from New Zealand and Australia in limited quantities because the potential for expanding milk production is relatively small.

New Zealand and Australia, having large quantities of dairy products to export year-after-year, would be interested in dependable markets. They would ship more dairy products to the United States on a regular basis if the market was assured than if the United States bought only occasionally.

The EC–9 is also an important factor in the question of dependable supplies. Policies and normal variation in milk production due to weather can substantially change the amount of exports from the EC–9. Normal variations in weather plus the fact that surpluses are expensive to the EC–9 in terms of export subsidies, would create a situation where surpluses from the EC–9 would likely not be available year-after-year in stable quantities. The reliability of EC–9 exports of dairy products can be characterized as uncertain and probably quite variable.

Likely Impact Upon Producers

The impact of expanded imports would vary greatly depending upon circumstances. Opening U.S. markets would result in substantial declines in producer income, sharply curbing domestic U.S. milk production and increasing our dependency on imports.

It is likely that those dairy farmers who would be able to survive depressed prices for two or three years would eventually find returns back at levels about as high (higher if imports decline as expected), than those which might exist if quotas were continued.

In the short-run, it is estimated that for every 500 million pounds of product milk equivalent imported, producer returns would be reduced about 9 cents per hundredweight.

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THE IMPACT OF DAIRY IMPORTS ON THE U.S. DAIRY INDUSTRY

Introduction

At prevailing Government support prices, milk in the United States has typically been in excess supply. This situation has required fairly tight import quotas on dairy products to prevent the United States from supporting world prices through the price support program.

In late 1972, cheese prices increased substantially above support levels and remained there until the summer of 1974. By mid-year 1973, both butter and nonfat dry milk prices also rose above the Government support levels and attention turned to the possible need for additional imports.

During late 1972 and all of 1973, great consumer pressure mounted to hold food prices down. Subsequently, the President of the United States authorized temporary increases in the quotas on the grounds that they would not interfere with the price support program. By mid-1974, prices for dairy products had fallen to support levels, and imports were tagged by many as a major cause for the price declines.

This study was undertaken in response to a Congressional directive to the Secretary of Agriculture in the Agriculture and Consumer Protection Act of 1973 to "carry out a comprehensive study to determine the effect upon domestic dairy producers, handlers, and processors and upon consumers of increases in the level of imports, if any, of dairy products . . . ." [1]

U.S. import quotas on dairy products

Section 22 of the Agricultural Adjustment Act, as amended, provides for import quotas on price-supported commodities to prevent interference with the price support program. Under Section 22, the Secretary of Agriculture is to advise the President whenever he has reason to believe that dairy products are being imported under such conditions and in such quantities as to render or tend to render the dairy price support program ineffective or materially interfere with it. Dairy product import quotas currently in effect are listed in appendix B.

If the President agrees that such a situation may exist, he directs the Tariff Commission to conduct an investigation and public hearing and to give him a report of the findings and recommendations. The

[1] Agriculture and Consumer Protection Act of 1973, Title II, Section 205 (app. A).

President is authorized, based on such findings, to impose such fees or quotas in addition to the basic duty as he shall determine necessary.[2]

Whenever the Secretary of Agriculture reports to the President that a condition requiring emergency treatment exists, the President may take action without awaiting the report of the Tariff Commission. Any such presidential action shall continue in effect pending the Tariff Commission's report and recommendations and any action thereon by the President.

Objectives of the Study

This study projects the impact of three basic trade alternatives on the U.S. dairy industry for 1975–80. The alternatives considered are:

(1) Continued U.S. policy of import quotas for dairy products at the current Section 22 level.

(2) Free trade in dairy products in the United States and abroad. This means all countries would eliminate trade barriers, subsidies, and price support programs and allow a free flow of dairy products and movements of prices toward a world price.

(3) An open U.S. market policy with no dairy import quotas. This means that the U.S. would eliminate trade barriers while all other countries would be free to pursue their individual dairy policy including imposing trade barriers and export subsidies. This would necessitate the elimination of the U.S. dairy price support program.

Although these alternatives represent somewhat extreme positions, they were selected so that implications of a wide range of U.S. trade policies falling between the extremes could be approximated.

The projected impact of these alternatives on the U.S. dairy industry is broken down into the following areas:

(1) The expected level of imports that would enter the United States.

(2) U.S. milk production and consumption.

(3) U.S. milk and dairy product prices.

(4) Net cash income of U.S. dairy farmers.

(5) Number and sizes of U.S. dairy farms and processing plants.

Also, some of the major issues surrounding the dairy import question are discussed.

Issues Surrounding the Dairy Import Question

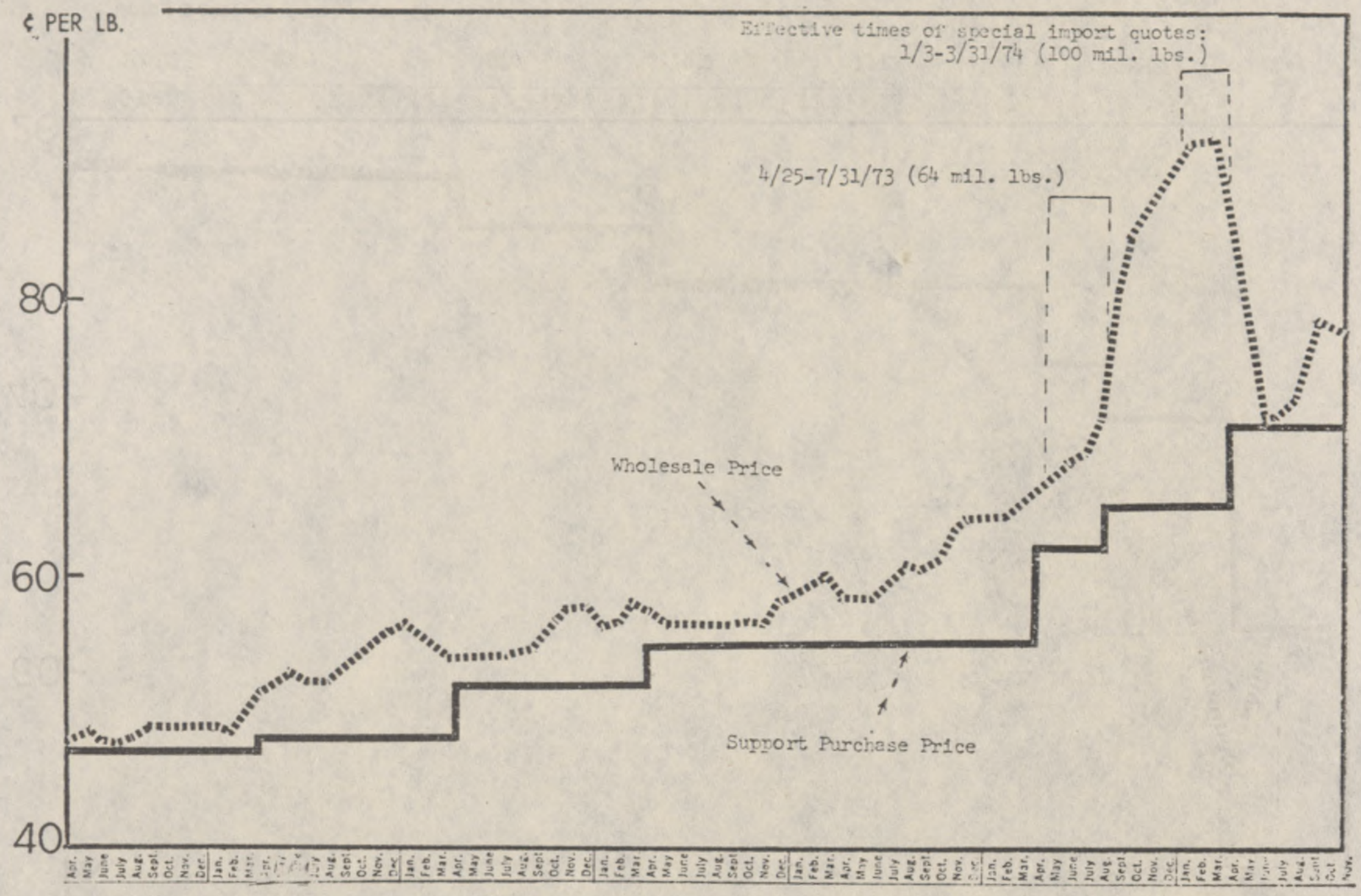
Additional Imports—The 1973–74 Experience

Eight emergency import actions were taken in late December 1972 through June 1974 as part of the administration's effort to meet tight supply situations and halt the sharply escalating cost of food. Two of these actions allowed increased imports of cheese (fig. 1); one allowed increased imports of butter (fig. 2); and five allowed increased imports of nonfat dry milk (fig. 3).

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[2] The additional fees may not exceed 50 percent ad valorem and the quotas proclaimed may not be less than 50 percent of the quantity imported during a previous representative period, as determined by the President. Furthermore, the President may designate the affected article or articles by physical quantities, value, use, or any other basis he may determine.

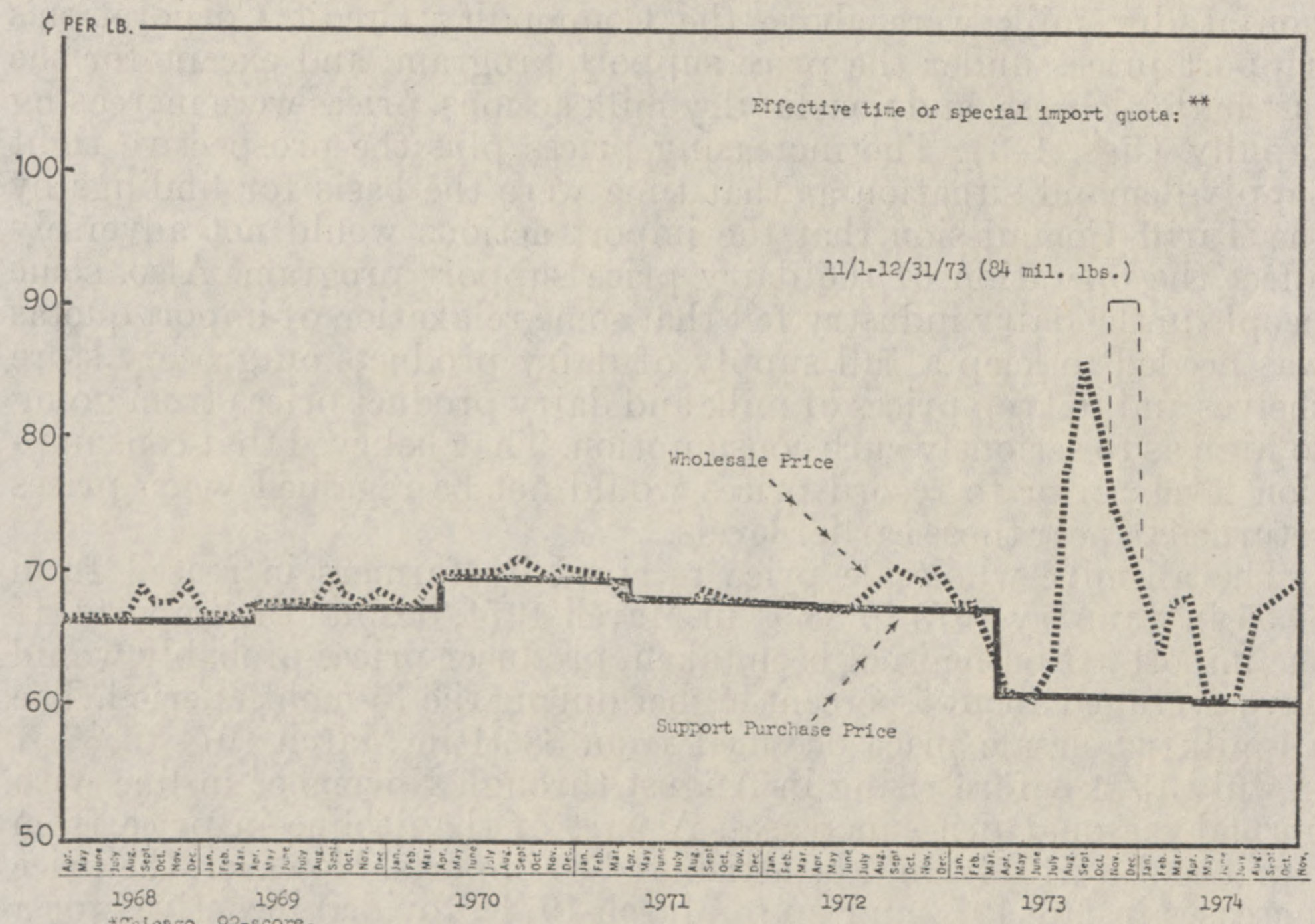
CHEESE PRICES AND TIMING OF SPECIAL IMPORT QUOTAS*



*American cheese, 40-lb. blocks, Wisconsin assembling points; and Presidential Proclamation increases above Section 22 quotas.

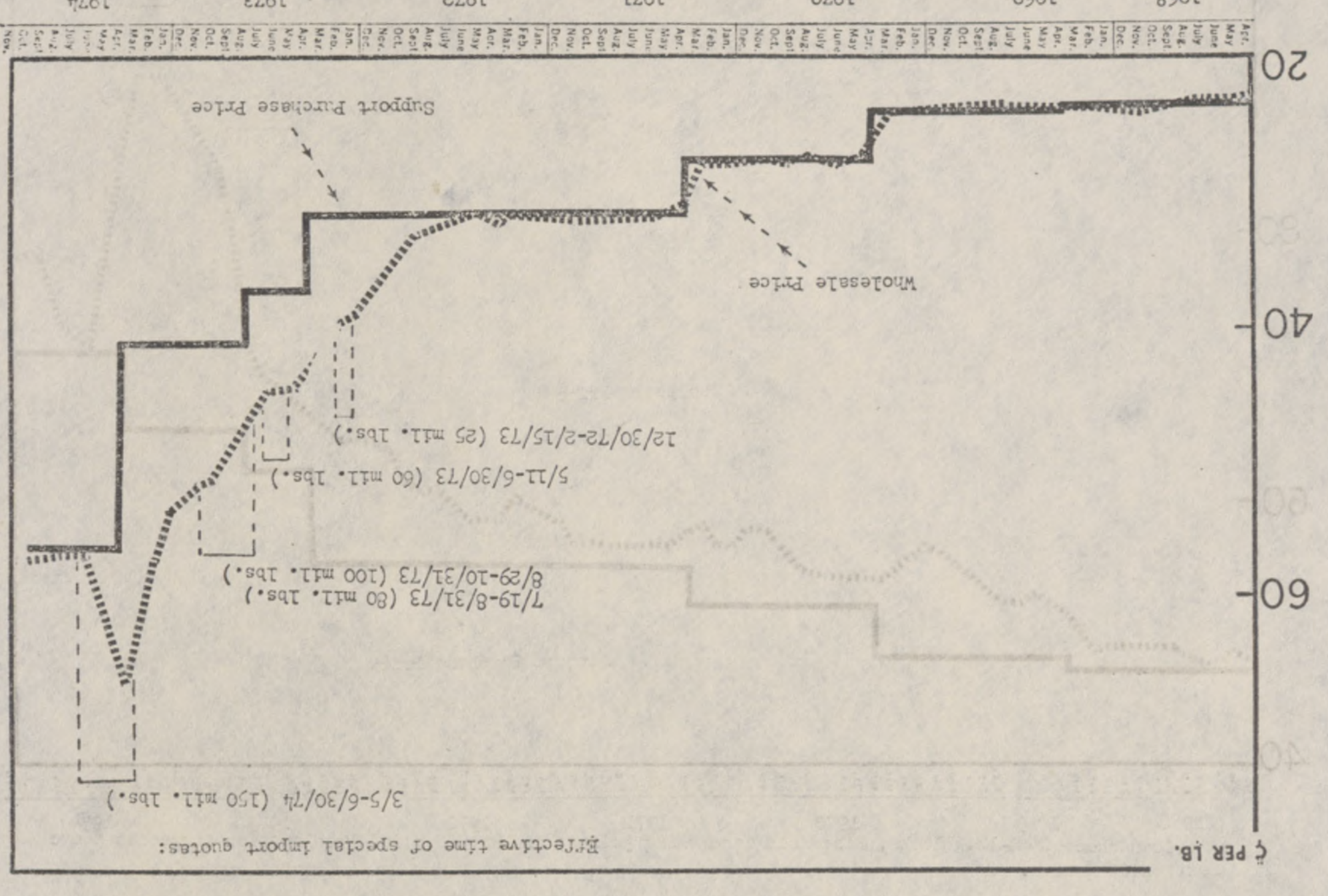
FIGURE 1

BUTTER PRICES AND TIMING OF SPECIAL IMPORT QUOTA*



*Chicago, 92-score.
**Includes butter equivalent of butteroil.

FIGURE 2



*Spray process, for human food.

FIGURE 3

At the time these actions were taken, prices for cheese, butter, and nonfat dry milk were above the Commodity Credit Corporation's support prices under the price support program, and except for the last butter, cheese, and non-fat dry milk actions, prices were increasing rapidly (figs. 1–3). The increasing prices plus the prospective tight supply-demand situation at that time were the basis for findings by the Tariff Commission that the import actions would not adversely affect the operation of the dairy price support program. Also, some people in the dairy industry felt that some relaxation of import quotas was needed to keep a full supply of dairy products on grocery store shelves and to keep prices of milk and dairy product prices from going so high as to seriously curb consumption. They believed that consumption levels prior to record prices would not be regained when prices returned to near those earlier levels.

The all-milk wholesale price received by farmers increased from $6.55 in January 1973 to $8.94 in March 1974, despite the imports. If the import action had not been taken, producer prices probably would have averaged about 5 percent higher during the 15-month period. The all-milk wholesale price declined from $8.94 in March 1974 to $7.57 in July 1974 before rising in August through November in line with normal seasonal price increases. A part of the decline in price from April to July 1974 could be attributed to imports. However, the price increases in late 1973 and up to March 1974 provided incentives for a recovery in milk production and for reduced fluid consumption which diverted more milk into manufacturing uses, contributing to the price decline starting in April 1974.

Also, prices paid by consumers in 1973 would probably have been about 5 percent higher without imports. From the standpoint of both handlers (processors and merchandisers) and consumers, adequate supplies of most dairy products were always available in most retail stores.

TIMING OF IMPORTS

Except for the three import actions to allow butter and butter oil to enter the United States from November 1 to December 31, 1973, the action to allow nonfat dry milk to enter from March 5 to June 30, 1974, and the action to allow cheese to enter from January 3 to March 21, 1974, all actions came during periods when dairy product prices were moving up quite rapidly (figs. 1–3). The butter imports were characterized as too late, since butter prices had gone to over 87 cents per pound just 2 months before in September 1973 and were decreasing in November and December when the imports were authorized. The nonfat dry milk and cheese actions in early 1974 came when prices were at a record high. Although the imports were undoubtedly a factor in the following price decline, all previous import authorizations which had come when prices were rising did not reverse the trend.

The 1973–74 experience does show that timing of imports is important if they are to be a stabilizing rather than a destabilizing influence. For example, prices would have gone even higher and to the extent imports were too late entering the United States, prices would not have declined as much in the absence of these imports. When imports are ill timed, prices fall more than usual, thereby destabilizing rather than stabilizing prices. A real problem in timing is created by the built-in lags between the time imports might be needed and when they actually enter the United States. Several time lags increase the difficulty of timing imports so as to minimize market disruption. Examples of time lags are: recognizing the need for imports; determining the amount needed; investigation by the Tariff Commission as required by law; and the response by supplying countries and shipments to the United States.

UNCERTAINTY FOR DAIRY FARMERS

A viable dairy farm requires large investments of at least $200,000 in land, equipment, livestock, and operating capital. Since these investments require long-term debts, the profit expectations of farmers over the long run must be favorable to attract the needed capital. The additional imports authorized over quotas in 1973 and early 1974 added uncertainty in calculating these longrun expectations, for the imports became yet another factor which could hold farm prices down and even act as an additional destabilizing influence.

At the time of the import actions, the dairy industry was operating under a general feeling that their Government was prepared to allow imports of dairy products into the United States in exchange for access to foreign markets for U.S. feed grains. In the absence of a clear Government trade policy, many dairy farmers believed that the Government was "selling dairy down the river." In this context, additional imports created a great deal of uncertainty and undoubtedly adversely influenced the long term decisions of many dairy producers.

Many in the dairy industry believe that a comprehensive import policy might be a stabilizing factor in U.S. markets and help avoid wide fluctuations in prices. But such a policy would require a clear understanding of when and under what conditions additional imports would be allowed.

IMPLICATIONS FOR CONSUMPTION OF DAIRY PRODUCTS

Wide fluctuations in dairy product prices and occasional unavailability of dairy products on grocery store shelves may adversely affect consumption as consumers turn to substitute products. Since there is a real question as to whether some consumers will shift back to dairy products as supplies return or prices decline to more normal levels, the price and supply issue becomes an important consideration in formulating trade policy.

MARKET STABILITY

With free trade or on import quotas, U.S. market prices would be subject to changes in world supply and demand. Weather and policy in other parts of the world would then become important factors in determining U.S. farm and consumer prices. Exposing the U.S. market to large quantities of imports would reduce the U.S. price, thus causing less domestic milk to be produced and more dairy products to be consumed. If the imports were to dry up after the industry had adjusted to them, prices could be driven substantially higher than they would have been without imports. On the other hand, a properly designed import policy may contribute to market stability and thereby enable farmers and processors to make better longrun planning decisions. A critical issue would be the dependability of foreign supplies over time and the degree of fluctuation in foreign supplies from year-to-year.

QUALITY OF FOREIGN DAIRY PRODUCTS

Concern has been expressed over sanitation standards in countries exporting dairy products to the United States. Unfair competitive advantage is alleged due to the strict sanitation standards of the U.S. industry not being imposed on exporting nations. However, review of sanitation standards in connection with this study revealed that several of the major dairy-exporting nations have sanitation inspection rules and regulations, both at the farm and processing plant, that may equal or exceed those of the United States (app. table C–1). The comparison was made for grade B, or manufacturing-grade milk, which is used in products similar to those being imported. Standards for grade A milk for fluid consumption are not applicable here.

To the extent that increased imports of dairy products would come from areas with hygienic problems, sanitary quality could be a serious concern. For example, in 1973, unallocated portions of the special import quotas permitted 40 percent of the nonfat dry milk to come from areas not free of rinderpest and foot-and-mouth disease. This nonfat dry milk had to be restricted to human use only, rather than animal feed, to preclude the danger of spreading disease to domestic animals.

The principal inspection of U.S. dairy manufacturing plants and grading of manufacturing products is done by the U.S. Department of Agriculture (USDA). If the products are to carry USDA grades, the plant must be inspected by USDA. This involves a minimum of 4 inspections per year for nonfat dry milk plants and 2 per year for butter and cheese plants. Inspection of the plant, even though the products will not be graded, can be requested as can resident grading service under which a resident USDA inspector grades all product output. Use of services is voluntary and the cost is covered by fees assessed to the applicant. In 1974, virtually all of the U.S. butter and nonfat dry milk plants and about half of the cheese plants were inspected by USDA.

At the State level, requirements for inspection of dairy farms and plants vary widely. As of late 1974 all but 4 states had requirements for dairy farm inspection and all but 6 had plant inspection requirements specifically for dairy manufacturing plants. All States have basic food laws covering food items in intra-State Commerce. A federally recommended ordinance for State adoption, covering both farm and plant inspection, has been in existence since 1972.[3] If adopted by all States, these recommended requirements would give a high degree of uniformity to sanitation standards for manufacturing milk.

All food products, including manufactured dairy products, moving in inter-State commerce are subject to the Pure Food and Drug Act, under which plant inspection in case of questionable wholesomeness is administered by the Food and Drug Administration (FDA). Imported dairy products must meet FDA requirements upon entry at the port.

In addition to government regulation, quality control may be exerted by the plants' customers which further market or process dairy products.

Although the quality issue is difficult to appraise, the general conclusion is that foreign producers do not have an important advantage due to a lack of sanitation standards. However, the entire question of effectiveness of sanitation regulation is still an open issue which depends to a large extent on the level of enforcement of quality controls encountered throughout the world. This issue was beyond the scope of this study.

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[3] "Recommended Requirements, Milk for Manufacturing Purposes and Its Production and Processing," The *Federal Register,* Vol. 37, No. 68, Part II, April 7, 1972.

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THE U.S. DAIRY INDUSTRY

This section provides a brief background description of the U.S. dairy industry and some of the important changes, both past and present.

STRUCTURE OF DAIRY FARMING

The structure of dairy farms has changed markedly since 1945, but total milk production has remained about the same. Yields per cow increased from 4,800 to 10,209 pounds from 1945 to 1973, thus offsetting the decline in the national dairy herd—from 25 million to 11 million cows.

The number of farms reporting dairy cows has fallen from 1,986,318 in 1959 to 384,562 in 1973 (table 1). Most noticeable is the rapid disappearance of small herds with 1 to 19 cows, many of which were dropped as farms specialized in nondairy enterprises. Even in 1973, this size group accounted for nearly 45 percent of the herds but produced less than 7 percent of the milk. Dairy farmers with 30 or more cows are producing an increasing share of total milk produced. Only 3.3 percent of U.S. producers had 100 or more cows, but they produced 23.8 percent of total milk in 1973.

TABLE 1.—FARMS REPORTING MILK COWS, NUMBER OF COWS, AND MILK PRODUCTION, BY HERD SIZE, UNITED STATES, SELECTED YEARS, 1959-73 [1]

Herd size (cows)	1959	1964	1969	1973
Farms reporting milk cows (number):				
1–19	1,706,395	947,236	402,022	172,116
Percent	85.9	77.2	64.1	44.8
20–29	148,751	121,336	80,106	62,376
Percent	7.5	9.9	12.7	16.2
30–49	93,982	107,575	91,890	90,576
Percent	4.7	8.8	14.6	23.5
50–99	30,018	40,549	42,426	46,797
Percent	1.5	3.3	6.8	12.2
100 plus	7,172	9,622	11,059	12,697
Percent	.4	.8	1.8	3.3
Total	1,986,318	1,226,318	627,503	384,562
Percent	100.0	100.0	100.0	100.0

[1] Does not include Alaska and Hawaii.

TABLE 1—Continued

Herd size (cows)	1959	1964	1969	1973
Milk cow numbers (thousand cows):				
1–19	(2)	4,489	2,165	1,033
Percent	(2)	28.7	17.6	9.1
20–29	(2)	2,887	1,911	1,493
Percent	(2)	18.4	15.5	13.1
30–49	(2)	3,945	3,404	3,384
Percent	(2)	25.2	27.7	29.7
50–99	(2)	2,571	2,700	2,991
Percent	(2)	16.4	22.0	26.2
100 plus	(2)	1,768	2,112	2,504
Percent	(2)	11.3	17.2	21.9
Total	17,901	15,660	12,292	11,405
Percent	100.0	100.0	100.0	100.0
Milk production (million pounds of milk):				
1–19	(2)	28,766	15,733	7,903
Percent	(2)	22.7	13.6	6.8
20–29	(2)	24,649	17,973	14,390
Percent	(2)	19.4	15.5	12.5
30–49	(2)	35,061	33,861	34,762
Percent	(2)	27.6	29.2	30.1
50–99	(2)	22,143	26,672	30,907
Percent	(2)	17.5	23.0	26.8
100 plus	(2)	16,192	21,718	27,502
Percent	(2)	12.8	18.7	23.8
Total	121,989	126,811	115,957	115,464
Percent	100.0	100.0	100.0	100.0

[2] Not available.

Source: Derived from published U.S. Census of Agriculture and SRS data.

Economies of size, new technology, expansion to improve incomes, and lack of interest of young people to enter dairy farming are among the very complex set of social and economic forces causing these dramatic changes. Many of these forces still exist and will continue the trend to fewer and larger farms, regardless of the U.S. policy on dairy imports.

STRUCTURE OF PROCESSING FIRMS

Like dairy farming, the dairy processing industry has undergone dramatic change. In the past two decades, there has been a rapid decline in the number of plants producing every dairy product except Italian cheese.

From 1957 to 1972, the number of American cheese plants declined from 1,194 to 613; butter plants declined from 2,062 to 475; and nonfat dry milk plants declined from 456 to 180 (table 2). The number of plants producing Italian cheese increased slightly from 167 to 199 during the same period.

Although the number of plants in the smaller size groups has dropped sharply, there has been some increases in the number of larger plants. Also, average output per plant has increased markedly between 1963 and 1972.

The larger dairy product plants, although accounting for a small percentage of total U.S. plants, produced significant proportions of the output. For example, in 1972, 7 percent of the butter plants produced 8 million pounds or more of butter each, accounting for over 50 percent of total output (table 3). In the same year, 11 American cheese plants, or 2 percent of the total, each made more than 20 million pounds of cheese, accounting for 21 percent of total output. Italian cheese plants do not show quite as much concentration in the largest size groupings.

TABLE 2.—NUMBER OF PLANTS MANUFACTURING DAIRY PRODUCTS AND AVERAGE OUTPUT PER PLANT, UNITED STATES SELECTED YEARS, 1957-72

Product	Manufacturing plants					Average output per plant				
				Percent change					Percent change	
	1957	1963	1972	1957-72	1963-72	1957	1963	1972	1957-72	1963-72
	Number			Percent		Thousand pounds			Percent	
Butter	2,062	1,321	475	−77	−64	685	1,075	2,320	+239	+116
American cheese	1,194	924	613	−49	−34	853	1,200	2,682	+214	+124
Swiss cheese	184	133	76	−59	−43	544	902	2,339	+330	+159
Italian cheese	167	184	199	+19	+8	668	1,045	2,574	+285	+146
All cheese	1,603	1,282	901	−44	−30	880	1,273	2,892	+229	+127
Creamed cottage cheese	1,654	1,086	482	−71	−56	419	732	2,103	+402	+187
Nonfat dry milk	456	405	180	−61	−56	3,561	5,200	6,797	+91	+31
Dry whole milk	66	48	32	−52	−33	1,666	1,896	2,351	+41	+24
Canned whole milk	93	68	36	−61	−47	26,962	29,062	32,869	+22	+13
	Number			Percent		Thousand gallons			Percent	
Ice cream	3,395	2,476	1,451	−57	−41	179	275	513	+187	+87
All frozen dairy products	3,447	2,512	1,480	−57	−41	214	352	652	+205	+85
Total manufacturing plants [1]		[2] 6,134	3,312		[3] −46		[2] 10.4	18.8		[3] +81

[1] Million pounds, milk equivalent, fat solids basis.
[2] 1961 data.
[3] 1961-72 change.
Source: Dairy Situation, ERS, USDA, July 1974, page 29.

TABLE 3.—PLANT NUMBERS AND PRODUCT OUTPUT OF LARGEST SIZE DAIRY PLANTS, UNITED STATES, 1972

Product	Size group (annual output per plant) (thousand pounds)	Plants		Production	
		Number	Percent of total	Number (thousand pounds)	Percent of total
Butter	+8,000	33	6.9	556,530	50.5
American cheese	+20,000	11	1.8	345,572	21.0
Swiss cheese	+10,000	6	7.9	[1] 60,000	[1] 33.8
Italian cheese	+20,000	3	1.5	83,975	16.4
All cheese	+20,000	17	1.9	564,498	21.7
Creamed cottage cheese	+5,000	57	11.8	596,915	58.9
Nonfat dry milk	+20,000	12	6.7	299,983	24.5
Dry whole milk	+6,500	3	9.4	35,286	46.9
Canned whole milk	+55,000	6	16.7	418,204	35.3
	Thousand gallons	Number	Percent	Thousand gallons	Percent
Ice cream	+5,000	19	1.3	146,506	19.7
All frozen dairy products	+5,000	38	2.6	296,350	30.7

[1] Estimated based on the minimum production of 10,000,000 pounds per plant.

Source: Dairy Situation, ERS-USDA, July 1974, p. 33.

Plant size distribution for manufactured dairy products varies among regions. Both cheese and butter have relatively more small-sized plants in the North Atlantic Region. The nonfat dry milk industry, in contrast, varies little in plant size distribution among regions.

ROLE OF PRODUCER COOPERATIVES

More than three-fourths of the Nation's milk is sold by farmers through cooperatives. An even higher proportion of the fluid-grade milk is sold by farmers through cooperatives. Over 86 percent of the producers in Federal order markets are members of producer cooperatives.

These cooperatives bear a high degree of the responsibility for providing processors with milk as it is needed. They procure, assemble and coordinate a fluctuating supply with a variable demand. They also provide farm quality control, intermarket transfer, and surplus management. Performing these functions also has resulted in cooperatives becoming more involved in handling reserve supplies for fluid markets which are processed into manufactured dairy products. This central coordination has given rise to much of the increased productivity realized in milk processing and manufacturing. With respect to manufactured products, cooperatives produce a major proportion of the butter and the nonfat dry milk and a smaller but growing proportion of the cheese.

Immediately following the merger movement of the regional cooperatives in the late 1960's, they undertook a consolidation of manufacturing facilities, especially cheese plants, to improve operational efficiency. This activity was especially significant in the West North-central Region, where many small plants were closed and replaced by a

few large efficient plants. Thus, regional cooperatives have a relatively large portion of the larger manufacturing plants.

In addition to consolidating the manufacturing plants, the regional cooperatives have also increased cheese production capacity. In response to market price fluctuations for cheese, the cooperatives converted several butter-powder plants to cheese plants and expanded some existing cheese plants.

The new capacity adds flexibility to plant operations. Industry sources have estimated that 15 percent of the current cheese capacity could be converted back to butter or powder production with a minimum loss of time and expense. This flexibility increases the probability that products will continue to remain in closer price alignment than during 1972–73, when the value of milk going into cheese exceeded its value when used for butter-powder. However, this flexibility of operations is concentrated primarily in the regional cooperative plants. The national cheese corporations and local one-plant cooperatives and private firms are relatively inflexible.

PROCESSING CAPACITY

The domestic dairy industry currently has adequate production capacity to meet domestic needs. Cheese capacity is at least 119 percent of 1973 production; butter capacity, at least 131 percent; and nonfat dry milk capacity, at least 156 percent.

The growth in cheese plants and their need to dry whey has resulted in increased capacity to produce dry milk as a second or alternative product. Most of the dry milk plants are either cheese or butter-powder plants. Cheese plants also produce a significant portion—about 7 percent—of the total butter supply as a byproduct from whey cream.

MARKETING CHANNELS FOR DAIRY PRODUCTS

Cheese

In the past, there were "family-run" cheese plants at practically every crossroads in the cheese production regions. Now, large efficient plants may operate continuously with a milk supply being balanced by smaller, less efficient, standby plants.

The distribution of cheese was traditionally from processors through middlemen called assemblers who performed such necessary functions as cooling, grading, weighing, sorting, storing, and shipping to retailers. This is still true although with fewer and larger plants and fewer buyers, some cheese manufacturers are able to perform this function themselves.

Butter

In the last 30 years, the butter industry has shifted from using farm-separated cream to receiving whole milk. The cream is then separated out to make butter, and the skim milk is used to make nonfat dry milk. The industry also has had perhaps the greatest technological advance of any of the manufactured dairy product industries with the development of the continuous churn. This invention greatly increased efficiency and encouraged large-scale butter production.

The large butter manufacturers as well as cooperative sales agencies are assuming more of the marketing functions and often act as intermediate handlers for the product.

Nonfat Dry Milk

The nonfat dry milk industry underwent rapid growth as increasing demand for nonfat solids bid up the price of nonfat dry milk, making the utilization of solids more profitable. This was an important factor in the transition from farm-separated cream to whole milk deliveries.

In contrast to butter and cheese, which are marketed primarily in original form, nonfat dry milk is primarily used as an ingredient for other dairy and food products. The amount that is packaged for consumer use must first undergo an instantizing process.

The distribution system for nonfat dry milk does not have as many intermediate handlers as the cheese industry. In the case of butter, cooperative sales agencies are the major primary distributors. Also, the Government price support program has traditionally handled large quantities of nonfat dry milk, although quantities sold to the Government in recent years have declined markedly.

SUPPLY AND UTILIZATION OF MILK

The supply and utilization of milk on a milk-equivalent fat-solids basis shows that milk production dropped from about 125 billion pounds in the early 1960's to about 118 billion pounds in the late 1960's and early 1970's. Total civilian consumption did not drop as much and we moved to a higher level of imports starting in 1966. Per capita consumption on a milk-equivalent basis declined steadily from 1960 to 1970 but then leveled off to 1973 (table 4).

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TABLE 4.—MILK SUPPLY AND UTILIZATION IN DAIRY PRODUCTS, UNITED STATES, 1960–73 [1]

[In millions of pounds unless otherwise indicated]

Year	Supply					Utilization							
			Beginning stocks				Exports and shipments			Domestic disappearance			
	Production	Imports	Commercial	Government	Total	Total use	Commercial [2]	USDA [3]	Total	Fed to calves	Military	Civilian consumption, Total	Civilian consumption, Per capita (lb)
1960	123,109	604	3,730	430	127,873	122,473	887	142	1,029	2,548	2,532	116,364	653
1961	125,707	760	4,192	1,208	131,867	121,964	784	148	1,932	2,432	2,472	116,128	641
1962	126,251	795	4,992	4,911	136,949	124,793	796	922	1,718	2,330	2,969	117,776	641
1963	125,202	915	4,338	7,818	138,273	128,585	2,122	3,371	5,493	2,245	2,964	117,883	632
1964	126,967	830	4,132	5,556	137,485	132,195	3,478	3,976	7,454	2,152	3,007	119,582	632
1965	124,180	923	4,317	973	130,393	125,937	1,710	648	2,358	2,061	2,819	118,699	620
1966	119,912	2,791	3,918	538	127,159	122,300	907	301	1,208	1,980	2,376	116,736	604
1967	118,732	2,908	4,813	46	126,499	118,247	593	231	824	1,891	2,117	113,415	581
1968	117,225	1,780	4,258	3,994	127,257	120,550	814	957	1,771	1,821	3,295	113,663	577
1969	116,108	1,621	3,983	2,724	124,436	119,092	942	477	1,419	1,745	2,696	113,232	569
1970	116,962	1,874	3,798	1,447	124,081	118,278	949	41	990	1,696	2,419	113,173	561
1971	118,532	1,346	3,705	2,098	125,681	120,577	1,063	1,963	3,026	1,644	2,031	113,876	558
1972	119,904	1,694	3,565	1,539	126,702	121,204	1,263	884	2,147	1,641	1,795	115,621	560
1973 [4]	115,620	3,884	3,493	2,005	125,002	119,794	1,213	79	1,292	1,598	1,257	115,647	558

[1] Milk equivalent, fat-solids basis.
[2] Includes sales for dollars and government-to-government sales.
[3] Includes Public Law 480 and AID programs.
[4] Preliminary.

Source: Dairy Situation, ERS–USDA, September 1974, p. 16.

PROBLEMS IN MILK PRODUCTION AND MARKETING

Milk is a bulky, highly perishable commodity subject to bacterial contamination. It must be produced and handled under sanitary conditions and must be marketed quickly, either for use in fluid form for direct consumption or for processing into manufactured products.

Milk production is characterized by a market seasonal pattern, with production generally much greater during the spring and early summer than in the fall and winter. On the other hand, consumption of fluid milk is relatively constant throughout the year, despite seasonal fluctuation in price. The seasonal imbalance between supply and demand for fluid milk has created problems in milk pricing and marketing with inherent instability in milk prices. Prices tend to decline sharply in the spring and summer months of heavy production and then increase sharply in the short production season.

MAJOR GOVERNMENT DAIRY PROGRAMS AFFECTING THE INDUSTRY

The instability of milk prices and the resulting marketing problems in the 1930's led to requests from producer organizations for Government intervention to stabilize milk marketing conditions. State milk control agencies were formed. Later at the Federal level, the Agricultural Adjustment Act passed and, finally, the Agricultural Marketing Agreement Act of 1937 provided the authority for Federal milk marketing orders and the establishment of classified pricing systems on a marketwide basis. Following World War II, the dairy price support program was authorized by the Agricultural Act of 1949. Congress and the courts have held that the public interest is served by such Government participation.

Federal Milk Marketing Orders

Milk orders are part of a broad program of marketing agreements and orders authorized by the Agricultural Marketing Agreement Act of 1937. About 60 percent of all milk marketed and about 80 percent of grade A milk is subject to provisions of Federal milk orders.

A key element of milk marketing orders is a classified pricing program which prices the milk used for fluid separately from that used to manufacture dairy products. The basic value of milk is determined by supply and demand of manufacturing milk. The milk used for fluid is priced at varying differentials above the price of milk for use in manufactured dairy products. Grade A milk that is eligible for fluid consumption but not used as fluid is used to produce manufactured dairy products. All dairy farmers that produce grade A milk received at plants regulated under Federal orders share in proceeds from the higher valued fluid sales. Under the Federal order program the returns from fluid milk sales are pooled with the lower returns from grade A milk that is used in the lower valued manufactured products and grade A dairy farmers receive a blend price based on the relative quantities used in each class. The grade B dairy farmers who marketed about 22 percent of total U.S. milk in 1973 receive only the lower manufacturing price. However, the proportion of total U.S. milk production marketed by grade B producers is trending downward.

One effect of classified pricing is to shift more of the total value of milk to that used for fluid than that used for manufacturing. This means that manufactured dairy products can be sold cheaper than without a classified pricing system as long as the price differentials exceed the added cost of producing, transporting, and servicing the fluid milk market.

The Federal order program, in an attempt to avoid frequent chaotic marketing conditions, also provides:

(1) Impartial audits of dairy plants to insure fair and accurate producer payments.

(2) Verification of weights and tests of producer milk.

(3) Collection and distribution of market data.

(4) Procedures, including the public hearing process, to review conflicting points of view and resolve them in the public interest.

The Federal order program has been in continuous operation for over 35 years, and there are now 61 orders covering most major producing and consuming areas outside of California and a few other states which regulate milk marketing under their own programs. These markets were served by about 141,000 dairy farmers in 1973, and the milk delivered by producers was valued at over $4.9 billion.

Requirements for fluid milk and related products, including necessary seasonal and day-to-day reserves to assure that fluid requirements are met, must be supplied from domestic sources due to the high degree of perishability of milk and to its bulky character.

The levels of imports likely to enter the United States under the three trade alternatives studied are at levels which would not interfere with the fluid milk markets includuing their needed reserves.

Dairy Price Support Program

The price support program has helped stabilize milk prices by providing a floor under prices. Prices of butter, nonfat dry milk, and cheese have tended to be at or near the price support level for much of the time the program has been in effect.

The law requires the support of manufacturing milk to producers at 80 to 90 percent of parity through March 31, 1975. After that date, the minimum level of support reverts to 75 percent of parity, as provided in the basic legislation.

In carrying out the program the Commodity Credit Corporation offers to buy carlots of butter, natural Cheddar cheese, and nonfat dry milk at announced prices. The prices are designed to result in U.S. average prices to producers for manufacturing-grade milk at least equal to the announced support price. Thus, when necessary, the Commodity Credit Corporation removes milk from the market in the form of these dairy products which cannot be sold in commercial channels at prices corresponding to the support price for manufacturing milk.

In addition to its purchases of bulk products at announced prices, the Commodity Credit Corporation also may buy butter, cheese, and nonfat dry milk in special forms and in consumer-size packages through competitive bids. These products are bought especially for the various domestic food distribution programs. The purchases are made at prices equal to the announced purchase prices for bulk prod-

ucts plus an allowance for additional costs of processing and packaging.

World Trade in Dairy Products

Milk production for principal producing countries totaled about 841 billion pounds in 1973, up from 791 billion pounds in 1967. The European Economic Community (EEC), the United States, Canada, Australia, and New Zealand produce only about 45 percent of this milk supply but are the major world importers and exporters of dairy products. The dominance of these countries in world trade of dairy products can be seen in table 5.

TABLE 5.—EXPORTS OF BUTTER, CHEESE, AND NONFAT DRY MILK FROM MAJOR SUPPLYING REGIONS, 1971–72

[In millions of pounds]

Exporting region or country	Butter [1]		Cheese		Nonfat dry milk	
	1971	1972	1971	1972	1971	1972
EC–6 [2]	438	179	248	290	306	208
EC–3 [2]	21	32	139	144	148	172
New Zealand [3]	429	428	204	196	278	343
Australia [3]	207	138	84	74	110	93
Canada	([4])	([4])	([4])	([4])	240	115
United States	([4])	([4])	([4])	([4])	[5] 358	[5] 283
Other countries	[6] 228	[6] 179	[7] 309	[7] 311	.....	.....
Total	1,323	956	984	1,015	1,440	1,214

[1] Includes butter equivalent of anhydrous milkfat, butter oil and ghee.
[2] Exports are net of trade within regions and reflect only exports to countries outside the respective regions.
[3] Fiscal year.
[4] Included in "other countries" category.
[5] Primarily donations under Public Law 480, concessional sales, and donations to world food programs.
[6] Includes Canada, United States, Austria, Finland, Norway, Sweden, and Poland.
[7] Includes Canada, United States, Argentina, Austria, Belgium-Luxembourg, Norway, Sweden.

Source: Foreign Agricultural Circular—Dairy-FAS-USDA, FDI–74, Mar. 15, 1974.

LEADING EXPORTERS AND IMPORTERS

New Zealand and Australia, representing a large volume of the export trade among the major trading nations, accounted for about 59 percent of the butter trade, 27 percent of the cheese trade, and 36 percent of the nonfat dry milk trade in 1972. On a milk-equivalent basis (3.7-percent fat-solids), these two countries accounted for about 66 percent of the net world trade between the five major regions and the "other" countries (table 6).

TABLE 6.—PRODUCTION AND TRADE IN DAIRY PRODUCTS, MILK EQUIVALENT BASIS (3.7 PERCENT FAT), 1973

Area	Million pounds		Percentage of—	
	Total milk production	Net exports	Exports	Imports
United States	115,620	−3,230	.....	14
EC–3	50,459	−16,752	.....	72
EC–6	161,970	[1] 6,419	28	.....
Canada	16,886	−3,349	.....	14
Australia	18,293	4,289	18	.....
New Zealand	16,160	11,230	48	.....
Other	[2] 99,111	[3] 1,393	6	.....
Total	478,499	0	100	100

[1] Does not include butter exports to USSR (about 7,000,000,000 pounds of milk in form of butter).
[2] Includes Argentina, Brazil, Colombia, Peru, Uruguay, Japan, Austria, Finland, Greece, Norway, Spain, Sweden, and Switzerland.
[3] Includes countries in footnote 2, plus African and other Asian designations.

Source: Compiled from data in FAS–USDA.

The quantity of milk exports from New Zealand and Australia was also more stable than those from the EC–6, which varied substantially from 1971 to 1972 (table 5). Considering that the EC–9 produces more than 15 times as much milk as New Zealand and 75 percent more milk than the United States (table 7), changes in EC–9 production can have a significant effect on world trade in dairy products. A 1-percent change in EC–9 production is equivalent to a 15-percent change in production in New Zealand or a 13-percent change in Australia so far as the supply of world products is concerned. The EC–3 is a large net importer of dairy products even though most of Denmark's butter and Ireland's butter and cheese is exported to the United Kingdom. Canada produces about the same quantity of milk as Australia but is a net importer.

Fluid milk as a percentage of total domestically produced milk varies substantially among regions from a high of 45 percent in the United States to a low of about 8 percent in New Zealand. Fluid consumption averages about 28 percent of production in the EC–9 countries but varies from 20 to 60 percent between the EC–9 countries. The proportion of milk used for cheese is similar among regions, with the different proportions used for fluid being balanced with the amount used for butter. About 20 percent of the U.S. milk supply is used for butter, while 70 percent of New Zealand's milk is used for butter (table 7).

TABLE 7.—PRODUCTION AND UTILIZATION OF COW'S MILK IN SPECIFIED AREAS, 1970–72

Area and year	Production (billion pounds) [1]	Utilization (percent)				
		Fluid milk [2]	Butter	Cheese	Other uses [3]	Total
Canada:						
1970	18.4	32	42	13	13	100
1972	17.8	34	38	16	12	100
1972	17.7	35	39	16	10	100
United States:						
1970	117.0	46	21	17	16	100
1971	118.5	45	20	18	17	100
1972	119.9	45	19	19	17	100
EC–9:						
1970	201.1	29	34	19	18	100
1971	201.3	29	33	19	19	100
1972	210.9	28	35	19	18	100
Australia:						
1970	17.0	23	59	10	8	100
1971	16.2	24	57	10	9	100
1972	15.8	25	55	11	9	100
New Zealand:						
1970	13.0	8	70	17	5	100
1971	13.5	8	71	14	7	100
1972	13.8	8	71	14	7	100

[1] At average butterfat test in each area.
[2] Includes milk used for cream.
[3] Including milk used for canned products, milk fed to livestock, and manufacture of dry milk.

Source: Computed from data in World Agricultural Production and Trade Statistical Report, January 1973.

PRODUCTION TRENDS IN SIX MAJOR DAIRY AREAS

There appear to be cycles in world milk surpluses due in part to dairy policy within selected countries, primarily the European Economic Community. The dramatic turnaround in the surplus situation after 1970 was primarily a result of a combination of both long-term and short-term policy factors and, to a lesser extent, adverse weather conditions in many important dairy-producing countries.

The EC–6 introduced special short-term measures in 1969–70 to limit milk production. These included measures to keep milk prices constant, schemes to encourage the slaughtering of cows, and incentives for dairy farmers to convert to beef production. When the slaughter scheme was terminated in mid-1970, 235,000 cows had been slaughtered. An additional 270,000 cows had been signed up under the beef diversion scheme when it was terminated in June 1971. These reductions, totaling 505,000 cows, represented 2.4 percent of the EC–6 dairy herd.

When European milk surpluses disappeared in 1971, the schemes that were introduced to reduce milk surpluses were mostly suspended, and many were replaced with policies that encouraged milk production. The EC–6 target price has increased every year beginning with the 1971–72 season, not so much to encourage milk production but for political reasons. In terms of units of account, the milk price increase between 1970–71 and 1974–75 was 30 percent. Recently, a further 5-

percent increase in the 1974–75 target was approved for October to March. In 1972, EC–6 countries introduced policies to improve size and efficiency of dairy farms directly rather than through price supports. These policies include the following provisions:

(1) Farmers who accept a 6-year plan to raise income to the level of nonagricultural workers can receive up to a 5-percent interest subsidy on the necessary investment.

(2) Farmers between 55 and 65 years of age can receive aid towards retirement annuities of up to 900 units of account per year (600 units for a single person).

(3) Farmers may receive free consulting service to aid them in deciding whether to take advantage of (1) and (2) above.

(4) Many small dairy farms will be able to benefit from interest subsidies if located in hill and mountain areas and in certain other naturally disadvantaged areas. (This provision is not yet in effect.)

Milk production in Ireland, Denmark, and the United Kingdom is expected to increase as milk prices in these countries increase to the level in the EC–6. This would be especially true in Ireland, where milk production is projected to annually increase by 4 percent until 1980.

In other European countries, policies have been mixed, but in general, conditions have been favorable to dairy farming, as indicated by the increase in the number of dairy cows in milk (app. C–3).

In Australia and New Zealand, dairy cow numbers in milk have declined in recent years. However, in New Zealand, there has been a major shift from the Jersey breed to the Friesian, which has resulted in fewer cows but about the same milk per acre of land. (Land is the most limited resource in New Zealand.)

In the Scandinavian countries, official policies to reduce milk production had begun many years earlier than in the EC–6. In addition, Denmark's dairy industry became less profitable than other alternatives when the country lost some of its market with the formation of the EC–6. However, Denmark supported its industry in the hopes of better times.

A direct slaughter premium was introduced in Finland in 1970 and in Switzerland in 1968. In Finland, this premium supplemented a land bank and reforestation scheme introduced in 1969. In Switzerland, about 90,000 cows were removed as a result of the slaughter premium before it was discontinued in 1971 with the improvement of market conditions.

In Australia, a Dairy Farm Reconstruction Scheme was introduced in 1970–71 to help small operators either move out of the industry or aid them in getting larger and more efficient. In New Zealand, a dairy beef conversion scheme was introduced in 1969. This scheme caused a decline in dairy cow numbers in 1971 before it was suspended in 1971–72.

In summary, it appears that the surplus milk production of the late 1960's was brought in check when most major dairy-producing countries adopted policies that provided disincentives to produce milk. These policies, plus adverse weather, brought about a concern of milk shortages at prevailing prices in 1971–72. In response to this concern,

most countries increased farm milk prices and, in some cases, adopted other expansionary policies. Consequently, since the 1971 low, dairy cow numbers have increased. Milk production also increased between 1971 and 1974, but the full impact was dampened by high grain prices and in some cases poor weather which led to a short supply in 1974. Policymakers have not as yet instituted policies to control the expansion of milk cow numbers and in some cases are stimulating milk production further through programs primarily designed to improve size and efficiency of dairy farms although consumption is apparently declining.

The three countries that recently joined the European Economic Community, particularly Ireland and the United Kingdom, can be expected to consume less as they adjust to the higher community prices and as consumer subsidies in the United Kingdom are reduced. Consumption may have also peaked in 1968 in several other countries throughout the world.

IMPORT RESTRICTIONS FOR SELECTED COUNTRIES

Import controls are more stringent in the EC–9 than in the U.S., and probably as stringent in Canada and Australia as in the United States. In the EC–9, import levies must be paid by the importer of any dairy products. These levies are set high enough that even New Zealand, without special agreements, could not afford to ship dairy products to the EC–9. Currently, an importer must pay a levy of 70.15 cents per pound on imported butter. Even if he could sell it within the EC–9 for $1.20 per pound at wholesale, the maximum he could pay an exporting country would be 49.85 cents per pound delivered to the EC–9 port. Levies per pound on other dairy products are: nonfat dry milk, 17.07 cents; Cheddar cheese, 48.75 cents; and whole milk powder, 39.37 cents.

In Canada, imports of certain dairy products, particularly butter, dry milk, Cheddar cheese, Colby cheese, and cheese for processing require import licenses which normally are not granted. Relatively small tariffs are applied to most dairy products. In the past few years, butter has been imported to supplement reduced production in Canada. Natural cheeses are on open general licenses, while "traditional" processing cheeses require licenses which are normally granted in the amount consistent with the historical record of the country exporting into Canada. Canada has no controls on ice cream, butterfat-sugar mixtures, chocolate crumb, or lactose.

Dairy imports into Australia are subject to licensing and tariffs. Licenses are difficult to obtain unless a bilateral agreement has been made as in the case of New Zealand dairy products. Basic tariffs are 3.9 cents per pound plus 10 percent ad valorum for all dry milks, 2.9 cents per pound plus 10 percent ad valorum for butter, and 6 to 6.9 cents for cheese curd.

New Zealand licenses fresh milk and cream and casein, but domestic prices are so low that essentially no imports are attracted to that market.

ANALYSIS OF ALTERNATIVE TRADE SITUATIONS

Estimated impacts of dairy imports are presented in this section by contrasting U.S. production, consumption, prices at the farm and consumer levels, and other key variables for (1) continued import quotas, (2) free trade, and (3) an open U.S. market with no import quotas.

ASSUMPTIONS

Certain variables were assumed given for this report (app. table C–5.) Some of the broader assumptions include:

(1) No price support program under free trade or open U.S. dairy market alternatives. However, the price support program is assumed for the continued import quota alternative.

(2) The classified pricing system of the Federal milk marketing order program will remain through 1980, and prices will be based on the Minnesota-Wisconsin manufacturing milk price or approximate equivalent.

(3) Inflation rates in the United States and abroad will be 11, 8, 6, 5, 5, 5, and 5 percent for the years 1974 to 1980, respectively.

(4) The exchange rates of U.S. dollars and foreign currencies of July 15, 1974, will continue until 1980.

(5) Foreign milk will be standardized to the U.S. level of 3.7-percent butterfat to compute milk equivalents in foreign countries.

CONTINUED IMPORT QUOTAS

Section 22 quotas restrict the imports of dairy products to about 1.5 percent of domestic production on a milk-equivalent fat-solids basis as long as no additional authorizations are allowed or larger than usual quantities of nonquota products enter, particulary cheeses subject to the import "price break".[4] These quotas insulate the United States from wide fluctuations in imports, and the U.S. farm and consumer prices are primarily determined by supply and demand conditions within the United States. Therefore, forecasts of the U.S. milk production and civilian consumption are needed to evaluate the implications of continued dairy import quotas. The results provide a base forecast to which the effect of alernative import levels can be compared.

[4] Certain types of cheeses can be imported without quota restrictions if the price per pound, f.o.b. country of origin, is more than the price break (app. B). The price break is the Commodity Credit Corporation's purchase price for Cheddar cheese, rounded to the nearest whole cent, plus 7 cents, or 78 cents per pound in December 1974.

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U.S. Milk Production to 1980

A future expected set of prices that dairy farmers will pay for inputs was developed to compute a "break-even" price for milk (app. table C–5). The break-even price is the farm milk price which in any given year will return farmers a net cash income comparable in purchasing power to that in a base year. This study uses the income-cost data for dairy farms during 1972 as a base year. The all-milk wholesale prices needed to keep a farmer's real net income constant to 1980 are as follows:

1975	$8.90
1976	9.39
1977	9.43
1978	9.73
1979	10.05
1980	10.39

Other factors, such as off-farm opportunities for employment, use of capital, and beef cattle prices which reflect the value of cull dairy cows, young calves, and to a large extent milk cow replacements, can also change U.S. milk production at any given milk price. Evaluating the effects of likely changes in these and other variables on U.S. milk production is important in forecasting. U.S. milk production was estimated by using these break-even prices and assumed changes in the other factors mentioned above in a number of relevant models. The model results were evaluated, and a final set of projected levels of U.S. milk production to 1980 determined (table 8).

Under conditions that the real net cash income will remain constant and thus leave farmers' purchasing power unchanged from the relatively good year dairymen had in 1972, U.S. milk production should increase moderately to 1980. Low cull cow and calf prices during 1975 and 1976 will tend to retain resources in dairying and to increase milk production. Milk cow prices are projected to be relatively low. Therefore, farmers will not cull as heavily, will keep more replacement calves, and will not liquidate herds as rapidly. Also, given normal weather conditions, the prospects for more adequate supplies and lower prices for feed in the latter part of 1975 and beyond are good. Real estate will continue to serve as an inflation hedge and will tend to encourage farmers to retain their land.

U.S. Milk Consumption to 1980

Total U.S. consumption in milk equivalents on a fat-solid basis was estimated to 1980, assuming no change in dairy prices relative to all food prices. Changes in per capita consumption of major dairy products and changes in population and disposable incomes were used as the basis for projecting U.S. consumption to 1980. Models developed from consumer panel and time series data provided estimates that were considered before a final expected level of U.S. consumption was determined.

Supply and Demand Balances and Farm Prices to 1980

After allowing for exports and shipments, milk fed to calves, military consumption, beginning stocks, and fixed imports of 1.7 billion pounds of milk equivalents, supply and demand balances were calculated to 1980 (table 8). Under present import quotas, production is ex-

pected to increase from an estimated 115 billion pounds in 1974 to 119 billion pounds in 1980. Civilian consumption is projected to increase from an estimated 114.0 billion pounds in 1974 to 117.4 billion pounds in 1980, even though per capita civilian consumption is expected to continue to decline (table 8). The all-milk wholesale price (usually about $1.00 more than the manufacturing-grade milk price) is expected to increase from an estimated $8.30 in 1974 to $10.39 in 1980.

The expected supply and demand to 1980 with continued quotas will result in farm prices equal to about 90 percent of parity through 1978 and decline to about 86 percent in 1979 and 1980. Therefore, the Commodity Credit Corporation (CCC) purchases under the price support program are expected to be small through 1978. If the CCC purchase prices are set to reflect less than 85 percent of parity in 1979 and 1980, CCC purchases should still be small. Even though the seasonal average price may be above the support price, some purchases are usually made by CCC during the summer when milk prices are at seasonal lows.

TABLE 8.—U.S. MILK SUPPLY AND UTILIZATION IN DAIRY PRODUCTS, 1971–73 AND ESTIMATES FOR 1974–80, WITH CONTINUED IMPORT QUOTAS [1]

[In millions of pounds unless otherwise indicated]

Year	All milk wholesale price	Supply				Total use	Exports and shipments		Utilization: Domestic disappearance					
											Food use			
											Civilian consumption			
		Production	Imports	Beginning stocks	Total		Commercial [2]	USDA [3]	Fed to calves	Military	Total	Fluid	Manufacturing	Per capita (lbs) [4]
1971.....	$5.87	118,532	1,346	5,803	125,681	120,577	1,063	1,963	1,644	2,031	113,876	52,274	61,602	558
1972.....	6.07	119,904	1,694	5,104	126,702	121,244	1,267	920	1,641	1,795	115,621	53,387	62,234	560
1973 [5].....	7.14	115,620	3,884	5,498	125,002	119,794	1,213	79	1,598	1,257	115,647	56,968	58,679	558
1974.....	8.30	115,000	3,019	5,208	123,227	117,795	1,051	10	1,550	1,143	114,041	51,850	62,191	544
1975.....	8.90	114,800	1,700	5,046	121,546	117,354	1,000	50	1,504	1,100	113,700	51,165	62,535	538
1976.....	9.39	117,000	1,700	4,192	122,892	117,892	1,000	50	1,458	1,000	114,384	50,329	64,055	535
1977.....	9.43	118,000	1,700	5,000	124,700	119,700	1,000	50	1,415	1,000	116,235	49,981	66,254	537
1978.....	9.73	118,600	1,700	5,000	125,300	120,300	1,000	50	1,372	1,000	116,878	50,258	66,620	534
1979.....	10.05	119,000	1,700	5,000	125,700	120,700	1,000	50	1,331	1,000	117,319	49,274	68,045	529
1980.....	10.39	119,000	1,700	5,000	125,700	120,700	1,000	50	1,291	1,000	117,359	49,291	68,068	523

[1] Milk equivalent, fat-solids basis.
[2] Includes sales for dollars and government-to-government sales.
[3] Includes Public Law 480 and AID programs.
[4] U.S. population estimates for 1974–80: 209,700,000, 211,200,000, 213,800,000, 216,400,000, 219,000,000, 221,600,000, and 224,200,000.
[5] Preliminary.

FREE TRADE IN DAIRY PRODUCTS

The social and economic adjustments of free trade for the dairy industries of some countries would be so great that such a situation would be politically unacceptable. However, evaluating the implications of free trade is more than academic—it can assist in understanding the magnitude of adjustments implied and provide background information for trade negotiations and policy formulation.

With free trade in dairy products, prices in relatively high-priced areas would fall and prices in relatively low-priced areas would rise toward a World equilibrium determined by world supply and demand conditions. The differences in prices between countries would reflect only transportation and processing cost differences. Prices would fall to those in the low priced area (plus transportation and processing cost differences) if there were sufficient supplies from those areas to drive the world price to their level. On the other hand, prices would remain at levels near the high-priced areas if the supply potential of the low-priced areas were limited.

This report considers trade among seven major areas: the United States, EC–3, EC–6, Canada, Australia, New Zealand, and "others". It is a partial analysis because it evaluates the implications of free trade in dairy products only and estimates the adjustments in milk prices, production, and consumption that would take place in the various countries if free trade in dairy products were realized.

At prevailing prices, each of the regions in a base period produced and consumed a given quantity of milk and exported or imported the difference, depending on whether production exceeded or was less than consumption. For example, in 1973, consumption in the United States exceeded production, resulting in net imports of 3.2 billion pounds of milk equivalents. The 1973 level of production and consumption in each region served as a base from which changes were forecast to 1980 (table 9).

Changes in either production or consumption directly affect the amount available for export or the amount needed for imports at a given price level. Table 9 summarizes the expected changes in production and consumption by 1980 and the resulting additional quantity available for export from each area.

Changes in milk prices also affect the amount of exports or imports from individual countries. Increased prices will stimulate production and cut consumption and result in either more exports or less imports. The changes in production and consumption due to price changes are taken into account by the estimated percentage change in quantity produced and consumed for a 1-percent change in milk price.

Expected Changes in Supply and Demand in Major Dairy Areas

Changes in supply and demand were forecast for each region assuming a constant real price for milk, to determine any net change in quantity of milk available for manufacture and export. Population and per capita consumption were the primary factors considered in forecasting milk and dairy product consumption, while trends, dairy policy, and the effects of price lags were the primary factors considered in forecasting milk production.

In addition to the effects of the above supply and demand shifters, additional changes in production and consumption in each area would

be brought about due to price changes as prices in each area adjusted to a world price.

TABLE 9.—PRICE LEVELS AND NET EXPORTS, 1973; EXPECTED CHANGES IN MILK PRODUCTION, CONSUMPTION AND QUANTITIES AVAILABLE FOR EXPORT; AND ESTIMATED CHANGE IN SUPPLY AND DEMAND FOR A 1-PERCENT CHANGE IN PRICE IN MAJOR DAIRY AREAS, ASSUMING NO MAJOR CHANGE IN TRADE POLICY

[In millions of pounds unless otherwise indicated]

Dairy area	1973		Expected changes by 1980				
	Price level (dollars)[1]	Exports (+) or imports (—)[2]	Change in production	Change in consumption	Additional available for export or to reduce imports	Estimated percent change in quantity for a 1-percent change in price	
						Supply	Demand
United States	[3] 6.20	—3,230	3,400	1,712	1,688	0.15	—0.3
EC–3	[4] 6.74	—16,752	4,700	—5,307	10,007	.3	—.25
EC–6	[5] 6.74	6,419	11,223	6,567	4,656	[6] .5	—.2
Canada	[7] 7.00	—3,349	—581	250	—831	.15	—.3
Australia	[7] 4.70	4,289	1,904	655	1,249	.2	—.2
New Zealand	[7] 4.13	11,230	1,839	340	1,499	.2	—.2
Other	[7] 6.05	1,393	11,839	11,839	0	.02	—.05

[1] These are relative prices between regions in 1973 and reflect producer prices in U.S. per 100 pounds.
[2] Negative sign denotes level of imports, positive sign denotes level of exports.
[3] U.S. manufacturing-milk price..
[4] This price did not actually reflect 1973 price in the EC–3 but is incorporated because of the EC–3 entering the Common Market and the fact that prices will rise to the EC–6 level (this price is the 1972–73 EC–9 target price).
[5] EC–9 target price for 1972–73.
[6] Estimated for price decreases.
[7] Estimated average producer price.

United States.—Under present import quotas, net changes in production are expected to be positive and slightly greater than the changes in consumption, resulting in more milk available to reduce the quantity of imports at given price levels. The actual level of imports under free trade would not only depend on the above shifts but on how U.S. prices change as they move toward a world level. That is, if the world price were below the U.S. price, production would be expected to decline and consumption increase as the U.S. price adjusted to the world price, and vice versa.

EC–3.—Prior to the EC–3 joining the common market, producer and consumer prices were both substantially less in the EC–3 than in the EC–6. When the EC–3 is fully integrated into the common market, producer and consumer prices will be at the higher community level. Production will respond to this more favorable price in the longer run, while it is expected that consumption will drop as consumers are faced with higher prices. Without the expected policy to reduce production, production likely would increase more than 2 percent per year, with Ireland increasing about 4 percent per year. However, production increases of those magnitudes would contribute to burdensome surpluses in the EC–9. It is expected that EC–9 policies will be instituted to start bringing these surpluses under control by 1976, leaving 1980 production only 4 percent higher than in 1973. On the demand side, total

consumption is expected to drop over 1 percent per year. As a result of changes in production and consumption, the EC–3 will become less dependent on imports between now and 1980 (table 9).

EC–6.—Conditions appear to be right for major expansion in milk output in the EC–6. By 1980, milk production would be expected to be 14 percent above 1973 (about 2 percent per year) if present policies and prices continue and no policies to reduce production are implemented. However, these production increases would, along with the increases in the EC–3, result in burdensome surpluses in the EC–9. As mentioned in the previous EC–3 section, it is expected that EC–9 policies will be instituted to start bringing these surpluses under control by 1976 leaving 1980 production only 4 percent higher than in 1973. However, if free trade is realized, the EC–6 would have lower prices which would substantially reduce the expected 14-percent increase in production. Changes in population and per capita consumption suggest that consumption will increase about 0.6 percent per year to 1980. The conclusion is that the EC–6, under expected policy, would be expected to have surpluses of dairy products that will greatly exceed domestic needs. If lower free trade prices were realized, the production response would be expected to be very marked. But, it should be pointed out again that milk prices are very politically sensitive in the EC–9 and are not likely to be allowed to fall.

Canada.—Production has been falling in Canada despite substantial price increases. It is expected that production will continue to fall about 0.5 percent per year to 1980 while quantity consumed will increase slightly. The result is a further need for imports over the next several years.

Australia.—Dairy policy in Australia is focused on getting the dairy farms on their feet by eliminating the subsidy programs and instituting programs to facilitate adjustments out of dairy, or to enlarge dairy herds to more efficient size. Although milk production has been quite stable over the past few years, the expected shifts in production plus a more favorable price implied by world free trade would result in production increases of about 4 percent per year, starting in 1975. Population changes should outweigh declines in per capita consumption and result in about a 0.7-percent increase in consumption per year. Therefore, Australia is expected to have more milk products available for exports than currently (table 9).

New Zealand.—With constant real prices for milk, New Zealand would be expected to increase production about 2 percent per year, starting in 1976 (10 percent from 1975 to 1980). However, with expected higher world free trade prices for New Zealand dairy farmers, production would expand an additional 2.5 percent or a total of 12.5 percent from 1976 to 1980. Even though more favorable prices are expected under free trade, the potential increase in supply is quite limited, because to increase production dairy cattle would have to replace sheep or beef cattle or there would have to be increased output per acre. Beef production is quite limited in the dairy areas and sheep farmers probably would be reluctant to shift to dairy farming, even though dairy farming has been typically the most profitable enterprise. Also, many sheep production areas of New Zealand are not suited for dairy farming.

Since consumption is expected to increase only about 1 percent per year, New Zealand could expand exports between now and 1980 under free trade conditions (table 9).

"Other" Countries.—Although population in the group of other countries is increasing, these countries probably would not become big importers of dairy products by 1980, even under free trade conditions. In part, this is because of a fairly low response in consumption as prices move to a world free trade level. It is expected that increases in consumption in these "other" countries will about correspond to increases in production, leaving the change in imports fairly low.

Countries not considered in the study.—Uncertainty exists about the demand for dairy products by countries not included in any of the major areas considered in this report. This analysis assumes that they will make no significant changes in imports or exports by 1980, although higher oil revenues, increasing income levels, and more trading with centrally planned governments could materially change the outlook.

However, milk production in these countries is not expected to change so as to increase world supply. But generally, any large increase in imports by these countries would raise world prices and reduce the level of U.S. imports from the level indicated in this study for the free trade situation. The United States could become a major exporter if consumption increased enough in these countries.

U.S. Imports Under Free Trade in Dairy Products

Relative prices, expected shifts in supply and demand, and the expected changes in exports or imports as prices change for the seven dairy areas were incorporated into a free trade model. Results indicated that the United States would, under free trade conditions, import increasing quantities to 1980. By 1980, the expected imports into the United States would be more than twice the 1975 level (table 10).

TABLE 10.—PROJECTED FREE TRADE LEVELS OF EXPORTS AND FARM PRICES FOR MAJOR DAIRY AREAS, 1975–80 [1]

Area and farm prices	1975	1976	1977	1978	1979	1980
United States	−2,920	−2,760	−3,819	−4,319	−4,822	−5,341
EC–3	−15,344	−14,031	−12,126	−10,303	−8,468	−6,618
EC–6	3,104	2,091	898	−558	−2,034	−3,524
Total EC–9	−12,240	−11,940	−11,228	−10,861	−10,502	−10,142
Canada	−4,375	−4,633	−4,771	−4,926	−5,083	−5,240
Australia	5,679	5,659	5,913	6,086	6,269	6,459
New Zealand	12,442	12,463	12,723	12,908	13,102	13,305
Other countries	1,413	1,212	1,183	1,111	1,035	958
Farm prices per 100 pounds (U.S. dollars per 100 pounds):						
World free trade price for importing countries:						
United States, Canada, and EC–9 [2]	7.77	8.04	8.05	8.26	8.48	8.72
U.S. all-milk wholesale price	8.77	9.04	9.05	9.26	9.48	9.72
U.S. break even, all-milk wholesale price [3]	8.90	9.39	9.43	9.73	10.05	10.39
World free trade prices for exporting countries:						
Australia and New Zealand	6.87	7.14	7.15	7.36	7.58	7.82
U.S. price as percent of break even	98.5	96.3	96.0	95.1	94.3	93.5

[1] Milk equivalent, fat-solids basis. Negative numbers are imports; positive numbers are exports.

[2] This world price would be the effective U.S. manufacturing grade milk price.

[3] Price that would maintain same net cash income as dairy farmers realized in 1972.

Canada would increase imports by about 1 billion pounds from 1975 to 1980, reflecting sluggish supply and some increase in total domestic consumption. Australia and New Zealand would both expand exports, but only very moderately, due to land limitations in New Zealand and changes in Australian dairy policy.

The fact that potential for expansion in New Zealand and Australia is quite limited is important in evaluating what would happen under free trade. New Zealand and Australia each produce only about 13 to 16 percent as much milk as is produced in the United States and about 8 percent as much as in the EC–9. The potential for growth in milk production in New Zealand and Australia to 1980 is relatively small and much less than what many in the United States believe—there is no huge reservoir or potential reservoir of milk in Oceania waiting to enter world markets.

The EC–3 would reduce their import requirements by more than 8.7 billion pounds, primarily because of favorable producer prices in the European Economic Community. Also, consumption levels would be lower due to higher consumer prices as a consequence of joining the Community. The EC–6, on the other hand, would receive lower prices, which would substantially reduce production. By 1980, the EC–6 countries would be expected to import 3.5 billion pounds, compared with exports of more than 6 billion pounds in 1973.

Under free trade, U.S. farm prices for milk would fall from about 98.5 percent of break even in 1975 to 93.5 percent of break even in 1980. The break-even price is the price needed to leave real net cash income unchanged from the 1972 level.

However, this study assumes that the U.S. classified pricing program would remain even though it would return U.S. producers a higher price than the world equilibrium price. Under this program, farmers would receive about $1.00 more per 100 pounds of milk than the world equilibrium price. This explains why the U.S. all-milk wholesale price received by farmers exceeds the world price by $1.00 in table 10.

Implications for U.S. Production and Consumption

Imports into the United States in 1980 under free trade would be about three times the current Section 22 import quotas, or about 4.5 percent of U.S. production (table 11). Increased imports would be absorbed into the United States by both reducing production and increasing consumption brought about by lower U.S. prices.

U.S. production would not increase as much as under the continued quotas. Production would be expected to increase to about 117.2 billion pounds before declining slightly to 116.9 billion pounds in the face of increasing imports in 1980. Total consumption of manufactured dairy products (on a milk equivalent basis) would increase 11 percent, while fluid milk consumption would decrease about 4 percent from 1974 to 1980.

The United States would consume more dairy products under free trade than under continued import quotas. Per capita consumption in 1980 would be expected to be 531 pounds of milk equivalents under free trade, compared with about 523 under continued quotas. (Compare table 11 with table 8.)

TABLE 11.—ESTIMATED U.S. MILK SUPPLY AND UTILIZATION IN DAIRY PRODUCTS, WITH FREE TRADE IMPORT LEVELS, 1975–80 [1]

[Million pounds except as noted]

Year	Projected all-milk wholesale price (dollars)	Percent of break-even price (percent)	Supply				Utilization									
								Exports and shipments			Domestic disappearance					
												Food use				
												Civilian consumption				
			Production	Imports	Beginning stocks	Total	Total use	Commercial [2]	USDA [3]	Fed to calves	Military	Total	Fluid	Manufacturing	Per capita [4] (lbs)
1974 [5] ..	8.30	.....	115,000	3,019	5,208	123,227	117,795	1,051	10	1,550	1,143	114,041	51,850	62,191	544
1975 ...	8.77	99	114,107	2,920	5,432	122,459	117,881	1,000	50	1,504	1,100	114,227	51,315	62,912	541
1976 ...	9.04	96	116,396	2,760	4,578	123,734	118,348	1,000	50	1,458	1,000	114,840	50,455	64,385	537
1977 ...	9.02	96	116,801	3,819	5,386	126,006	120,620	1,000	50	1,415	1,000	117,155	50,228	66,927	541
1978 ...	9.25	95	117,118	4,319	5,386	126,823	121,437	1,000	50	1,372	1,000	118,015	50,563	67,452	539
1979 ...	9.54	94	117,239	4,822	5,386	127,447	122,061	1,000	50	1,331	1,000	118,680	49,628	69,052	536
1980 ...	9.72	94	116,947	5,341	5,386	127,674	122,288	1,000	50	1,291	1,000	118,947	49,704	69,243	531

[1] Milk equivalent, fat-solids basis.
[2] Includes sales for dollars and government-to-government sales.
[3] Includes Public Law 480 and AID programs.
[4] U.S. population estimates for 1974–80: 209,700,000, 211,200,000, 213,800,000, 216,400,000, 219,000,000, 221,600,000, and 224,200,000.
[5] Estimated data under current quota system.

OPEN U.S. MARKET

This section discusses some effects anticipated from the elimination of import quotas and the price support program in the United States while countries abroad continue with their most likely dairy policy. The U.S. market is then subject to both subsidized dairy products from abroad and products produced in countries competitive with the U.S. dairy industry. Two situations are considered with respect to entry of subsidized dairy products: one assumes contervailing duties, and the other does not.

Competitive Position of World Supply Areas for the U.S. Market

Number and Sizes of Foreign Farms.—In areas studied the average herd size varied from 105 cows in New Zealand to 4.4 cows in Italy (table 12). Government policy has had much to do with the size of dairy farms in many countries. For example, the German Government has intentionally located industry in rural areas, thus making dairying a part-time possibility. In fact, much of Germany's dairy farming is considered a source of supplementary income for the farmers who also work off the farm. Most of the major supply regions of the world including Germany have placed a good deal of emphasis on increasing herd size and improving efficiency of dairy herds.

Most of the economic and social forces operating in the United States are also very evident abroad. Rapidly rising production costs have created a concern about dairy farmers' ability to continue production. Also, dairy farming has lost its appeal for many young people who have off-farm job opportunities in town that sometimes pay more and certainly have shorter working hours plus vacations.

Inflation of land values and increasing production costs have threatened the "sharemilker" system of farm transfer in New Zealand. Traditionally, young sharemilkers would work on established dairy farms for several years with the objective of saving enough money to start their own dairy farms. However, with the recent level of inflation, farm values have increased more than most sharemilkers can save.

TABLE 12—SIZE OF DAIRY HERDS, YIELD PER COW, AND CONCENTRATES FED PER COW IN SELECTED COUNTRIES

Item	United States 1973	New Zealand [1] 1971–72	Australia [2 3]	Canada [4] 1972	EC-6 [5] West Germany 1971	France 1972	Italy [3]	Belgium 1967	Netherlands 1972	Luxembourg 1972	EC-3 [5] United Kingdom 1970	Denmark 1971	Ireland 1972
Average herd size	29.6	105	66	22	7.7	10.2	4.4	9.7	19.0	12.9	31.4	12.5	18.0
Number of cows (percent of total herds):													
1 to 4	45	17	22	28	13	7	.....	16	2	4	1	3	5
5 to 9					36	21	.....	30	5	16	2	15	22
10 to 19				38	33	43	.....	36	24	39	11	43	64
20 to 29	16			27	12	17	.....	17	28	23	14	20	5
30 to 49	24				5		.....		30	15	26	13	
50 to 74	15	16	19	7	1	12	.....	1	11	3	46	6	4
75 to 149		52	45				.....						
150 plus		15	14				.....						
Total	100	100	100	100	100	100	([6])	100	100	100	100	100	100
Pounds per year:													
Yield per cow (1972)	10,250	6,236	5,943	7,995	8,706	6,519	([6])	8,014	10,044	8,252	9,231	9,375	5,573
Concentrates fed per cow (1971)	4,070	([7])	40	([6])	913	331	786	1,497	2,279	2,232	1,448	1,377	132

[1] New Zealand Dairy Board. The New Zealand Dairy Industry: A Survey, Wellington, 1973.
[2] Australian Dairy Produce Board. Annual Report, Melbourne, 1973. Also Bureau of Agricultural Economics. The Australian Dairy Farming Industry: Report on an Economic Survey, Canberra, 1973.
[3] Exact time period not known.
[4] Department of Industry Trade and Commerce, the Canadian Dairy Industry, Ottawa, Canada, May 1971.
[5] Economics Division, Milk Marketing Board, EEC Dairy Facts and Figures, London, 1973.
[6] Not available.
[7] Insignificant quantity.

Yields per cow are closely related to concentrates fed per cow (table 12). In New Zealand, production per cow is low, but dairying there is a pasture-based industry. A New Zealand dairy farm typically has no buildings except for an open-shed milking parlor and the farm residence. The cows are pastured year round so there are no bay or concentrate storage structures or handling equipment. Most of the machinery inventory is represented by a small tractor and trailer.

In contrast to the separate beef industry in the United States, the EC–9 depends on dairy cows for beef. Beef prices, therefore, directly affect milk production. However, beef prices also significantly affect U.S. milk production despite the two industries being quite separate.

Break-even Prices for Foreign Supplies in the U.S. Market.—The price of butter, nonfat dry milk, and cheese needed by potential supply countries to pay their producers the current milk prices, assemble milk to processing plants, manufacture it into the respective products, move to and load products on ships, and pay transport fees to the United States were computed. These break-even prices at U.S. points of entry are compared with prices for U.S. butter, nonfat dry milk, and cheese at the plant dock to provide an estimate of how competitive the United States is with other supply areas.

In 1974, the EC–6 countries would have needed about 80 cents per pound of butter at U.S. ports to cover all transportation and processing costs and pay for milk at the given farm price (table 13). New Zealand would have needed about 37.5 to 40.3 cents, and Australia, about 46.8 to 49.6 cents per pound at U.S. ports to break even. These are in contrast to a U.S. price of about 64.34 cents needed at the processor's door. Wholesaling and retailing costs are not included in these figures.

TABLE 13.—ESTIMATED COST OF PRODUCING AND SHIPPING BUTTER, NONFAT DRY MILK, AND CHEESE TO THE UNITED STATES FROM SELECTED COUNTRIES, 1974

[U.S. cents per pound of product]

Item	Milk cost [1]	Farm collection	Factory cost [2]	Export cost	Freight to U.S. coast			Total break-even price to U.S. coast			Total U.S. cost at plant
					West	East	Gulf	West	East	Gulf	
Butter:											
Australia	30.28	([3])	8.93	.99	9.40	6.60		49.60	46.80		
New Zealand	24.31	1.38	4.28	.98	9.37	6.58		40.32	37.53		
Netherlands	51.91	1.80	14.26	3.90		8.40	7.10		80.27	78.97	
Germany	59.68	2.67	8.53	3.90		8.40	7.10		83.18	81.88	
Belgium	56.19	2.60	12.49	3.90		8.40	7.10		83.58	82.28	
France	52.62	2.67	12.96	3.90		8.40	7'10		80.55	79.25	
United States	58.38	2.33	3.63								64.34
Nonfat dry milk:											
Australia	29.52	([3])	9.48	.92	5.34	5.05		45.26	44.97		
New Zealand	25.33	1.43	5.31	.92	5.32	5.03		38.31	38.02		
Netherlands	50.42	1.58	4.45	1.00		3.50			60.95		
Germany	53.04	2.37	9.42	1.00		3.50			69.33		
Belgium	49.85	2.21	11.09	1.00		3.50			67.65		
France	46.69	2.37	9.71	1.00		3.50			63.27		
United States	51.88	2.07	4.31								58.26
Cheese (cheddar):											
Australia	36.22	([3])	11.78	1.05	9.53	6.79		58.58	55.84		
New Zealand	29.26	1.81	8.36	1.05	9.50	6.76		49.98	47.24		
Netherlands	67.60	2.13	11.95	1.90		5.40			88.98		
Germany	68.23	3.96	10.81	1.90		5.40			90.30		
Belgium	64.11	2.86	9.78	1.90		5.40			84.05		
United States	66.54	2.77	5.03								74.34

[1] Allocated 37.3 percent to fat, 62.7 percent to skim (1974–75 U.S. price support ratio.) [2] Includes bulk packaging. [3] Included with milk cost.

Sources: For specific countries as follows: Australia—W. D. Scott survey, Sydney, Australia; New Zealand—New Zealand Dairy Board, Wellington, New Zealand; Netherlands—Product Board for dairy products. the Hague; France—Processing costs from communications with dairy experts in Paris and Laval; Belgium—costs from personal interview with a dairy expert in Belgium; Germany—processing cost data from Federal Institute of Dairying in Kiel and Bavarian Dairying Institute at Weihenstephan; United States—Estimates are based on data from dairy processing firm records; assembly cost is based on Federal order market data and producer cooperative records. Export costs and shipping from Europe to the United States for butter and nonfat dry milk were obtained from conversations with export brokerage firms in Europe.

The cost of milk to make butter in 1974 was similar in Europe and the United States but substantially lower in New Zealand and Australia. These costs account for most of the differences in break-even prices. Factory costs in New Zealand and Australia were higher than in the U.S., primarily because of their marked seasonal production of milk. In the winter months of June and July, New Zealand and Australian dairy processing plants are essentially closed, and for many months operate at well below full capacity. Capacity is geared to handle peak production months.

For nonfat dry milk, 1974 break-even prices were about 65 cents per pound for the EC–6, compared with 38 cents for New Zealand and 45 cents for Australia. The U.S. break-even price was only slightly lower than in Europe but substantially higher than for New Zealand and Australia.

The value of milk is allocated 37 percent to butter and 63 percent to nonfat dry milk (the appropriate 1974–75 ratio under the United States price support program) for all countries so that the basic competitive position is better reflected and can be compared between countries. Some flexibility exists in shifting the relative value of fat and solids-not-fat. The competitive position for nonfat dry milk can be improved by about 16 cents per pound for any given country by allocating about 50 percent of the value of milk to butter and 50 percent to nonfat dry milk.

The estimated 1974 break even price for cheese from European countries delivered to U.S. ports was 84 to 90 cents per pound, compared with 56 cents for Australia and 47 cents for New Zealand (table 13). These prices compare with the 74.3 cents per pound needed by U.S. processors.

In all three major dairy products, the U.S. break-even price is lower than in Europe but higher than that in Oceania. Therefore, without export subsidies, European sellers could not profitably export to the U.S. market, but New Zealand and Australian sellers could. The amount of imports that would come into an open U.S. market (no dairy quotas) would, therefore, depend on the amount New Zealand and Australia, with lower break-even prices, would find profitable to send, plus any subsidized surplus from those countries whose break-even price is higher than the U.S. break-even price, namely the EC–9 countries.

Likely Surpluses from the European Economic Community

Political pressure to maintain high milk prices, coupled with a desire to avoid letting production fall short of domestic needs, is expected to result in surplus milk production within the European Economic Community for most years. The EC–9 has the capacity to increase exports to the U.S. market, but it is assumed that high costs of subsidizing will limit the likely amount of surplus.

The EC–6 Since 1968.—After adoption of the common agricultural policy in 1968, butter production in the EC–6 varied from a low of 2.69 billion pounds in 1971 to a high of 3.09 billion pounds in 1973. This is a variation of 0.4 billion pounds, which is equivalent to about 8.8 billion pounds of milk. The greatest year-to-year variation was 0.317 billion pounds (about 7.05 billion pounds of milk) between 1971

and 1972. Both of these variations are below the average butter intervention stocks of 0.542 billion pounds for the 6 year period.[5]

As for butter, the greatest year-to-year variation in total milk production was also between 1971 and 1972. This variation was about 5.73 billion pounds of milk (equivalent to about 256.6 million pounds of butter). This is below the stock level for either January or July for any year.

The period of greatest production variations, 1971–72, coincided with a major policy shift from restricting milk production to increasing it. It is estimated that the change in policy accounted for at least 50 percent of the changes in production.

The EC–6 would have a sufficient hedge against a milk product shortage if it set its milk production goal at about 102 percent of consumption needs.

The exact year-to-year policy goal would of course depend on stock levels, cow numbers, expected feed price, and other variables which could be studied on a year-to-year basis. The surplus 2 percent of production would be about 3.3 billion pounds of milk (equivalent to 147.7 million pounds of butter) for the EC–6 and about 4.3 billion pounds of milk (equivalent to about 198.4 million pounds of butter) for the EC–9, based on 1973 consumption levels. The EC–9 would be expected to sell the surplus into world markets at the highest possible prices so that export subsidies could be held as low as possible. Also, since the EC–9 would probably attempt to develop some other lucrative market, it is expected that they would export about 70 percent of this surplus to the open U.S. market (table 14).

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[5] January 1 stocks.

TABLE 14.—EXPECTED AMOUNTS AVAILABLE FOR EXPORT, AND IMPORTS INTO AN OPEN U.S. MARKET, 1975–80

[In millions of pounds]

Item	1975	1976	1977	1978	1979	1980
Without countervailing duties:						
Amounts available for export:						
EC–9 surplus production over needs for consumption	6,195	8,159	5,000	4,330	4,330	4,330
Combined New Zealand and Australian exports available	15,382	15,312	15,241	15,169	15,097	15,025
New Zealand exports to United Kingdom (concessions under EC–9 accession agreement)	7,016	6,710	5,720	4,510	2,860	990
Amounts likely to enter a U.S. open market from:						
EC–9 [1]	9,248	10,408	7,504	6,188	5,033	3,724
New Zealand and Australia	3,000	3,000	3,000	3,000	3,000	3,000
Total	12,248	13,408	10,504	9,188	8,033	6,724
With countervailing duties: Amounts likely to enter a U.S. open market.	12,248	13,408	10,504	7,858	6,703	5,394

[1] Includes 70 percent of both New Zealand exports to the United Kingdom and the EC–9 surplus production over needs for consumption.

Likely Imports from New Zealand and Australia

Considering the expected production and consumption in New Zealand and Australia, the milk equivalents available for exports would remain about constant to 1980 (table 14). New Zealand will be permitted to export to the United Kingdom under the initial and possibly under future agreements of accession under which the EC–3 joined the European Economic Community. However, this privilege is expected to decrease from about 7 billion pounds of 3.7-percent-fat milk equivalents in 1975 to less than 1 billion pounds in 1980. The net result is that exports available from New Zealand and Australia (Australia has already been excluded from preferential treatment for dairy trade with EC–9) to countries outside the EC–9 will gradually increase from 8.4 billion pounds of 3.7-percent-fat milk equivalents in 1975 to 14,035 million pounds in 1980.

Losing the United Kingdom market on which both New Zealand and Australia heavily depended made both countries place higher value on diversifying their export markets. It is expected that this factor alone would limit exports from Oceania into an open U.S. market to about 20 percent of their total exportable products. This outlook would be especially true with the uncertainty that would undoubtedly exist as to whether the United States would continue to permit an open-market policy that would subject the U.S. dairy industry to likely wide fluctuation in prices and other destablizing conditions.

As long as the manufacturing-grade milk price remained about $2.00 above New Zealand's and Australia's price, an open U.S. market would attract about 20 percent, or 3 billion pounds of 3.7-percent fat milk equivalents from those countries.

Likely Total Imports Without Countervailing Duties

The total level of imports that would probably enter an open U.S. market without countervailing duties is summarized in table 14. With expected surpluses building in the EC–9 and above-mentioned situation in New Zealand and Australia, expected U.S. imports would be 12,248 million pounds of milk equivalents in 1975 and 13,408 million pounds in 1976. U.S. imports would then gradually decline to about 6.7 billion pounds in 1980 as the EC–9 effected policy to reduce surpluses.

Likely Total Imports With Countervailing Duties

Countervailing duties would eliminate direct imports from countries subsidizing their exports. However, the United States, with an open market, would likely receive these imports indirectly. EC–9 surpluses would be exported to countries other than the United States, backing up supplies from Oceania and other countries which would in turn most likely be exported into the U.S. open market. This drying up of New Zealand's and Australia's markets would provide strong incentive, if not require them, to export more than 20 percent of their total exports to the U.S. open market.

Under these conditions, EC–9 countries would find access to the U.S. market virtually cut off. They would be forced to accept a greater risk of having a short supply at home because of the greater cost of disposing of the surplus at prices at or below those of New

Zealand and Australia. As a result, their goal might be a 3.0-billion-pound surplus rather than the 4.3 billion pounds outlined earlier. However, this reduction would not be realized until 1978 when the surplus position of the next few years would be worked out (table 14).

Therefore, with or without countervailing duties, the net difference in imports to the United States would be quite small as long as the United States had an open-market policy.

Comments on the Open-Market Alternative

It is apparent that dairy imports, if our market were opened, would depend to a large extent on policies established by major dairy countries. This makes forecasts more risky and subjective. Therefore, the following very complex circumstances and assumptions needed to analyze this problem should be taken into account when interpreting the results:

(1) As demonstrated in this analysis, the EC–9 has a dominant influence on world dairy trade. Even slight variation in expected EC–9 production could have a significant effect. For example, a variation in EC–9 production of only 1 percent would be equivalent to over 13 percent of New Zealand's production and 19 percent of New Zealand's exports.

(2) The assumption in the analysis that New Zealand would want to diversify markets and would be reluctant to become dependent on one market is somewhat arbitrary, and any deviation from that policy would affect exports to an open U.S. market.

(3) The conclusion of this study that total quantity of milk supplied in the world would expand slightly more than the quantity of milk demanded under the free trade conditions suggests a somewhat tighter market for exports from New Zealand and Australia.

Implications for U.S. Production and Consumption

Under open U.S. market policy, imports of about 12 billion pounds of milk equivalents in 1975 would reduce the U.S. all-milk wholesale price to about $6.94 per 100 pounds—$5.94 per cwt. for manufacturing-grade milk (table 15). The psychological and economic impact of Government policy to open the U.S. market, combined with the lower price, would reduce U.S. production by 3.3 percent in 1975 and another 3.4 percent in 1976. The 1975 price would represent only 78 percent of the break-even price needed by dairy farmers to leave their real 1972 net cash income unchanged. This is about $1.96 less than would be received if the dairy quotas continued (table 8). Consumption in 1975 would respond to more imports and lower consumer prices and be higher by over 6,700 million pounds of milk equivalents—113,700 million pounds with quotas and 120,448 million pounds with an open U.S. market. Per capita consumption would be 32 pounds higher.

TABLE 15.—ESTIMATED U.S. MILK SUPPLY AND UTILIZATION IN DAIRY PRODUCTS, WITH OPEN U.S. MARKET IMPORT LEVELS, 1975–80 [1]

[In millions of pounds unless otherwise indicated]

Year	Projected all-milk wholesale price (dollars)	Percent of break-even price	Supply				Utilization								
								Exports and shipments			Domestic disappearance				
												Food use			
												Civilian consumption			
			Production	Imports	Beginning stocks	Total	Total use	Commercial [2]	USDA [3]	Fed to calves	Military	Total	Fluid	Manufacturing	Per capita (lb) [4]
1974 [5]	8.30	.....	115,000	3,019	5,208	123,227	117,795	1,051	10	1,550	1,143	114,041	51,850	62,191	544
1975	6.94	78	111,000	12,248	5,432	128,680	124,102	1,000	50	1,504	1,100	120,448	53,084	67,364	570
1976	8.26	88	107,194	13,408	4,578	125,180	119,794	1,000	50	1,458	1,000	116,286	50,905	65,381	544
1977	9.00	95	109,267	10,504	5,386	125,157	119,771	1,000	50	1,415	1,000	116,306	50,037	66,269	537
1978	9.61	99	110,341	9,188	5,386	124,915	119,529	1,000	50	1,372	1,000	116,107	50,082	66,025	530
1979	10.22	102	111,160	8,033	5,386	124,579	119,193	1,000	50	1,331	1,000	115,812	48,908	66,904	523
1980	10.90	105	111,629	6,724	5,386	123,739	118,353	1,000	50	1,291	1,000	115,012	48,701	66,311	513

[1] Milk equivalent, fat-solids basis.
[2] Includes sales for dollars and government-to-government sales.
[3] Includes Public Law 480 and AID programs.
[4] U.S. population estimates for 1974–80: 209,700,000; 211,200,000; 213,800,000; 216,400,000; 219,000,000; 221,600,000; and 224,200,000.
[5] Estimated data under current quota system.

Given the expected level of imports that would come into the United States, U.S. milk production would decline to 107.2 billion pounds in 1976, reflecting major adjustments by dairy farmers in 1975 and 1976. The industry, having absorbed the initial shock of more imports and having made much of the adjustment in production, would then be expected to face declining imports because of EC–9 policy designed to reduce surpluses. The decline in imports would raise the U.S. price in 1979–80 above the price that would have existed if the U.S. market had not been opened and dairy quotas continued. (Compare tables 8 and 15.) Since it takes longer for dairy farmers to increase milk production in response to price increases than to reduce production in response to price declines, there is concern that when large quantities of imports replace part of domestic production and later become unavailable prices will rise higher than in the absence of imports.

Relying on foreign supply cannot be overemphasized as a potential disruption for the open U.S. dairy market. For example, if imports were to fall back to 1.7 billion pounds of milk equivalents in 1977, following 2 years of imports equal to 12 to 13 billion pounds in 1975 and 1976, the farm milk price would be expected to increase to $11.09, or $1.66 more in 1977 than if imports had been kept at the 1.7-billion-pound level in 1975 and 1976.

OTHER IMPLICATIONS OF ALTERNATIVE TRADE SITUATIONS FOR THE U.S. DAIRY INDUSTRY

The impacts of dairy imports on the U.S. dairy industry go beyond aggregate production, consumption, and farm prices. The implications for dairy farmers' net cash income, changes in the structure of farming and processing, and the impact on consumer prices are also important considerations, as discussed in this section.

NET CASH INCOME ON REPRESENTATIVE COMMERCIAL DAIRY FARMS

Representative commercial dairy farms that produce milk from which export products would likely be manufactured were selected from Oceania and the EC–6. Structural and financial data were collected for each foreign area, and a representative dairy farm simulated for the 1972 production year. These farms ranged in size from 22 to 108 milk cows and in production capabilities from 5,720 to 10,470 pounds of milk per cow.

Likewise, two U.S. dairy farms were simulated to represent the net income situation for dairy farm operators in New York and Wisconsin. Both of the American farms had a substantially higher production per cow in 1972 than the European and Oceania dairy farms. Likewise, the net cash incomes of the U.S. farms were substantially above their foreign counterparts (table 16). However, relative to industrial wages, the farm incomes were comparable in all the countries.

TABLE 16.—MAJOR STRUCTURAL AND FINANCIAL DATA FOR REPRESENTATIVE COMMERCIAL DAIRY FARMS, 1972 [1]

Item	United States		New Zealand	Australia—Victoria	Netherlands—northern region	France—70- to 99.9-hectare farms	Belgium—Campine region
	New York	Wisconsin					
Structural data:							
Farm records (number)	66	225	254	112	38	98	179
Cows (number per farm)	75	77	108	71	45	58	22
Milk (pounds per cow)	12,715	12,540	5,900	8,240	10,350	5,720	10,470
Financial data (unit of exchange): [2]							
Cash farm receipts	$70,470	$74,475	$NZ16,430	$A16,060	G122,840	FF163,830	BF1,180,155
Cash farm expenses	50,250	46,985	9,260	8,410	87,590	107,305	753,870
Net cash income	20,220	27,490	7,170	7,650	35,250	56,525	426,285
Net cash income (U.S. dollars)	20,220	27,490	8,620	9,135	11,125	11,310	9,740
Milk price (price per 100 pounds)	$6.42	$5.66	$NZ1.81	$A1.92	G19.42	FF30.13	BF272.65
Milk price (U.S. $/cwt.)	6.42	5.66	2.18	2.29	6.13	6.03	6.23
Revenue proportion (percent):							
Milk	86.9	73.3	70.3	69.8	73.6	61.0	53.2
Nonmilk	13.1	26.7	29.7	30.2	26.4	39.0	46.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Expenditure proportion (percent):							
Purchased feed	33.5	21.3	12.0	14.4	33.7	28.5	53.9
Dairy livestock	7.2	6.8	12.5	8.9	9.6	8.4	2.5
Labor	15.1	17.2	18.3	25.4	7.5	6.2	3.8
Fertilizer and lime	5.4	6.9	11.5	7.7	1.8	13.8	6.4
Other	38.8	47.8	45.7	43.6	47.4	43.1	33.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Based on farm records availabel for 1972.
[2] In producers' own currency except where noted.

A model was designed to take the representative dairy farms in their 1972 context and estimate receipts, expenses, and net cash incomes resulting from changes in the price of production inputs and receipt items, primarily changes in the price of milk. Net cash income is defined as the amount remaining when all cash expenses are substracted from cash receipts. This is the amount which farm operators have available to reduce capital obligations, pay living expenses, and use for capital expansion. Net cash income was used as the primary indicator of price impact for the alternative trade policies.

Net Cash Income on U.S. Dairy Farms Under Alternative Trade Situations

Continuing the present policy of restricting dairy imports would have the effect of leaving U.S. milk prices at a level needed by dairymen to maintain their 1972 net cash income positions (table 17). It is estimated that U.S. dairymen will need a price of $10.39 per hundredweight in 1980 to cover increased production costs and maintain the 1972 level of net cash income after accounting for inflation.

Opening the U.S. market to dairy imports would have a substantial impact on the economic viability and financial position of dairy farmers. The initial shock of importing over 12 billion pounds of milk equivalents in 1975 would drive the U.S. milk price to about $6.94 ($5.94 for manufacturing milk), whereas dairymen would need a price of $8.90 ($7.90 for manufacturing milk) to maintain their 1972 real income level. Comparing 1972 net cash income with 1975, Wisconsin farmers would suffer a 59-pecent decrease, and New York farmers an average loss of $420.

This shock would create pressure for marginal farmers and even some efficient farmers with large debt loads to quit dairying, especially when the depressed prices continued into 1976. Aggregate milk production would decline from an estimated 115 billion pounds in 1974 to 111 billion pounds in 1975 and 107.2 billion pounds in 1976.

TABLE 17.—NET CASH INCOMES OF REPRESENTATIVE U.S. DAIRY FARMS UNDER THREE ALTERNATIVE TRADE SITUATIONS, 1972 AND ESTIMATED FOR 1975–80

	Wisconsin [1]						New York [2]					
	Continued quotas		Free trade		Open market		Continued quotas		Free trade		Open market	
	Net cash income [3]	Percent of 1972	Net cash income [3]	Percent of 1972	Net cash income [3]	Percent of 1972	Net cash income [3]	Percent of 1972	Net cash income [3]	Percent of 1972	Net cash income [3]	Percent of 1972
Year:												
1972	27,490	100	.....	.....	.....	.....	20,220	100	.....	.....	.....	.....
1975	27,490	100	24,600	89	11,285	41	20,220	100	14,510	72	—420	([4])
1976	27,490	100	24,380	89	18,840	69	20,220	100	16,575	82	10,370	51
1977	27,490	100	23,500	85	26,800	97	20,220	100	16,800	83	20,500	101
1978	27,490	100	22,800	83	25,200	92	20,220	100	15,855	78	18,540	92
1979	27,490	100	22,800	83	27,060	98	20,220	100	15,680	78	20,450	101
1980	27,490	100	21,970	80	29,095	106	20,220	100	14,540	72	22,520	111

[1] A Wisconsin farm with 77 milk cows.
[2] A New York farm with 75 cows.
[3] Net cash income in constant 1972 dollars.
[4] Negative income in 1975.

Net cash incomes for the remaining farms would be expected to improve from 1977 to 1980 as the expected decline in imports would create a tight market and higher prices in the United States. However, uncertainty over a continuing decline in the level of imports to 1980 would still exist. Also, the chances would be high for large increases in imports after 1980, which would cause further shocks and adjustments.

Because expected milk prices would be higher and imports less, the financial position of U.S. dairy farmers would be better under free trade in 1975 and 1976 than for an open U.S. market but worse than under continued dairy quotas. Wisconsin farmers' net cash income would be about 89 percent of that received in 1972 while the New York farmers' net cash income would be 72 percent of the 1972 figure. However, since imports are expected to gradually increase to 1980, net cash incomes would be below the 1972 level for all years to 1980 (table 17).

Net Cash Income on Foreign Dairy Farms Under Free Trade Conditions

If free trade in dairy products were adopted by the various milk-producing countries, the resultant producer prices would have quite different impacts on the income positions of dairymen throughout the world (table 18). Given that foreign dairymen would face comparable price changes as American dairymen, except for feed inputs, European milk producers would face an extremely harsh situation with free trade prices.[6] The impact would be most severe for the representative Netherlands and Belgium farms which show significantly lower net cash income for all years. The French farm would be moderately better off than neighboring farms, but would still receive a net cash income of only about two-thirds the 1972 level throughout the period. Both expected farm numbers and milk production would decline with free trade, thus creating a moderate dependency on foreign imports.

Milk producers in Oceania would be substantially better off under a free trade policy with net cash income almost tripling that of 1972.

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[6] The 1972–74 feedgrain prices for dairy feed increased 72 percent in the United States, while it increased only 21 percent in the EC–6. From 1975 to 1980, the feedgrain prices are expected to increase the same percentage in Europe as in the United States.

TABLE 18.—NET CASH INCOME IN 1972, AND ESTIMATED NET CASH INCOME WITH FREE TRADE PRICES, SELECTED COUNTRIES, 1975–80

[In U.S. dollars [1]]

	Oceania				Europe					
	New Zealand		Australia		Netherlands		France		Belgium	
	Net cash income	Percent of 1972	Net cash income	Percent of 1972	Net cash income	Percent of 1972	Net cash income	Percent of 1972	Net cash income	Percent of 1972
1972	8,620	100	9,135	100	11,125	100	11,310	100	9,740	100
1975	26,420	306	24,630	270	5,025	45	7,625	67	4,050	42
1976	25,720	298	24,260	266	5,190	47	6,765	60	4,320	44
1977	24,580	285	23,330	255	5,000	45	6,220	55	5,665	58
1978	24,765	287	23,450	257	5,205	47	6,970	62	7,195	74
1979	25,250	293	23,745	260	5,440	49	7,675	68	8,150	84
1980	25,080	291	23,450	257	5,140	46	7,945	70	8,450	87

[1] Constant 1972 dollars.

TABLE 19.—NUMBER OF DAIRY HERDS AND PROPORTION OF PRODUCTION BY HERD SIZE UNDER THREE ALTERNATIVE TRADE SITUATIONS, UNITED STATES, 1973 AND PROJECTED TO 1980

[Number of herds in thousands]

Item	Actual 1973		Projections to 1980					
			Continued quotas		Free trade		Open U.S. market	
	Number of herds	Percent of milk production	Number of herds	Percent of milk production	Number of herds	Percent of milk production	Number of herds	Percent of milk production
Herd size:								
1 to 19 cows	172.1	6.8	20.0	1.0	19.6	1.0	17.8	1.0
20 to 29 cows	62.4	12.5	36.6	7.7	35.7	7.6	30.9	6.9
30 to 49 cows	90.6	30.1	81.8	29.3	79.8	29.0	76.1	29.4
50 to 99 cows	46.8	26.8	50.3	31.3	49.6	31.5	47.1	31.2
100 or more cows	12.7	23.8	14.3	30.7	14.1	30.9	13.8	31.5
Total herds	384.6	100.0	203.0	100.0	198.8	100.0	185.7	100.0
Total milk production (billion pounds)	115.4	.....	119.0	.....	116.9	.....	111.6	.....

IMPACT OF TRADE ALTERNATIVES ON NUMBER AND SIZES OF U.S. DAIRY FARMS

As indicated above, annual U.S. milk production by 1980 is expected to be 119 billion pounds if quotas are continued, 116.9 billion pounds under free trade conditions, and 111.6 billion pounds if the United States opened its market to foreign imports. The estimated 17,300 fewer dairy herds in 1980 under an open U.S. market than under the quota policy tends to be overshadowed by the major structural shift expected between 1973 and 1980, regardless of the dairy import policy. If quotas are continued, an estimated 47 percent of the dairy herds (181,600) will disappear from 1973 to 1980. About 84 percent of those will be herds with less than 20 cows. Only about 20,000 herds with 1 to 19 cows are expected to remain in dairy production by 1980. They will represent about 10 percent of the herds but less than 2 percent of U.S. milk production. In 1980, there would be an estimated 13,600 fewer herds with less than 50 cows and 3,700 fewer herds with 50 or more cows under an open U.S. market policy than under a policy of continued dairy quotas (table 19). The greatest impact of the open-market policy would fall on the smaller herds. Although depressed prices would also exert a great deal of economic pressure on farmers with more than 50 cows, a smaller proportion of the farmers would dissolve their herds than those farmers with fewer cows.

Economies of size and increasing output to improve income levels have been and will continue to be important factors behind a shift to fewer and larger farms. Farm operators located in areas providing good nondairy agricultural alternatives will continue to drop their dairy herds. Also, since small herds tend not to be attractive to the heirs of many farm operators, many of these herds will disappear,

with the milk cows being slaughtered or absorbed into other dairy herds. Much of the land too, will be absorbed into other farms or moved into nonfarm uses.

By 1980, there will be about 10 percent fewer cows yielding 14 percent more milk per cow than in 1973, even if quotas are continued. About 7 percent of all herds, those with 100 or more cows, will account for over 30 percent of U.S. production.

The structural impact of free trade is much less dramatic than for an open U.S. market policy. However, free trade still would be expected to result in 4,200 fewer dairy herds in 1980 than if a continued quota policy were followed.

IMPACT OF TRADE ALTERNATIVES ON THE U.S. PROCESSING SECTOR

If dairy import quotas are continued, cheese production is expected to increase from 2,605 million pounds in 1972 to 3,660 million pounds in 1980 (table 20). During this period, 177 plants are expected to leave the industry. Average production per plant is projected to increase 2,163,000 pounds; from 2,892,000 pounds in 1972 to 5,055,000 pounds in 1980.

The Lake States are expected to maintain over 50 percent of the U.S. cheese production through 1980. The greatest relative growth in cheese production is expected in the Plains and particularly the Southwest, where milk production is projected to surpass fluid needs. However, the Southwest will still generate only 3 percent of total cheese production by 1980.

Butter production is expected to remain about the same from 1975 through 1980, a change from the downward trend in production in recent years. Production was about 1,102 million pounds in 1972 and is expected to be about 896 million pounds in 1975 and 1980.

TABLE 20.—TOTAL U.S. PRODUCTION AND NUMBER AND AVERAGE SIZE OF PLANTS PRODUCING CHEESE AND BUTTER, UNDER THREE ALTERNATIVE TRADE SITUATIONS, 1972 AND PROJECTED, 1975 AND 1980

Item	1972	Projected					
		Continued quotas		Free trade		Open U.S. market	
		1975	1980	1975	1980	1975	1980
Cheese:							
Production (million pounds)	2,605	3,002	3,660	2,950	3,591	2,836	3,342
Number of plants	901	829	724	815	718	768	664
Average plant size (thousand pounds)	2,892	3,621	5,055	3,619	5,001	3,693	5,033
Butter:							
Production (million pounds)	1,102	897	896	880	863	851	779
Number of plants	475	362	267	354	253	340	210
Average plant size (thousand pounds)	2,320	2,478	3,356	2,486	3,411	2,503	3,709

A continued decline in the number of butter processing plants and an increase in the average size of the remaining plants is expected

through most regions of the country. The number of butter plants is expected to decline from 475 in 1972 to 267 in 1980. However, production per plant should increase from 2,320,000 to 3,356,000 pounds.

The impact of more imports on U.S. processing firms depends on the mix as well as the quantity of dairy products imported. This study assumes that imports will be imported as cheese, butter, and nonfat dry milk in the same mix as domestic use of those products. The reasoning behind this assumption is that foreign suppliers, having considerable flexibility in changing the mix of dairy products produced from their raw milk supply, would be expected to try to maximize returns by selecting the most profitable mix of dairy products for export. Should the mix of imports from all foreign suppliers differ substantially from current use in the United States, the relative U.S. market prices of dairy products would shift in favor of products not being imported in as great a proportion as U.S. domestic use. Therefore, foreign suppliers would have an incentive to export that mix of dairy products that would tend to keep U.S. prices of dairy products in balance.[7] In 1980, there would be an estimated 60 fewer cheese plants and 57 fewer butter plants under an open U.S. market than under a policy of continued quotas (table 20). Because of imports, domestic production of cheese and butter would be lower in 1980 under an open U.S. market policy than under a policy of continued quotas. Imports in 1975 would be expected to reach about 24 percent of domestic consumption of cheese and butter under an open-market policy. Total domestic production would be about 9 percent less and consumption about 15 percent more under the open market policy than under a policy of continued quotas.

The shortrun effects of an open U.S. market policy would include the exit of several smaller cheese plants, primarily in the Northeast, Corn Belt, and Lake States. The estimated replacement cost of the capital investment lost as a result of premature plant closures would be $60 million, as there is very little alternate use for these assets. Estimated labor displacement in cheese plants would be over 500 employees.

In the longrun, there would still be fewer plants than with a continuation of present policies, although primarily due to the continuing effect of the large number of plants existing in the shortrun. Also, there would be a comparatively larger increase in production in those regions with close proximity to milk supplies or markets.

The butter industry would also undergo major adjustments in the short run in much the same geographic area as the cheese industry. An additional 22 butter plants could be expected to exit from the butter industry than if present policies continued. The estimated lost value of these facilities based on replacement cost would be $55 million. An estimated 350 plant employees would be displaced.

Since almost 60 percent of the plants manufacturing nonfat dry milk also manufacture butter, any impact on the butter industry would also affect a large portion of the nonfat dry milk industry.

Opening the U.S. market would have a greater impact on producers of certain dairy products. The Section 22 quotas for American cheese, butter plus butter oil, and nonfat dry milk are less than 1 percent of the U.S. production of each dairy product (table 21). In contrast, import quotas for Blue Mold and Swiss cheeses equal almost 20 percent

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[7] The actual changes in relative prices of dairy products depends on how consumers change their consumption in response to those prices.

of U.S. production. In 1972, there were only 14 Blue Mold cheese plants in the United States, six of which were located in Wisconsin. Taking quotas off Blue Mold cheese would therefore have a major impact on this relatively small group of plants. Similarly, there were only 76 plants making Swiss cheeses in the United States in 1974, of which 56 were in Wisconsin, Ohio, and Illinois.

IMPACT OF TRADE ALTERNATIVES ON CONSUMER PRICES

In 1975, consumer prices for dairy products would be about 1 percent lower under a free trade policy and 15 percent lower under an open U.S. market policy than under a policy of continued quotas. The expected retail prices for three major dairy products—fluid milk, American processed cheese, and butter—under these alternative conditions are shown in table 22.

Under the assumptions of this study, consumer prices under an open U.S. market policy would be about 3 percent higher in 1980 than if quotas were continued. This increase would reflect the expected decline in imports to 1980 from the large quantities imported in 1975 and 1976. This situation demonstrates that an open U.S. market would not assure lower consumer prices, and that they may, in the short run, rise above what they would be under continued quotas if foreign supplies were to dry up or become substantially limited. Considerably greater price instability would be expected under an open-market policy.

TABLE 21.—CURRENT SEC. 22 QUOTAS, U.S. PRODUCTION AND QUOTAS AS PERCENTAGE OF U.S. PRODUCTION FOR SELECTED DAIRY PRODUCTS

Item	Thousand pounds		Quota as percent of production
	Quota	Production 1973	
Cheese, quota types:			
American:			
Cheddar	10,037.5	1,672,515	0.96
Other	6,096.6	.....	.....
Italian:			
Original loaves	11,500.1	565,270	2.29
Other	1,494.0	.....	.....
Edam and Gouda:			
Natural	9,200.4	.....	.....
Processed	3,151.0	(2)	(2)
Blue mold	5,017.0	28,549	17.57
Swiss:			
Emmenthaler [1]	20,420.0	164,221	19.28
Gruyere	.....	.....	.....
Process [1]	11,242.0	.....	.....
Other			
Over 0.5 percent fat [1]	40,730.0	.....	.....
Under 0.5 percent fat	8,901.0	.....	.....
Butter	707.0	918,618	.24
Butter oil	1,200.0	.....	.....
Nonfat dry milk (human food)	1,807.0	916,923	.20
Milk equivalents	[3] 1,302,987	115,620,000	[3] 1.13

[1] Quota products at prices below price-break (CCC purchase price rounded to the next whole cent plus 7 cent).

[2] Not available.

[3] Does not include nonquota specialty cheese imports nor that which enters at price-break or over.

Source: Dairy Situation, July 1974, and Production of Manufactured Dairy Products, 1973, June 20, 1974.

TABLE 22.—U.S. CONSUMER RETAIL PRICES FOR FLUID MILK, CHEESE, AND BUTTER, UNDER THREE ALTERNATIVE TRADE SITUATIONS, ACTUAL FOR 1973 AND ESTIMATED 1974–80

Year	Fluid milk (cents per half gallon)			American processed cheese (cents per pound)			Butter (cents per pound)		
	Continued quotas	Free trade	Open U.S. market	Continued quotas	Free trade	Open U.S. market	Continued quotas	Free trade	Open U.S. market
1973	65.4	.....		121.0	.....		91.6	.....	
1974	76.0	.....		143.6	.....		93.0	.....	
1975	77.8	77.2	69.3	147.8	146.6	128.6	98.1	97.0	81.8
1976	80.8	79.3	75.9	154.0	150.5	142.8	103.8	100.9	94.3
1977	82.3	80.6	80.5	157.2	153.2	153.0	105.8	102.3	102.2
1978	85.1	83.1	84.6	163.2	158.4	162.0	110.0	106.1	109.0
1979	88.1	85.9	88.8	169.4	164.4	171.0	114.6	110.5	116.1
1980	91.2	88.3	93.4	176.2	169.5	181.2	119.4	113.7	123.6

Under free trade, consumer retail prices in 1980 would be about 3 percent lower than if quotas were continued. However, as discussed with respect to farm prices, what happens to consumer prices beyond 1980 depends on the efficiency of those farmers and processing plants that would leave the industry as imports increase relative to those farmers and processing plants that would remain. If the farmers and processing plants leaving the industry were less efficient (have higher unit costs) than those remaining, consumer prices should be lower. However, if the farmers and processing plants ceasing production were among the most efficient, consumer prices would not be expected to fall in the long run. A larger proportion of the farmers with 50 or more cows who have achieved most economies of size would remain than those farmers with less than 50 cows. Also, domestic production would tend to be more concentrated in the more efficient plants if imported products were to take part of the U.S. market. Therefore, long-run retail prices should be somewhat lower, with more imports under free trade than under a policy of continued quotas.

APPENDICES

APPENDIX A

The Agriculture and Consumer Protection Act of 1973 amended the Title II Section 205 of the Agricultural Act of 1970 as follows:

Dairy Import Study

(6) Title II is amended by adding at the end thereof the following:

"Sec. 205. The Secretary of Agriculture is authorized and directed to carry out a comprehensive study to determine the effect upon domestic dairy producers, handlers, and processors and upon consumers of *increases in the level of imports, if any, of dairy products and report* his findings, together with any recommendations he may have with respect to import quotas or other matters, to the Congress of the United States no later than January 1, 1975. For the purposes of this section dairy products include (1) all forms of milk and dairy products, butterfat, milk solids-not-fat, and any combination or mixture thereof; (2) any article, compound or mixture containing five per centum or more of butterfat, or milk solids-not-fat, or any combinations of the two; and (3) lactose, and other derivatives of milk, butterfat, or milk solids-not-fat, if imported commercially for any food use. Dairy products do not include (1) casein, caseinates, industrial casein, industrial caseinates, or any other industrial products, not to be used in any form for any food use, or an ingredient of food; or (2) articles not normally considered to be dairy products, such as candy, bakery goods, and other similar articles."

APPENDIX B

Section 22 [1] of the Agricultural Adjustment Act of 1933 as Reenacted and Amended

(a) Whenever the Secretary of Agriculture has reason to believe that any article or articles are being or are practically certain to be imported into the United States under such conditions and in such quantities as to render or tend to render ineffective, or materially interfere with, any program or operation undertaken under this title or the Soil Conservation and Domestic Allotment Act, as amended, or section 32, Public Law Numbered 320, Seventy-fourth Congress, approved August 24, 1935, as amended, or any loan, purchase, or other program or operation undertaken by the Department of Agriculture, or any agency operating under its direction, with respect to any agricultural commodity or product thereof, or to reduce substantially the amount of any product processed in the United States from any agricultural commodity or product thereof with respect to which any such program or operation is being undertaken, he shall so advise the President, and, if the President agrees that there is reason for such belief, the President shall cause an immediate investigation to be made by the United States Tariff Commission, which shall give precedence to investigations under this section to determine such facts. Such investigation shall be made after due notice and opportunity for hearing to interested parties, and shall be conducted subject to such regulations as the President shall specify. (7 U.S.C. 624(a).)

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[1] See also section 202(a) of the Agricultural Act of 1956, Section 22 was added by the Act of August 24, 1935 (49 Stat. 773). As originally enacted, action under this section could be taken only with respect to articles the importation of which was found to be adversely affecting programs or operations under the Agricultural Adjustment Act of 1933. Section 22 has been amended several times and was revised in its entirety by section 3 of the Agricultural Act of 1948 (62 Stat. 1247) and again by section 3 of the Act of June 28, 1950 (64 Stat. 261). Regulations governing investigations under this section are set forth in Executive Order 7233, dated November 23, 1935, and in 19 CFR 201, 204.

(b) If, on the basis of such investigation and report to him of findings and recommendations made in connection therewith, the President finds the existence of such facts, he shall by proclamation impose such fees not in excess of 50 per centum ad valorem or such quantitative limitations on any article or articles which may be entered, or withdrawn from warehouse, for consumption as he finds and declares shown by such investigation to be necessary in order that the entry of such article or articles will not render or tend to render ineffective, or materially interfere with, any program or operation referred to in subsection (a) of this section, or reduce substantially the amount of any product processed in the United States from any such agricultural commodity or product thereof with respect to which any such program or operation is being undertaken: *Provided*, That no proclamation under this section shall impose any limitation on the total quantity of any article or articles which may be entered, or withdrawn from warehouse, for consumption which reduces such permissible total quantity to proportionately less than 50 per centum of the total quantity of such article or articles which was entered, or withdrawn from warehouse, for consumption during a representative period as determined by the President; *And provided further*, That in designating any article or articles, the President may describe them by physical qualities, value, use, or upon such other bases as he shall determine.

In any case where the Secretary of Agriculture determines and reports to the President with regard to any article or articles that a condition exists requiring emergency treatment, the President may take immediate action under this section, without awaiting the recommendations of the Tariff Commission, such action to continue in effect pending the report and recommendations of the Tariff Commission and action thereon by the President.[2] (7 U.S.C. 624(b).)

(c) The fees and limitations imposed by the President by proclamation under this section and any revocation, suspension, or modification thereof, shall become effective on such date as shall be therein specified, and such fees shall be treated for administrative purposes and for the purposes of section 32 of Public Law Numbered 320, Seventy-fourth Congress, approved August 24, 1935, as amended, as duties imposed by the Tariff Act of 1930, but such fees shall not be considered as duties for the purpose of granting any preferential concession under any international obligation of the United States. (7 P.S.C. 624(c).)

(d) After investigation, report, finding, and declaration in the manner provided in the case of a proclamation issued pursuant to subsection (b) of this section, any proclamation or provision of such proclamation may be suspended or terminated by the President whenever he finds and proclaims that the circumstances requiring the proclamation or provision thereof no longer exist or may be modified by the President whenever he finds and proclaims that changed circumstances require such modification to carry out the purposes of this section. (7 U.S.C. 624(d).)

(e) Any decision of the President as to facts under this section shall be final. (7 U.S.C. 624(e).)

(f) [3] No trade agreement or other international agreement heretofore or hereafter entered into by the United States shall be applied in a manner inconsistent with the requirements of this section. (7 U.S.C. 624(f).)

I. Summary—Section 22

A. *Authority.* Section 22 of the Agricultural Adjustment Act, as amended, directs the Secretary of Agriculture to advise the President whenever he has reason to believe that any article or articles are being imported under such conditions and in such quantities as to:

(a) Render or tend to render ineffective or materially interfere with any price support or other program, relating to agricultural commodities, undertaken by the Department of Agriculture, or

(b) To reduce substantially the amount of any product processed in the United States from any agricultural commodity or product thereof with respect to which any such program or operation is being undertaken.

If the President agrees there is reason for such belief, he directs the Tariff Commission to conduct an investigation including a public hearing, and to submit a report to him of its findings and recommendations. The President is authorized, based on such findings, to impose such fees or quotas in addition to

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[2] Paragraph added by section 104 of the Trade Agreements Extension Act of 1953, 67 Stat. 472.

[3] The provisions of this subsection (f) were substituted for earlier provisions by section 8(b) of the Trade Agreements Extension Act of 1951, approved June 16, 1951, 65 Stat. 72, 75.

the basic duty as he shall determine necessary. The additional fees may not exceed 50 percent ad valorem and the quotas proclaimed may not be less than 50 percent of the quantity imported during a previous representative period, as determined by the President.

Furthermore, the President may designate the affected article or articles by physical qualities, value, use, or upon such other basis as he shall determine.

Whenever the Secretary of Agriculture reports to the President that a condition exists requiring emergency treatment, the President may take action without awaiting the report of the Tariff Commission. Any such action by the President shall continue in effect pending the report and recommendations of the Tariff Commission and action thereon by the President.

No trade agreement or other international agreement entered into at any time by the United States may be applied in a manner inconsistent with the requirements of Section 22.

B. *History.* Section 22 was originally added to the Agricultural Adjustment Act of 1933 by the Act of August 24, 1935. It has been amended several times and was revised in its entirety by Section 3, of the Agricultural Act of 1948, and again by Section 3, of the Act of June 28, 1950. It was further amended by Sections 8(b) and 104 of the Trade Agreements Extension Acts of 1951 and 1953, respectively. Since Section 22 was enacted, import controls have been imposed on specified dairy products.

D. *Specified Dairy Products.* The import quotas for the commodities listed under subsection 1 of this section are administered by the Import Branch, Foreign Agricultural Service, United States Department of Agriculture, Washington, D.C. 20250. The quota for each commodity is prorated among eligible applicants to whom import licenses are issued under the provisions of Import Regulation 1, its revisions and amendments.

The import quotas for the commodities listed under subsection 2 of this section are administered on a first-come, first-served basis by the Bureau of Customs.

Quotas were established or revised by the following Presidential Proclamations which became effective on the dates listed:

Proclamation number and effective date	*Commodities affected*
3019 July 1, 1953	Established quotas for butter, dried whole milk, dried buttermilk and whey, dried cream, dried skimmed milk, malted milk and Cheddar cheese, items 1(a) through 1(g); Edam & Gouda cheese, item 1(i); Blue-mold cheese, item 1(k); and Italian-type cheese in original loaves, item 1(1)(i).
3178 April 15, 1957	Established quota for butter substitutes, item 2(d).
3193 August 7, 1957	Established a zero quota for some articles containing extractable butterfat, item 2(e)(i).
3347 July 1, 1960	Increased the quota for Edam & Gouda cheese under item 1(i) from 4,600,200 pounds and for Italian-type cheese in original loaves under item 1(1)(i) from 9,200,100 pounds.
3460 July 1, 1962	Increased the quota for Blue-mold cheese under item 1(k) from 4,167,000 pounds.
3790 June 30, 1967	Established quotas for American-type cheese, item 1(h); Natural Cheddar cheese, item 2(a)(1) milk and cream, item 2(b); some articles containing extractable butterfat, item 2(e)(ii); increased the quota for Cheddar cheese under item 1(g) from 2,780,100 pounds.
3856 June 10, 1968	Established temporary quotas on evaporated and condensed milk under item 2(c) (i) and (ii).
3870 September 24, 1968	Established temporary quotas on Processed Edam & Gouda cheese, item 1(J); Emmenthaler cheese, item 1(o)(i); Gruyere-process cheese, item 1(o)(ii); and "Other" cheese, nspf, item 1(n)(i).

Proclamation number and effective date	*Commodities affected*
3884 January 6, 1969	Established quotas for Italian-type cheese, not in original loaves, item 1(1)(ii); Chocolate crumb, item 1(m)(i); and made permanent the quotas established under Presidential Proclamations 3856 and 3870.
4026 December 31, 1970	Established quotas for low-fat, "Other" cheese, nspf, item 1(n)(ii); low-fat Chocolate crumb, item 1(m)(ii); animal feeds, item 2(f); ice cream, item 2(g); and revised the quota for "Other" cheese under item 1(n)(i) from Iceland.
4138 June 6, 1972	Increased the quotas for Gruyere-process cheese, item 1(o)(ii) from 3,289,000 pounds; Emmenthaler cheese, item 1(o)(i) from 4,271,000 pounds; and "Other" cheese, nspf, item 1(n)(i) from 25,090,000 pounds; (increased quotas effective January 1, 1973).

1. The following quotas are administered by the U.S. Department of Agriculture. Country quotas are shown if provided for in the applicable Presidential Proclamation. For other products, country shares are determined on the basis of base period importations by eligible importers.

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(a) Butter	1,411,525	1930–34	707,000
Subdivided as follows:			
New Zealand			332,000
Denmark			212,000
Other countries as follows: Argentina, Australia, Canada, Netherlands, Norway, Sweden, and Switzerland (aggregate)			163,000
(b) Dried whole milk	13,055	1948–50	7,000
(c) Dried buttermilk and whey	991,283	1948–50	496,000
(d) Dried cream	<500	1948–50	500
(e) Dried skimmed milk	3,613,279	1948–50	1,807,000
(f) Malted milk, and articles of milk or cream	11,418	1948–50	6,000
(g) Cheddar cheese, and cheese and substitutes for cheese containing, or processed from, Cheddar cheese	5,490,262	1961–65	8,812,500
Subdivided as follows:			
Australia			1,696,150
Canada			612,352
Ireland			562,250
New Zealand			5,502,498
Sweden			130,850
Other countries as follows: Austria, Belgium, Bulgaria, Denmark, Israel, Italy, Netherlands, Portugal, Switzerland, United Kingdom, and West Germany (aggregate)			308,400

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(h) American-type cheese, including Colby, washed curd, and granular cheese (but not including Cheddar) and cheese and substitutes for cheese containing, or processed from, such American-type cheese	12,193,200	1961–65	6,096,600
Subdivided as follows:			
Australia			1,680,000
Ireland			560,000
New Zealand			3,360,000
Sweden			125,000
Other countries as follows: Austria, Belgium, Bulgaria, Italy, Denmark, Israel, Netherlands, Portugal, Switzerland, United Kingdom, and West Germany (aggregate)			371,600
(i) Edam and Gouda cheese	1,831,085	1948–50	9,200,400
(j) Cheese and substitutes for cheese containing, or processed from, Edam and Gouda cheese	2,729,591	1965–67	3,151,000
Subdivided as follows:			
Denmark			1,714,000
Ireland			331,000
Netherlands			169,000
Norway			368,000
West Germany			513,000
Other countries			56,000
(k) Blue-mold (except Stilton) and cheese and substitutes for cheese containing, or processed from, Blue-mold cheese	2,066,000	1948–50	5,016,999
(l) Italian-type cheeses, made from cow's milk (Romano made from cow's milk, Reggiano, Parmesano, Provoloni, Provelette, and Sbrinz):			
(i) In original loaves	8,121,987	1948–50	11,500,100
(ii) Not in original loaves and cheese and substitutes for cheese containing, or processed from, such Italian-type cheeses	680,437	1965–67	1,494,000
Subdivided as follows:			
Argentina			1,347,000
Italy			104,500
Australia			13,700
Other countries			28,800

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(m) Chocolate provided for in item 156.3040, pt. 10, schedule 1 of the Tariff Schedules of the United States:			
(i) Chocolate containing over 5.5 percent by weight of butterfat	10,002,165	1965–67	17,000,000
Subdivided as follows:			
Ireland			9,450,000
United Kingdom			7,450,000
Netherlands			100,000
(ii) Chocolate containing 5.5 percent or less by weight of butterfat	159,500	1967–69	4,680,000
Subdivided as follows:			
Ireland			3,750,000
United Kingdom			930,000
(n) Cheeses and substitutes for cheese provided for in items 117.75 and 117.85, pt. 4C schedule 1 of the Tariff Schedules of the United States (except cheese not containing cow's milk; cheese, except cottage cheese, containing no butterfat and articles within the scope of other import quotas provided for in this part); all the foregoing, if shipped otherwise than in pursuance to a purchase, or if having a purchase price per pound, f.o.b. country of origin, less than the "pricebreak".[1]			
(i) Cheese or substitutes for cheese containing over 0.5 percent by weight butterfat			40,730,000
	[2] 17,617,700	1967	25,090,000
	[3] 15,640,000	1970	15,640,000
Subdivided as follows:			
Belgium			469,000
Denmark			16,820,000
Finland			1,239,000
France			2,882,000
Iceland			649,000
Ireland			161,000
Netherlands			422,000
Norway			356,000
Poland			2,064,000
Sweden			1,707,000
Switzerland			215,000
United Kingdom			496,000
West Germany			2,148,000
New Zealand			7,556,000
Canada			2,670,000
Portugal			227,000
Austria			199,000
Italy			17,000
Israel			145,000
Other countries			288,000

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(ii) Cheese or substitutes for cheese containing 0.5 percent or less by weight of butterfat	993,074	1967–69	8,901,000
Subdivided as follows:			
Denmark			6,680,000
Iceland			64,300
Ireland			756,500
Poland			385,600
United Kingdom			791,000
West Germany			100,000
Australia			123,600
Other countries			None
(o) Swiss or Emmenthaler cheese with eye formation; Gruyere-process cheese; and cheese and substitutes for cheese containing, or processed from, such cheeses; all the foregoing, if shipped otherwise than in pursuance to a purchase, or if having a purchase price per pound, f.o.b. country of origin, less than the "pricebreak": [1]			
(i) Swiss or Emmenthaler cheese with eye formation			20,420,000
	[2] 6,904,833	1967	4,271,000
	[3] 16,149,000	1970	16,149,000
Subdivided as follows:			
Austria			8,222,000
Denmark			3,396,000
Finland			6,111,000
Norway			1,672,000
Switzerland			269,000
West Germany			292,000
Netherlands			210,000
Israel			60,000
Other countries			188,000
(ii) Other than Swiss or Emmenthaler with eye formation			11,242,000
	[2] 6,277,362	1967	3,289,000
	[3] 7,953,000	1970	7,953,000
Subdivided as follows:			
Austria			1,406,000
Denmark			3,435,000
Finland			1,606,000
Switzerland			2,234,000
West Germany			1,818,000
Ireland			210,000
Norway			82,000
Portugal			275,000
Other countries			176,000

Footnotes at end of table, p. 64.

2. THE FOLLOWING QUOTAS ARE ADMINISTERED BY THE BUREAU OF CUSTOMS U.S. DEPARTMENT OF TREASURY

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(a) Natural Cheddar cheese, the product of Canada, made from unpasteurized milk and aged not less than 9 months which prior to exportation has been certified to meet such requirements by an official of the Canadian Government	None		1,225,000
(b) Milk and cream, fluid or frozen, fresh or sour, containing over 5.5 percent but not over 45 percent by weight of butterfat, the product of New Zealand	[4] (962,200)	1962–66	[4] (1,500,000)
(c) Milk and cream, condensed or evaporated, classifiable for tariff purposes under items 115.30, 115.35, and 115.40, pt. 4A, schedule 1 of the Tariff Schedules of the United States:			
(i) Evaporated in airtight containers	1,312,000	1967	1,312,000
Other	None		None
Subdivided as follows:			
Canada			70,000
Denmark			11,000
Netherlands			1,209,000
West Germany			22,000
(ii) Condensed in airtight containers	4,074,000	1967	4,074,000
Other	5,000	1967	5,000

Subdivided as follows:	In airtight containers	Other
Australia	202,000	
Canada	2,192,000	5,000
Denmark	1,334,000	
Netherlands	338,000	
Other countries	8,000	

	Years	Pounds
(d) Butter substitutes containing over 45 percent of butterfat provided for in item 116.30, pt. 4B, schedule 1, of the Tariff Schedules of the United States, and butter oil however provided for elsewhere in the Tariff Schedules	1956	1,200,000
1,750,027		

2. THE FOLLOWING QUOTAS ARE AMINISTERED BY THE BUREAU OF CUSTOMS U.S. DEPARTMENT OF TREASURY—Continued

Commodity	Representative period average annual imports: Pounds	Representative period average annual imports: Years	Annual import quota—Jan. 1 to Dec. 31 (pounds)
(e) Articles containing over 5.5 percent by weight of butterfat, the butterfat of which is commercially extractable, or which are capable of being used for any edible purpose, including articles imported packaged for distribution in the retail trade and ready for use by the purchaser at retail for an edible purpose or in the preparation of an edible article (except those articles already subject to quotas)			
(i) Over 45 percent by weight of butterfat.....	None		None
(ii) Over 5.5 percent but not over 45 percent by weight of butterfat and classifiable for tariff purposes under item 182.92 or 182.95 pt. 15B, schedule 1 of the Tarriff Schedules of the United States.....	2,122,400	1961–65	2,480,000
Subdivided as follows:			
Australia.....			2,240,000
Belgium & Denmark (aggregate).....			240,000
(f) Animal feeds containing milk or milk derivatives, classified under 184.75, part 15C, schedule 1, of the Tariff Schedules of the United States.....	4,129,533	1967–69	16,300,000
Subdivided as follows:			
Ireland.....			12,060,000
United Kingdom.....			185,000
New Zealand.....			3,930,000
Australia.....			125,000
	Gallons	Year	Gallons
(g) Ice cream, as provided for in item 118.25 of pt 4D, schedule 1 of the Tariff Schedules of the United States.....	862,642	1967–69	431,330
Subdivided as follows:			
Belgium.....			243,650
New Zealand.....			155,680
Denmark.....			3,450
Netherlands.....			27,600
Jamaica.....			950

[1] The "pricebreak" is the Commodity Credit Corporation purchase price for Cheddar cheese, rounded to the nearest whole cent, plus 7 cents.

[2] Amount extrapolated from Census data as being under 47 cents per pound f.o.b. country of origin.

[3] Amount extrapolated from Census data as being 47 up to 62 cents per pound f.o.b. country of origin.

[4] Gallons.

APPENDIX TABLE C-1.—HYGIENIC QUALITY CONTROL FACTORS AT FARM AND PROCESSOR LEVELS IN MAJOR DAIRY-PRODUCING COUNTRIES, 1973-74

Quality control factor	Australia	Austria	Belgium	Canada	Denmark	France	West Germany
Farm level:							
License required	Yes	No	No	No		No	No.
Farm inspection required	Yes	Yes	Yes	Yes	Yes	No	Yes.
Level of inspection agency	State [1]	Government.[2]	Government.[2]	State [1]	Trade [3]	([4])	State.
Frequency of inspection	([5])	([5])	([6])	Month	Week	([7])	([8]).
Percent of herds free of:							
Tuberculosis	([4])		100	100	100	98-99	100.
Brucellosis	([4])		100	Most	100	Few	100.
Free of foot and mouth disease and rinderpest 1973.	Yes	No	No	Yes	No	No	No.
Farm price adjusted by quality	No	Yes		No	Yes	No	Yes.
Processor level:							
Plant inspection required	Yes	Yes	Yes	Yes	Yes	Yes	Yes.
Level of inspection agency	Government.[2]	Government.[2]	Government.[2]	State [2]	Government.[2]	Trade [3]	Trade.[3]
Frequency of inspection or testing	([5])	4 per year	([6])	Month	Week	3 per month	2-3 month.
Selected quality measures:							
Maximum bacterial count (millions/ml.):							
Highest quality manufactured milk.	([4])	([4])	([4])	([4])	<0.2	<0.1	([4]).
Lowest quality for exported products.					<2.0	<0.5	([4]).
Methylene blue test (min. hrs.):							
Highest quality manufactured milk.	([4])	([4])	([4])	([4])	5	4	4½.
Lowest quality for exported products.	([4])	([4])	([4])	([4])	1	2	2.

Footnotes at end of table, p. 66.

APPENDIX C

APPENDIX TABLE C–1.—HYGIENIC QUALITY CONTROL FACTORS AT FARM AND PROCESSOR LEVELS IN MAJOR DAIRY-PRODUCING COUNTRIES, 1973–74—Continued

					United States	
	Ireland	Italy	Netherlands	New Zealand	Ungraded products; no inspection requested	Graded products or insdection requested
Farm level:						
License required	Yes	No	No	Yes	No	No.
Farm inspection required	Yes	No	Minor	Yes	(9)	(9).
Level of inspection agency	Local [10]	(4)	Government [2]	Government [2]	(11)	(11).
Frequency of inspection	(8)	(7)	2 weeks	(8)	(4)	(4).
Percent of herds free of:						
Tuberculosis	100	60	100	(4)	99	99.
Brucellosis	Part	30–40	100	Part	99	99.
Free of foot and mouth disease and rinderpest 1973	Yes	No	No	Yes	Yes	Yes.
Farm price adjusted by quality	Yes	No	Yes	Yes	No	No.
Processor level:						
Plant inspection required	Yes	No	Yes	Yes	Yes	Yes.
Level of inspection agency	Local [10]	(4)	Trade [3]	Government [2]	FDA	USDA.
Frequency of inspection or testing	(4)	(4)	3 weeks	(5)	(8)	(12)
Selected quality measures:						
Maximum bacterial count (millions/ml.):						
Highest quality manufactured milk	(13)	(6)	(6)	(4)	(7)	0.5.
Lowest quality for exported products	(13)	(6)	(6)	(4)	(7 14)	3.
Methylene blue test (min. hrs.):						
Highest quality manufactured milk	(3)	(6)	(4)	(4)	(7)	4½.
Lowest quality for exported products	(3)	(6)	(4)	(4)	(7)	2¼.

[1] State is approximate U.S. State equivalent.
[2] Government is approximate U.S. Federal equivalent.
[3] Trade is a trade organization under government supervision or monitoring.
[4] Not available.
[5] Any reasonable time as deemed by an inspector.
[6] Not specified.
[7] Not applicable.
[8] As required.
[9] No Federal requirement; only some States require State inspection. Use of USDA grades if voluntary on a cost basis.
[10] Local is approximately U.S. county equivalent.
[11] Some States only.
[12] Nonfat dry milk plants, quarterly; butter and cheese plants, semiannually.
[13] No dirty, stale, or contaminated milk to be bought or sold.
[14] Can exceed 3 million for maximum of 4 weeks.

Sources to Appendix table C–1

Country	*Information source*
Australia	"Exports (Dairy Produce) Regulations" Dec. 1, 1972, Dept. of Primary Industry
Austria	"Marktordnung (Marketing Order)", Section 15, Nr. 424/1968, Austrian Department of Agriculture "Milchqualitaetsverordnung (Milk Quality Ordinance)" Nr. 145/1955, Austrian Department of Agriculture
Belgium	"Quality and Sanitation Specifications", unpublished summaries prepared for the Dairy Import Study Committee, Fall 1974
Denmark	Do.
France	Do.
West Germany	Do.
Ireland	Do.
Italy	Do.
Netherlands	Do.
New Zealand	"The Milk Production and Supply Regulations, 1973", 1973/145 Ministry of Agriculture and Fisheries, Wellington, May 28, 1973
United States	"United States Standards for Grades of Butter", AMS, USDA, Wash., D.C. "United States Standards for Grades of Nonfat Dry Milk (Roller Process)", AMS, USDA, Revised April 1, 1973 "United States Standards for Grades of Nonfat Dry Milk (Spray Process)", AMS, USDA "General Specifications for Dairy Plants Approved for USDA Inspection and Grading Service", C&MS (AMS), USDA, May 16, 1967 "A Summary of Laws and Regulations Affecting the Cheese Industry", C&MS (AMS), USDA, Agriculture Handbook No. 265, Revised July 1966 "Federal and State Standards for the Composition of Milk Products", AMS, USDA, Jan. 1, 1974
Canada	Canada Dairy Products Act, in *The Canada Gazette*, part II, Statutory Orders and Regulations, July 15, 1952.

APPENDIX TABLE C-2.—TOTAL CONSUMPTION OF WHOLE MILK, BUTTER, AND CHEESE, IN MILK EQUIVALENTS, SELECTED REGIONS, 1965-72 [1]

[Thousand metric tons]

Area and product	1965	1966	1967	1968	1969	1970	1971	1972
OECD: [2]								
Whole milk	73,631	74,426	74,291	74,735	74,058	73,699	74,048	74,503
Butter	65,286	64,371	64,840	64,460	64,750	64,616	61,313	59,126
Cheese	37,135	38,669	40,144	41,620	43,669	46,134	48,114	50,668
Total	176,052	177,466	179,275	180,815	182,477	184,449	183,475	184,297
United States:								
Whole milk	31,031	30,816	30,030	29,981	29,406	28,747	28,926	29,278
Butter	12,478	11,138	10,892	11,272	10,937	10,736	10,513	10,245
Cheese	12,078	12,355	12,741	13,405	14,068	15,088	15,929	17,216
Total	55,587	54,309	53,663	54,658	54,411	54,571	55,368	56,739
Canada:								
Milk	3,003	3,059	3,077	3,046	3,040	3,097	3,120	3,075
Butter	3,683	3,594	3,482	3,460	3,348	3,415	3,415	3,303
Cheese	940	970	1,049	1,119	1,238	1,336	1,436	1,515
Total	7,626	7,623	7,608	7,625	7,626	7,848	7,971	7,893
EC-9:								
Milk	26,762	27,360	27,598	27,629	26,900	27,120	27,089	27,069
Butter	38,904	39,216	40,087	39,417	40,087	40,131	37,319	35,310
Cheese	19,503	20,444	21,285	21,909	22,869	23,810	24,750	25,631
Total	85,169	87,020	88,970	88,955	89,856	91,061	89,158	88,010

Other Western Europe:								
Milk	8,821	8,978	9,200	9,440	9,795	9,686	9,850	9,777
Butter	5,937	5,959	5,736	5,870	5,714	5,625	5,379	5,379
Cheese	3,871	3,950	4,019	4,069	4,257	4,544	4,613	4,861
Total	18,629	18,887	18,955	19,379	19,766	19,855	19,842	20,017
Australia:								
Milk	1,624	1,628	1,669	1,709	1,760	1,754	1,733	1,802
Butter	2,544	2,589	2,611	2,611	2,589	2,611	2,500	2,522
Cheese	406	406	406	436	455	515	515	544
Total	4,754	4,623	4,686	4,756	4,804	4,880	4,748	4,868
New Zealand:								
Milk	486	488	481	487	545	550	562	571
Butter	1,161	1,161	1,116	1,138	1,138	1,138	1,138	1,138
Cheese	89	89	99	109	119	119	119	119
Total	1,736	1,738	1,696	1,734	1,802	1,807	1,819	1,828
Japan:								
Milk	1,904	2,097	2,236	2,443	2,612	2,745	2,768	2,931
Butter	558	714	915	714	937	960	1,071	1,250
Cheese	248	455	545	574	673	733	762	782
Total	2,710	3,266	3,696	3,731	4,222	4,438	4,601	4,963

[1] Milk equivalents were estimated by applying factors of 22.32 and 9.9 to butter and cheese consumption, respectively.
[2] Organization for Economic Cooperation and Development, excluding Turkey and Yugoslavia.

Source: Organization for Economic Cooperation and Development. Milk and Milk Products Balances in OECD member countries, 1959–72. Paris, July 1974.

APPENDIX TABLE C–3.—COWS IN MILK IN SELECTED COUNTRIES, 1965–73

[Thousand head]

Country	Date	1965	1966	1967	1968	1969	1970	1971	1972	1973
United States	Yearly average.	14,953	14,071	13,415	12,832	12,307	12,000	11,842	11,710	11,419
Canada	June 1		2,171	1,991	1,929	1,897	1,856	1,736	1,707	1,687
EC–6		21,662	21,683	22,002	22,032	20,149	19,747	18,974	19,102	19,440
France	October	9,717	9,622	9,817	9,758	7,580	7,468	7,350	7,500	7,678
Germany	December	5,853	5,854	5,858	5,865	5,878	5,752	5,489	5,442	5,466
Netherlands	May	1,698	1,731	1,780	1,830	1,904	1,920	1,890	1,970	[1] 2,100
Italy		3,387	3,460	3,521	3,515	3,715	3,555	3,214	3,165	3,120
Belgium-Luxembourg	May	1,007	1,016	1,026	1,064	1,072	1,052	1,031	1,025	1,076
EC–3		2,897	5,390	5,412	5,494	5,458	5,475	5,518	5,700	5,470
United Kingdom	December		2,458	2,516	2,592	2,570	2,609	2,631	2,732	2,710
Denmark	July	1,350	1,350	1,328	1,295	1,233	1,153	1,105	1,123	1,156
Ireland		1,547	1,582	1,568	1,607	1,655	1,713	1,782	1,845	2,104
EC–9		24,559	27,073	27,414	27,526	25,607	25,222	24,492	24,802	25,410
Other Western Europe		3,361	4,447	4,475	3,952	4,419	4,353	4,272	4,426	4,596
Switzerland	April	920	917	928	929	905	896	835	895	888
Norway	June	517	503	478	470	453	424	414	414	413
Sweden	June 1		957	882	851	802	746	729	740	754
Greece	Dec. 31	416	437	492	481	470	460	433	436	484
Spain [2]	Sept. 30	1,508	1,633	1,695	1,702	1,789	1,827	1,861	1,941	[1] 2,057
Australia	Mar. 31	3,012	2,908	2,881	2,794	2,701	2,677	2,600	2,566	2,531
New Zealand	Jan. 31	2,032	2,088	2,131	2,232	2,304	2,321	2,239	2,218	2,200
Total		47,917	52,758	52,307	51,265	49,235	48,429	47,181	47,429	47,843

[1] Preliminary.
[2] Spain's figures from Organization for Economic Cooperation and Development data, July 1974, p. 116.

Source: Information provided by U.S. Embassies to Foreign Agricultural Service, USDA.

APPENDIX TABLE C-4.—MILK PRODUCTION IN SELECTED COUNTRIES, 1969-74 [1]

[In millions of pounds]

Country	1969	1970	1971	1972 [2]	1973 [3]	1974 [4]
France	61.1	60.1	60.9	63.6	65.2	67.8
West Germany	49.0	48.1	46.7	47.5	46.9	47.7
Italy	20.1	19.7	20.6	21.4	19.8	19.8
Netherlands	17.6	18.2	18.5	19.8	20.6	22.0
Belgium	9.1	8.9	8.4	8.8	8.9	9.2
United Kingdom	26.8	27.3	28.0	30.0	30.5	30.4
Denmark	10.8	10.2	10.0	10.6	10.8	11.0
Ireland	8.1	8.0	8.2	8.7	9.1	9.5
Luxembourg	.4	.5	.5	.5	.5	.5
Total, EC	203.0	201.0	201.8	210.9	212.3	217.9
Spain	7.8	7.8	7.9	8.4	8.9	8.9
Austria	7.3	7.3	7.2	7.2	7.2	7.2
Finland	7.7	7.2	7.1	7.2	6.8	6.8
Switzerland	7.0	6.9	7.0	7.1	7.3	7.3
Sweden	7.0	6.5	6.4	6.6	6.6	6.4
Norway	4.0	3.8	3.8	4.0	4.0	4.0
Total	40.8	39.5	39.4	40.5	40.8	40.6
Japan	9.9	10.4	10.6	10.9	10.8	10.6
New Zealand	13.9	13.0	13.8	13.6	12.7	13.0
Australia	16.6	17.0	16.2	16.1	15.9	15.4
United States	116.3	117.4	118.5	120.0	115.6	[5] 115.0
Canada	18.7	18.2	17.8	17.7	16.9	17.0
Grand total	419.2	416.5	418.1	429.7	425.0	429.5

[1] All figures for calendar years except for Australia (year ends June 30) and New Zealand (year ends May 31).
[2] Revised.
[3] Preliminary.
[4] Estimated.
[5] ERS estimate.

Source: Dairy and Poultry Division, FAS.

APPENDIX TABLE C-5.—SELECTED PRICE ESTIMATES USED IN THIS IMPORT STUDY[1]

Item	Unit	Year						
		1974	1975	1976	1977	1978	1979	1980
Corn per bushel	Dollar	3.00	3.25	3.00	2.55	2.65	2.76	2.87
Soybeans per bushel	do	6.50	7.50	6.60	6.35	6.85	7.40	8.00
Oats per bushel	do	1.50	1.55	1.40	1.25	1.30	1.35	1.40
Hay per ton	do	52.00	56.00	50.00	45.00	47.00	50.00	53.00
Dairy ration per ton	do	138.00	153.00	138.00	126.00	132.00	138.00	145.00
Beef per hundredweight	do	39.00	38.00	40.00	45.00	50.00	56.00	60.00
Cull dairy cows per hundredweight	do	24.00	20.00	22.00	28.00	34.00	38.00	41.00
Dairy replacements, each	do	500.00	450.00	425.00	455.00	490.00	525.00	565.00
Farm labor per hour without room and board	do	2.25	2.50	2.70	2.88	3.00	3.15	3.30
Farm machinery	Index	167.00	181.00	194.00	207.00	222.00	237.00	254.00
Industrial commodities	do	160.00	173.00	180.00	187.00	195.00	202.00	210.00
Farm supplies	do	157.00	177.00	184.00	191.00	199.00	207.00	215.00
Building and fences	do	195.00	209.00	224.00	240.00	257.00	275.00	294.00
Motor supplies	do	168.00	182.00	188.00	193.00	199.00	206.00	212.00
Electricity and gas	do	150.00	173.00	188.00	203.00	219.00	237.00	256.00
Fertilizer and lime	do	205.00	285.00	325.00	341.00	351.00	354.00	354.00
Taxes	do	167.00	179.00	191.00	205.00	219.00	234.00	251.00
Consumer prices	do	148.00	160.00	169.00	178.00	187.00	196.00	206.00

[1] Indexes in this table are based on 1967=100.

Source: Agricultural Prices, U.S. Department of Agriculture, Survey of Current Business, Department of Commerce, and commodity experts in Economic Research Service, U.S. Department of Agriculture.

APPENDIX TABLE C-6.—WORLD PRODUCTION, CONSUMPTION, AND NET EXPORTS OF DAIRY PRODUCTS IN MILK EQUIVALENTS AT 3.7-PERCENT FAT, 1966, 1972, AND 1973

[Price in U.S. dollars per hundredweight]

Item	Farm milk price	Million pounds			
		Total milk production	Domestic consumption	Net exports	Stocks
1966:					
United States:					
Manufacture	3.97	...	...	...	...
All milk	4.81	119,912	116,736	—2,013	5,189
EC-3	4.00	43,731	66,129	—23,398	1,000
EC-6	4.21	155,751	154,193	+866	692
Canada	5.86	18,373	16,593	+702	1,078
Australia	2.82	18,710	12,212	+5,523	975
New Zealand	2.12	17,411	4,183	+12,730	498
Rest of world		[1] 97,473	91,883	[2] +5,590	...
1972:					
United States:					
Manufacture	5.08	...	...	...	...
All milk	6.07	119,904	115,621	—224	4,507
EC-3	4.82	49,212	65,940	—17,928	1,200
EC-6	5.34	161,384	149,893	+6,592	4,899
Canada	7.05	17,676	16,381	—344	1,639
Australia	4.52	18,120	12,670	+4,991	459
New Zealand	3.45	17,800	4,524	+12,371	905
Rest of World		[1] 97,112	91,654	[2] —5,458	...
1973:					
United States:					
Manufacture	6.20	...	...	...	...
All milk	7.14	115,620	115,647	—3,230	3,203
EC-3	5.00	50,459	66,211	—16,752	1,000
EC-6	6.74	161,970	149,012	[3] +6,419	6,539
Canada	7.00	16,886	16,123	—3,349	4,112
Australia	4.70	18,293	12,871	+4,289	1,133
New Zealand	4.13	16,160	4,568	+11,230	362
Rest of world		[1] 99,111	100,503	[2] +1,393	...

[1] Includes Argentina, Brazil, Colombia, Peru, Uruguay, Japan, Austria, Finland, Greece, Norway, Spain, Sweden, and Switzerland.

[2] Includes above countries in footnote 1, plus African and other Asian designations.

[3] Does not include exports to U.S.S.R. of butter—about 7,000,000,000 pounds of milk in the form of butter.

APPENDIX TABLE C-7.—PROJECTED NUMBER AND SIZE OF FARMS WITH MILK COWS BY U.S. REGION, UNDER CONTINUED QUOTA POLICY, 1980

Region	Herd size					
	1 to 19	20 to 29	30 to 49	50 to 99	100 plus	Total
Farms reporting milk cows (number):						
Northeast	1,157	4,007	19,595	16,183	3,543	44,485
Corn Belt	5,007	9,266	17,186	9,384	1,260	42,103
Lake States	4,766	15,062	34,384	11,385	771	66,368
Southeast	428	39	427	1,619	1,414	3,927
South Central	3,730	2,200	2,650	5,231	2,656	16,467
Plains	2,091	5,265	5,088	2,644	470	15,558
Mountain	1,418	214	421	980	534	3,567
Southwest	1,033	39	144	216	2,603	4,035
Northwest	311	548	1,891	2,625	1,085	6,460
United States	19,941	36,640	81,786	50,267	14,336	202,970
Milk cows (number):						
Northeast	9,172	97,670	753,364	1,039,058	515,354	2,414,618
Corn Belt	33,969	219,330	651,124	601,363	174,719	1,680,505
Lake States	54,650	366,783	1,298,868	699,568	113,024	2,532,893
Southeast	1,581	958	16,328	116,589	383,812	519,268
South Central	16,770	52,783	101,641	355,004	459,645	985,843
Plains	13,220	125,275	188,864	166,284	67,568	561,211
Mountain	4,481	5,179	16,186	66,567	118,704	211,117
Southwest	6,366	940	5,872	15,553	892,466	921,197
Northwest	1,719	13,202	72,416	183,411	195,113	465,861
United States	141,928	882,120	3,104,663	3,243,397	2,920,405	10,292,513

Milk production (million pounds):						
Northeast	79.5	1,127.4	8,716.4	12,219.0	5,979.7	28.122.0
Corn Belt	277.1	2,277.6	7,234.3	6,804.8	1,974.6	18,568.4
Lake States	531.1	3,796.1	14,529.0	8,090.3	1,292.4	28,238.9
Southeast	8.8	9.3	169.9	1,235.6	3,978.0	5,401.6
South Central	117.5	540.7	1,031.6	3,615.0	4,803.1	10,107.9
Plains	100.5	1,125.7	1,936.3	1,833.2	786.4	5,782.1
Mountain	38.3	63.3	204.6	841.2	1,479.5	2,626.9
Southwest	40.0	11.5	72.8	202.5	13,611.4	13,938.2
Northwest	18.5	169.6	914.4	2,424.8	2,686.7	6,214.0
United States	1,211.3	9,121.2	34,809.3	37,266.4	36,591.8	119,000.0

APPENDIX TABLE C-8.—PER CAPITA CIVILIAN CONSUMPTION OF SELECTED DAIRY PRODUCTS, UNITED STATES, 1960-73 AND PROJECTED TO 1980

[Pounds]

	Fluid milk and cream [1]			Cheese			Evaporated and condensed			Frozen products					Dry milk products			
				Whole and part skim milk [2]														
	Sales of fluid products	Consumption	Butter	American	Other	Cottage cheese	Canned whole milk	Bulk condensed whole milk	Skim and buttermilk	Ice cream	Ice milk	Sherbet	Other frozen dairy products	Mellorine	Dry whole milk	Nonfat dry milk	Dry buttermilk	Dry whey
Year:																		
1960	307	322	7.5	5.4	2.9	4.8	11.4	2.3	4.5	18.3	4.5	1.5	0.2	1.2	0.3	6.2	0.4	0.3
1961	298	312	7.4	5.7	2.9	4.6	10.8	2.5	4.8	18.0	5.0	1.4	.1	1.3	.3	6.2	.4	.3
1962	296	308	7.3	6.1	3.1	4.6	10.3	2.2	4.8	17.9	5.6	1.4	.2	1.3	.3	6.1	.4	.4
1963	296	307	6.9	6.1	3.1	4.6	9.5	2.1	4.5	18.0	6.0	1.5	.2	1.3	.3	5.8	.4	.4
1964	294	304	6.9	6.2	3.2	4.7	9.2	2.3	4.8	18.3	6.3	1.5	.2	1.3	.3	5.9	.4	.5
1965	292	302	6.4	6.2	3.4	4.6	8.6	2.0	5.0	18.5	6.6	1.5	.2	1.3	.3	5.6	.4	.6
1966	288	297	5.7	6.2	3.6	4.6	7.9	1.8	5.4	18.2	6.8	1.6	.2	1.3	.3	5.9	.3	.7
1967	277	285	5.5	6.4	3.7	4.5	7.3	1.7	5.0	17.8	7.0	1.5	.2	1.3	.3	5.6	.3	.8
1968	272	280	5.7	6.6	4.0	4.6	7.1	1.8	4.8	18.4	7.2	1.6	.2	1.4	.2	5.8	.3	.8
1969	264	272	5.4	6.7	4.2	4.8	6.4	1.4	5.0	18.0	7.6	1.7	.2	1.3	.2	5.8	.3	.8
1970	258	264	5.3	7.1	4.4	5.1	5.9	1.2	5.0	17.7	7.8	1.6	.2	1.2	.2	5.4	.2	.9
1971	253	259	5.1	7.4	4.7	5.2	5.7	1.1	5.0	17.5	7.7	1.6	.2	1.1	.2	5.3	.3	1.0
1972	257	263	4.9	7.8	5.4	5.4	5.1	1.2	4.7	17.4	7.7	1.6	.3	1.1	.1	4.6	.2	1.1
1973 [3]	254	259	4.8	8.0	5.7	5.2	4.9	1.1	4.3	17.5	7.7	1.7	.3	.9	.1	5.3	.2	1.1
1974	243	248	4.4	8.7	6.0	5.0	4.5	1.1	4.2	17.7	7.8	1.8	.3	.9	.1	4.9	.1	1.1
1975	238	243	4.3	9.1	6.1	5.0	4.1	1.0	4.2	17.8	7.8	1.8	.3	.8	.1	4.8	.1	1.1
1976	233	238	4.2	9.3	6.3	5.1	3.9	1.0	4.1	17.9	7.9	1.8	.3	.7	.1	4.7	.1	1.1
1977	232	237	4.2	9.5	6.5	5.1	3.6	1.0	4.0	17.9	8.0	1.8	.3	.7	.1	4.6	.1	1.2
1978	228	232	4.2	9.7	6.7	5.1	3.3	.9	3.9	18.0	8.1	1.8	.3	.6	.1	4.5	.1	1.2
1979	223	227	4.1	9.9	6.8	5.1	3.0	.9	3.8	18.0	8.2	1.8	.3	.5	.1	4.4	.1	1.2
1980	218	222	4.0	10.0	7.0	5.1	2.7	.9	3.7	18.0	8.3	1.8	.3	.5	.1	4.3	.1	1.2

[1] Milk equivalent, fat-solids basis.
[2] Excludes cottage cheese.
[3] Preliminary.

APPENDIX D

Work components and sequencing for dairy import study

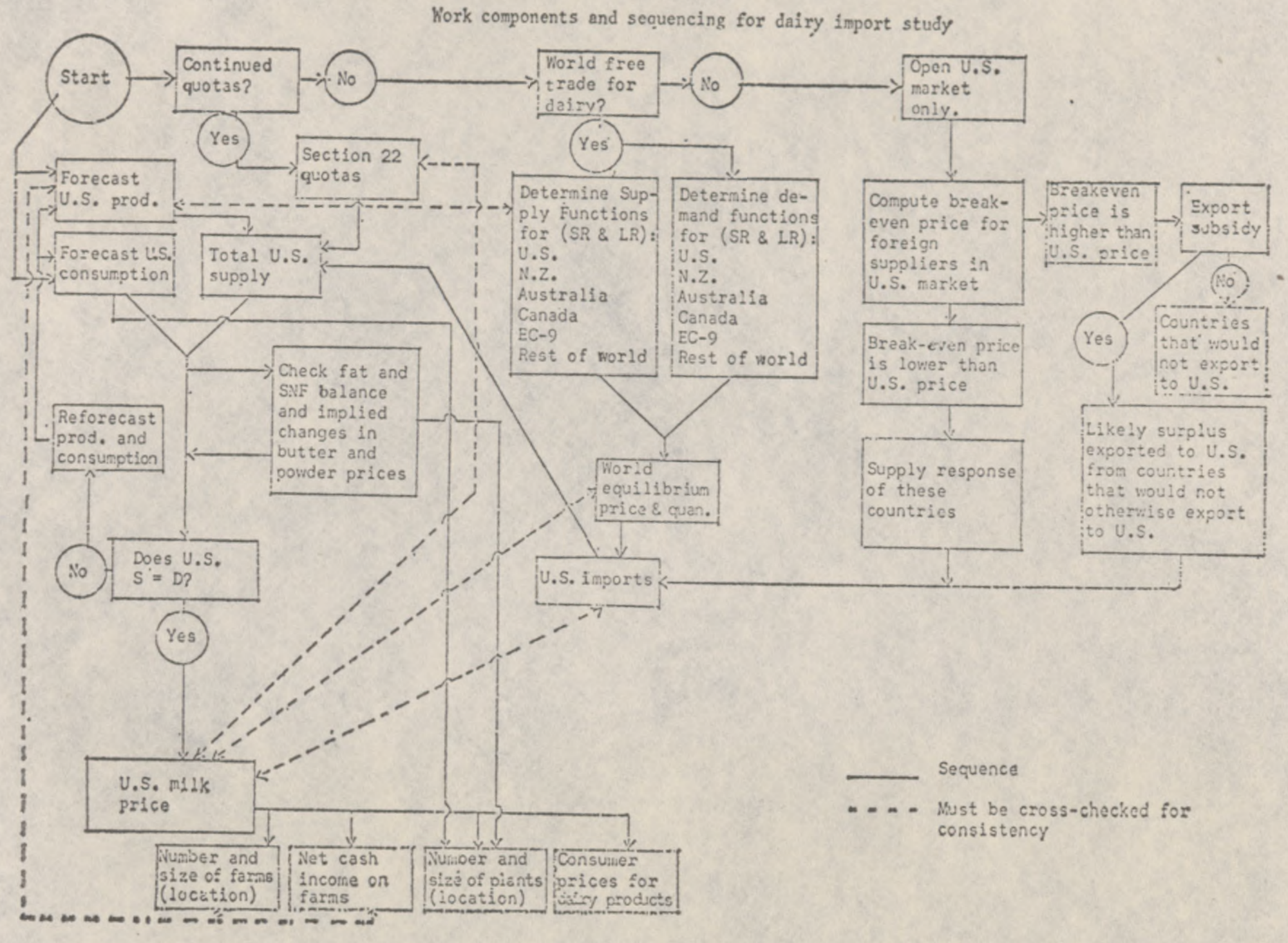


FIGURE 1