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ECONOMIC ASPECTS OF THE IDAHO DAIRY INDUSTRY

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IDAHO AGRICULTURAL EXPERIMENT STATION

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Economic Aspects Of the Idaho Dairy Industry

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The third most important enterprise in Idaho during 1971 was dairying, if farm receipts are used as the measure (Table 1). Only cattle and potatoes garnered more returns to the farmer for commodity sales.

Over \$78 million or 11.3 percent of all receipts from the sale of farm commodities was realized from milk sales.¹ Other income was generated by the dairy industry from sale of calves and cull cows. In addition, many people were employed in dairy processing and marketing. Others were engaged in selling inputs and services to dairy farmers. Processing milk almost doubles the original farm value. Taken as a whole, the dairy industry including production, marketing, and consumption has a considerable impact on the Idaho economy.

This publication discusses economic aspects of the Idaho dairy industry and reports on the results of a marketing study of milk and manufactured dairy products. Objectives of the study were to determine dairy industry changes in recent years, to find significant problems facing the dairy industry and to assess the competitive situation of the Idaho dairy industry currently and in the near future.

¹USDA, ERS. *The Farm Income Situation*, July 1971.

Table 1 Receipts from all farm commodities and farm value of milk, Idaho, 1960-1971.

Year	Value all farm commodities (million dollars)	Value all milk for dairy products (thousand dollars)	Dairy as percent of total (percent)
1960	429.6	50,362	11.7
1961	412.3	55,116	13.4
1962	439.0	51,926	12.1
1963	453.9	50,711	11.2
1964	456.7	48,693	10.7
1965	505.4	49,266	9.7
1966	533.0	56,680	10.6
1967	521.9	58,557	11.2
1968	557.0	60,544	10.9
1969	631.3	62,530	10.0
1970	664.0	69,565	10.5
1971	690.1	78,030	11.3

Source: *Farm Income Situation*, USDA, ERS.

Table 2. Farms reporting milk cows in Idaho for designated years.

Number of cows per farm	Number of farms			Percentage change 1959 to 1969
	1959	1964	1969	
1-19	18,124	10,983	4,297	-76
20-49	2,486	2,317	1,705	-31
50 or more	263	438	589	+124
Total farms	20,873	13,738	6,591	-68

Source: Census of Agriculture.

Information used in the study was obtained from published statistics, a survey of milk processors, and from various other sources including individuals, representatives of governmental agencies working with the regulations and control of dairy products, and transportation firms that handle dairy products.

Adjustments in the Idaho Dairy Industry

Changing technology and economic conditions have been significant forces in changes that have occurred in the dairy industry in this century. Technological improvements have made it possible for a dairy farmer to milk more cows, feed them better, and greatly increase his milk sales volume. Economic conditions have been such that dairy profits depended on efficient production. Health standards have also tightened, requiring additional adjustments in the dairy enterprise.

Because of these changes and changes in enterprises that may be alternatives to dairying, dairy enterprises have become more specialized, larger, and fewer (Table 2).

Between 1959 and 1969, the number of dairy farms with 1 to 19 cows declined 76 percent. Those with 20 to 49 cows declined 31 percent and those with 50 or more cows increased 124 percent. Total number of dairy farms declined 68 percent in the 10-year period. These data emphasize the shift out of dairying by farmers with small herds and the increasing enterprise size for those choosing to remain in the business.

Farmers with a few cows have either expanded to an economical size and type of dairy farming or shifted out of the business. Dairying is a demanding occupation. Unless the farm is large enough to pay for additional labor on occasion, the farmer and his family may be completely tied to the farm. If adequate equipment and facilities — milking parlors, pipeline milkers, coolers, milk tanks, sanitary facilities — are to be provided, the herd must expand to pay the expenses.

A previous study determined the effects of upgrading dairy farms in Idaho to meet minimum Grade A requirements.² The conclusions were that many farmers with a few dairy cows would shift to alternatives rather than incur the expense of meeting minimum standards. Other

²Withers, R.V., J.L. Barnhart, and J.E. Dixon. 1964. Upgrading Farm Dairy Facilities for Manufacturing Milk, Idaho Agr. Exp. Sta. Bul. 423.

farmers would meet the requirements and increase herd size. Recent adjustments made by dairy farmers have substantiated conclusions of that study.

Fewer and fewer farms are keeping a family cow because of the inconvenience involved. It is not now uncommon to see trucks delivering milk to rural households. This was rare 20 years ago.

Dairy Cow Numbers and Milk Production

Milk cows numbers in Idaho reached a peak of 250,000 in 1944 and had declined most years since then. The total had fallen to 154,000 in 1971 (Table 3). Milk production has not fluctuated as much as cow numbers. The record year was 1961 when 1,656 million pounds of milk were produced. A low of 1,429 million pounds was produced in 1969. Production rose to 1,490 million pounds in 1970 and 1,556 million pounds in 1971. This increase of 4.4 percent from 1970 to 1971 was well ahead of the national increase of 1.3 percent.

Production per cow increased steadily over the period (Fig. 1) from 6,300 pounds in 1950 to 10,104 pounds in 1971. This is more than 60 percent increase. Several factors have contributed to this rise. Perhaps most important ones were better breeding because of wide use of artificial insemination, better feeding practices, and improved overall general management. Much room for improvement still remains, however, since some herds have averaged 15,000 pounds or more of milk per cow.

Dairy cows in Idaho are concentrated in four areas (Fig. 2). They are the Boise Valley of southwest Idaho, southcentral Idaho from Good-

Table 3. Milk production, number of cows, and milk production per cow in Idaho, selected years 1950-1970.

Year	Total milk production	Number of cows	Production per cow
	(million pounds)	(thousands)	(pounds)
1950	1,197	190	6,300
1955	1,518	216	7,030
1960	1,644	202	8,140
1961	1,656	200	8,280
1962	1,619	197	8,220
1963	1,595	191	8,350
1964	1,523	185	8,230
1965	1,481	178	8,320
1966	1,458	162	9,000
1967	1,457	157	9,280
1968	1,462	156	9,370
1969	1,429	155	9,219
1970	1,490	156	9,551
1971	1,556	154	10,104

Source: Idaho Crop and Livestock Reporting Service, Milk Production, 1970 annual summary, February 19, 1971.

USDA, ERS Dairy Statistics through 1960, Statistical Bulletin No. 303, February 1962.

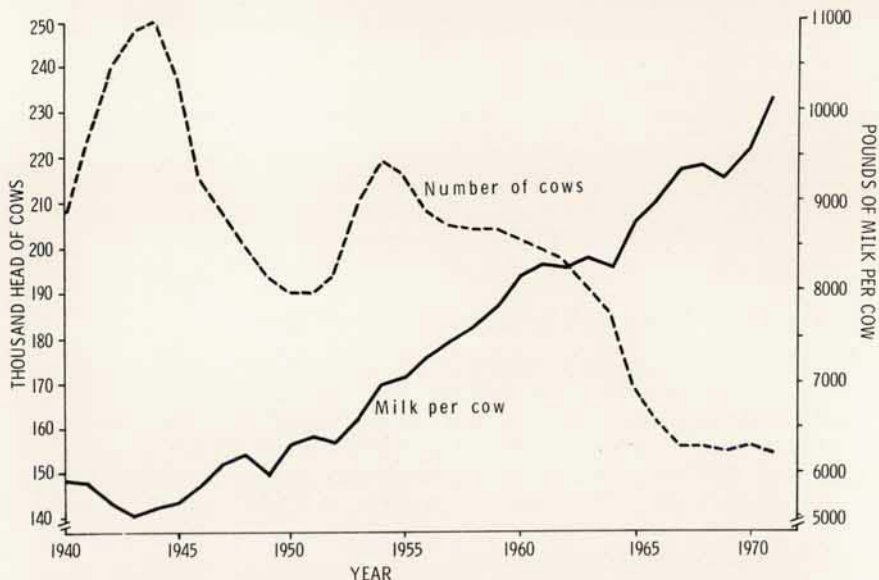


Fig. 1. Number of cows and production per cow in Idaho, 1940 to 1971. (Source: USDA-ERS Dairy Statistics Bull. 303 and 430; Milk Production, Disposition and Income, 1966-1969)

ing to Burley, the Upper Snake River Valley from Ashton to Pocatello, and the Cache Valley area of southeastern Idaho consisting primarily of Franklin and Bear Lake counties. Every county of the state has some dairy cows.

Use of Milk Produced in Idaho

Milk production in Idaho totaled 1,490 million pounds in 1970, a slight increase from the previous year but less than the 1,556 million pounds produced in 1971. About 1,224 million pounds, or 82 percent were used in dairy products manufactured in the state (Table 4). An additional 12.7 percent was consumed in the state as fluid milk products, if per capita consumption was the same in Idaho as the national average. About 2.6 percent was fed to calves on farms and the remainder was shipped out of the state for processing.

Table 4. Utilization of milk produced in Idaho, 1970.

	Million pounds	Percent of total
Total Production	1,490	100.0
Net Shipment out of State ^o	1,490	100.0
Manufactured ^o	1,224	82.1
Consumed as Fluid ^o	189	12.7
Fed to Calves	38	2.6
Net Shipment out of State ^o (of whole milk)	39	2.6

Source: USDA, SRS, Milk Production, Disposition, and Income, 1969-70, April 1971.

^oEstimated.

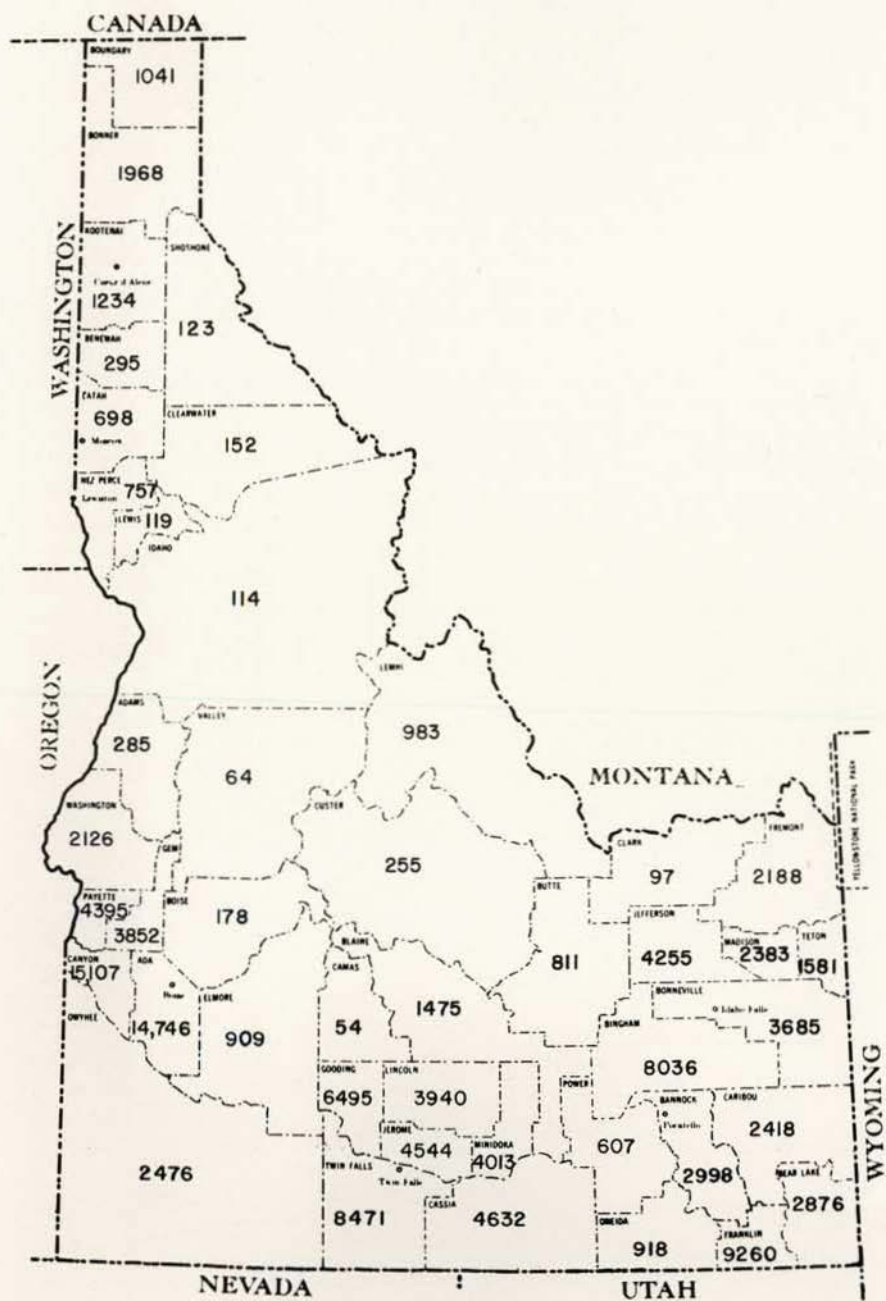


Fig. 2. Distribution of milk cows in Idaho, 1969.

The net out-shipment was probably about 2.6 percent, although this is a residual figure and cannot be substantiated. More milk was shipped out of the state for processing than this figure indicates but part was offset by milk and some manufactured products brought into the state from elsewhere.

The heaviest shipments of raw milk out of the state went to Utah and Oregon. Substantial shipments also went to eastern Washington. Based on figures from May and November 1970, an estimated 45 million pounds of raw milk moved into Utah that year.³ Large quantities of milk also moved from southwestern Idaho into Oregon. Some raw milk was brought into the state from Oregon and from the Columbia Basin of Washington. Processed milk was brought into Idaho from Washington and Utah. Insignificant amounts came from other neighboring states. Statistics are not available for exact amounts of raw milk leaving and entering Idaho.

In addition to the larger and fewer dairy enterprises in recent years, other dairy industry changes are worthy of note. Bulk milk tanks are replacing cans on the farm, especially the larger enterprises. Use of milk cans will probably cease entirely before many more years have passed.

Farmers have virtually stopped selling cream (Fig. 3). In 1940, Idaho farmers sold over 19 million pounds of fat as cream. By 1945, the total had declined to less than 7 million pounds; by 1970, only 290 thousand pounds. Farmers who previously sold cream are out of the dairy business or have shifted to selling whole milk.

³Estimated from "Great Basin Marketing Area Market Reporter", Salt Lake City, Utah, August 1970 and February 1971.

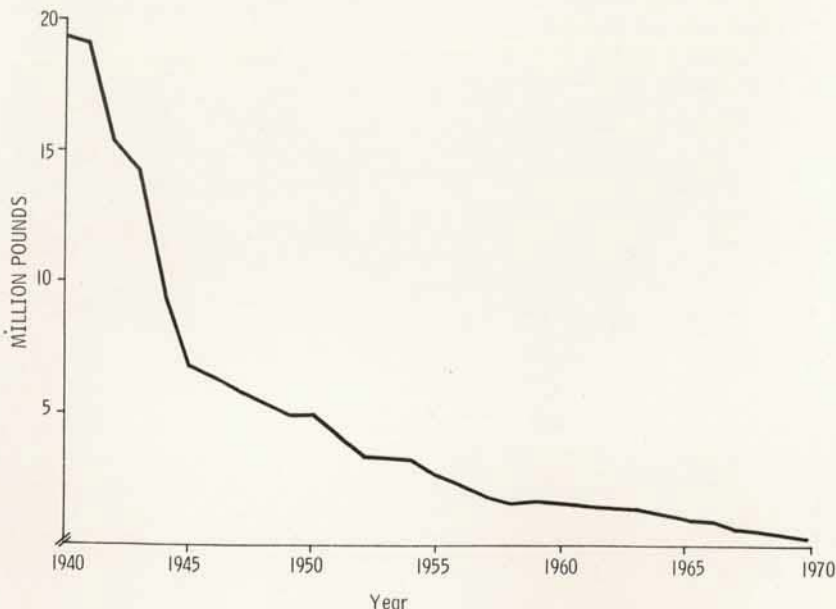


Fig. 3. Pounds of fat sold to dealers as cream, Idaho, 1940 to 1970.

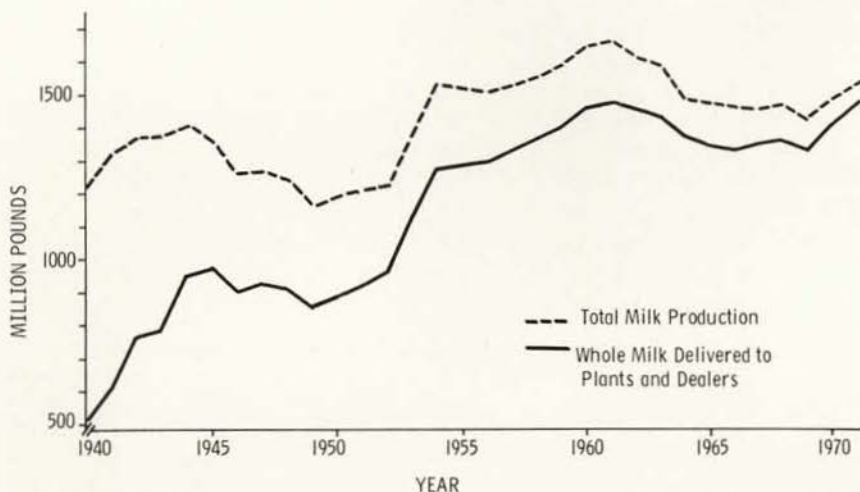


Fig. 4. Milk produced on farms and milk sold to plants and dealers in Idaho, 1940 to 1970.

Fig. 4 shows the changing proportion of milk production sold as whole milk to plants and dealers. More milk is delivered to plants now than in the past because less milk is used on the farm and deliveries of farm-separated cream have declined. Also, milk solids have been gaining in value in relation to butterfat in recent years.

Manufactured Dairy Products

Cheese, butter, and nonfat dried milk are by far the most important dairy products processed in Idaho in terms of volume and value.

Cheese production has expanded steadily, while butter and nonfat dry milk have declined over the past decade. Production of frozen desserts and ice cream mix have held steadily over this period (Table 5).

Changes in per capita consumption of dairy products in the United States between 1955 and 1970 are indicated in Table 6. Consumption of butter, evaporated and condensed milk, and fluid milk products has declined greatly. Consumption of cheese, including cottage cheese, is substantially higher, while ice cream and nonfat dry milk use has been stable. These consumption changes have affected all phases of the dairy industry.

Marketing Idaho Dairy Products

Assuming that Idaho residents consumed dairy products at the national average of 561 pounds of milk equivalent per capita, they would have used 400 million pounds of milk equivalent in 1970. This is about 30 percent of the total milk production. Therefore, about 70 percent of Idaho's production was available for shipment to out-of-state markets and for government purchases. Most of the exports were butter, cheese, and nonfat dry milk powder.

Again assuming consumption at the national level, nearly 20 million pounds of butter, 34 million pounds of American cheese, 15 million pounds of other cheese excluding cottage cheese, and 33 million pounds of nonfat dry milk would have been available for export from Idaho in 1970. (These figures do not consider imports of these products from other states.)

Major milk processors were contacted to determine the markets for these Idaho dairy products. Each processor was asked to list his major

Table 5. Manufactured dairy products, Idaho 1960, 1965, 1970

Product		1960	1965	1970
		(000)	(000)	(000)
Creamery butter	lb.	34,038	26,076	23,100
American cheese	lb.	27,883	32,360	39,724
Swiss cheese	lb.	8,128	8,541	••
Other cheese	lb.	723	1,412	18,416
Total cheese	lb.	36,733	42,314	58,140
Cottage cheese - curd	lb.	2,508	2,022	2,488
creamed	lb.	3,800	3,021	3,800
Evaporated milk	lb.	•	•	•
Dried skim milk				
Human food	lb.	60,563	47,743	37,368
Animal food	lb.	416	379	393
Total	lb.	60,979	48,122	37,761
Dried buttermilk	lb.	1,070	•	•
Dried whey	lb.	•	•	•
Unsweetened condensed milk	lb.	2,013	•	•
Ice cream	gal.	3,048	3,080	3,294
Ice milk	gal.	1,039	1,333	1,357
Sherbet	gal.	144	209	178
Ice cream mix	gal.	1,461	1,546	1,644
Ice milk mix	gal.	552	773	780
Milk sherbet mix	gal.	116	120	115

*Not published to avoid disclosing individual operations.

**Included with other cheese.

Table 6. Per capita civilian consumption of selected dairy products for selected years, U.S., 1955 to 1970.

Product	Pounds consumption				Percent change 1955-1970
	1955	1960	1965	1970	
Butter	9.0	7.5	6.4	5.3	-41.1
American cheese	5.4	5.4	6.2	7.1	+31.5
Other cheese	2.5	2.9	3.4	4.4	+76.0
Cottage cheese	3.9	4.8	4.7	5.1	+30.8
Evaporated and condensed milk	16.2	13.7	10.7	7.4	-54.3
Ice cream	18.0	18.3	18.5	17.8	- 1.1
Nonfat dry milk	5.5	6.2	5.6	5.7	+ 3.6
Fluid products	348.0	322.0	302.0	264.0	-24.1

Source: USDA, ERS, Dairy Situation, May 1971.

markets in order of importance for each product manufactured. Markets were ranked by aggregating the listings of the processors surveyed.

As expected, fluid milk products were distributed primarily to local markets within the state or near Idaho boundaries in neighboring states.

California was the largest market for American cheese, butter, and nonfat dry milk powder in 1970. All southern Idaho processors contacted listed California as the No. 1 market for American cheese. Most listed California first for butter and powder. Utah was a distant second and Idaho third in terms of product volume used. Other states listed were Nevada, Wyoming, Montana, Oregon, and Washington. Figure 5 shows the location of major Idaho dairy product markets.

Significant government purchases of butter and nonfat dry milk were made. Some cheese was also sold through this channel. These purchases were made as part of the milk price support program.

About 75 percent of Idaho's dairy products are transported by truck, the remainder by rail. Truck transportation has gained in importance because of flexibility and convenience, especially for less than carload lots.

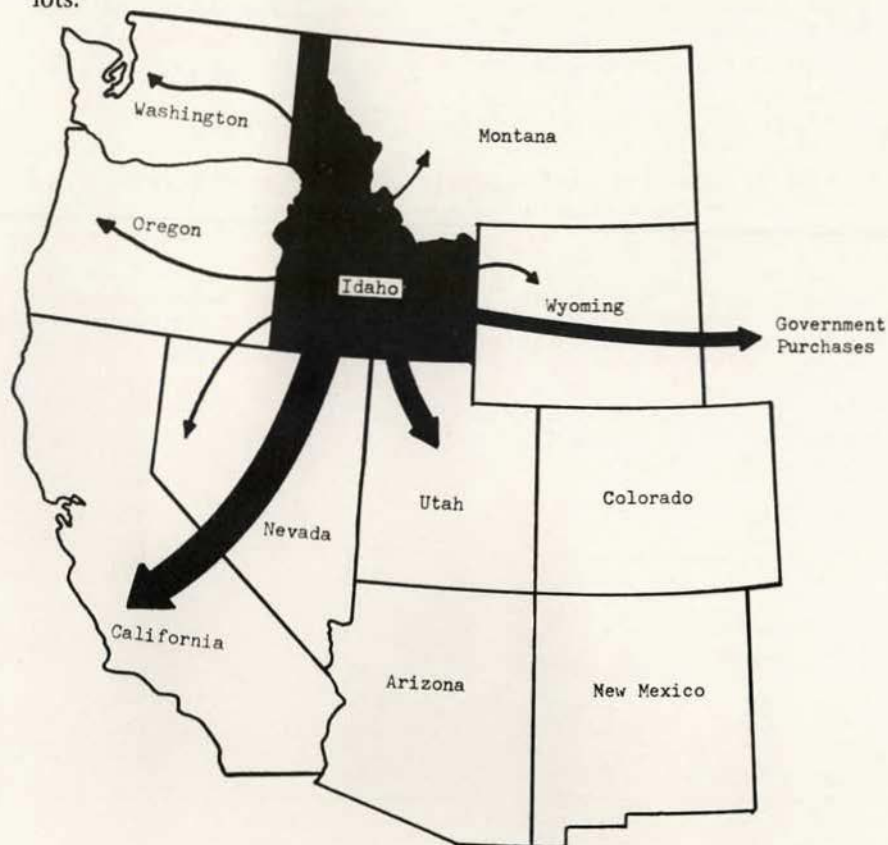


Fig. 5. Flow of milk products manufactured in Idaho, 1970.

Competitive Position of the Idaho Dairy Industry

To put the Idaho dairy industry in perspective regarding its competitive position, two questions should be answered. First, why does Idaho have a dairy industry that exceeds its needs for fluid milk production? Second, what obstacles have restricted expansion of the dairy industry during the past decade?

As milk production shifted from many small producers to fewer larger herds, the reason for dairying also has changed. During the early 1900's, farms were more self-sufficient. Farm families produced much of the food they consumed. This often meant keeping one or more cows to supply milk for the family. Any surplus was sold as whole milk or cream, or fed to livestock. Many farms gradually expanded the herds to provide a regular income and give farm youth an opportunity to work before and after school.

The dairy enterprise was a means of diversifying farm operations. In addition, feed was available and dairy prices were stable relative to other farm commodities. Good quality alfalfa hay could be grown well in Idaho irrigated areas and feed grain was abundant. Some land unsuited to cropping provided pasture for the cows. Often ditch banks and other small or odd-shaped areas were grazed to salvage feed from these places.

Table 7. Railroad rates for shipping 100 pounds of specified products from designated points to Las Angeles. February 1971.

Butter and cheese	Shipment from		
	Boise, Idaho ^o	Madison, Wis.	Minneapolis, Minn.
Lot size (pounds)			
24,000	—	4.90	—
30,000	—	3.99	2.70
40,000	—	2.78	—
52,000	1.20	—	—
60,000	—	2.31	1.99
65,000	1.08	—	—
75,000	.99	—	—
85,000	.93	—	—
90,000	—	2.13	1.79
100,000 ^{oo}	—	2.05	1.73
Nonfat dry milk powder			
Lot size (pounds)			
40,000	1.38	2.40	2.27
60,000	1.20	2.20	2.07
75,000	1.12	2.07	1.94
90,000	—	1.95	1.84
100,000	1.04	1.88	1.75

Source: Union Pacific Railroad.

^{oo}Cheese only.

^oRates from Idaho Falls and Jerome, Idaho were similar to those from Boise.

Dairying was usually not the main farm enterprise. This purpose has changed, however, as farms have become larger and more specialized. Small dairy herds are rapidly disappearing. Those staying in the dairy business are increasing herd size and emphasizing dairying. Dairying provides their living, not just supplemental income. Efficient operation and careful planning are essential to attaining these goals.

The dairy industry is a competitive business. Idaho's remote location and sparse population means that milk produced in excess of fluid needs will be processed into various manufactured products. This returns less than milk for fluid uses. The manufactured products must be shipped to markets out of the state where they compete with products from the dairy states and other areas.

In the California market, the principal outlet for Idaho dairy products, Idaho does have a transportation rate advantage over the lake states. In February, 1971, rail rates for shipping butter, cheese, and nonfat dry milk powder ranged from \$.70 to over \$1 more per hundred pounds from Wisconsin or Minnesota to Los Angeles than from major Idaho production areas (Table 7).

The Idaho dairy industry also has the advantages of ample supplies of alfalfa hay and grain. Irrigated pastures may also encourage milk production. Climate is mild enough that cows need not be confined. Temperatures are cool enough that hot weather is not a production problem.

The Idaho dairy industry also has problems and obstacles. The state's small population provides a limited market for fluid milk products. Therefore, most milk produced must be manufactured. In 1971, the average U.S. price for fluid market milk was \$6.21 per hundred-weight compared to \$4.85 for manufacturing grade milk. This puts manufacturing milk areas at an extreme price disadvantage compared to areas with a high percentage of fluid use.

Idaho's average 1971 price for manufacturing milk was \$4.94. The average fluid milk price was \$5.45. The Idaho fluid price was below the national average because not all milk eligible for fluid use was actually used as such. The remainder was manufactured.⁴

Another factor in milk marketing may be the marketing order. While only a small part of Idaho is included in milk marketing order areas, nearly 60 percent of the nation's milk is produced and marketed in such areas. Milk marketing orders have no apparent direct influence on Idaho's production and marketing, but may have some indirect influence.

Citing the purposes and intent of milk marketing orders may put the problem into perspective. Federal milk marketing orders were first authorized by the Agricultural Marketing Agreements Act of 1937 to cope with chaotic price conditions that had developed during the depression years. Objectives of the federal milk marketing orders are (1) to help farmers develop dependable markets by providing milk prices reasonable in relation to economic conditions and (2), to provide consumers an adequate supply of high-quality milk.

⁴Idaho Dept. of Agric. 1972. Idaho Dairy Production 1971.

The order attempts to gain these objectives by orderly marketing activities such as establishing minimum prices while assuring adequate supplies; marketing surplus milk (surplus only in the fluid sense; this milk is not actually surplus but goes into the lower value manufacturing use, competing with products from specialized manufacturing milk areas like Idaho); uniform prices for milk; reducing price fluctuations; assuring accurate weights, measures, testing, and accounting; and providing information to interested parties.⁵ Federal orders pertain primarily to milk for fluid uses. However, surplus fluid milk also goes into manufactured products.

Producing a surplus over fluid needs is of concern in areas like Idaho where most milk is manufactured. If pricing under marketing orders encourages greater production than other methods, a problem may exist for unregulated areas. Any milk produced in excess of fluid needs is manufactured. Price blending of milk for fluid utilization and for surplus uses is suspected to influence increasing surplus production. Blend prices are used in most federal milk marketing orders.

The blend price, the price paid to producers, is computed by averaging the fluid milk price with the manufacturing milk price. For example, if the fluid price is \$6.50 per hundredweight and the manufacturing milk or surplus price is \$4.50, with the fluid utilization at 50 percent, the blend price would be \$5.50 ($6.50 \times .50 + 4.50 \times .50$). The producer would receive this price for all his milk.

If the farmer increased production, he would still receive the blend price for the increase (although the blend price does decrease as production over fluid needs increases). Since he receives the blend price instead of the lower manufacturing price, he continues to increase production.

On the other hand, if he were paid only the manufacturing milk price for everything in excess of fluid use, he might restrict his production. Such a plan, called the Base-Excess Plan, is being tried in the Puget Sound market in an attempt to get away from the stimulating effects that the blend price has on production. If, in fact, the blend price stimulates production of an unnecessary surplus,⁶ the excess is manufactured into products which compete directly with products from non-regulated areas and perhaps constitutes an unjust hardship on these areas. Many studies have concluded that blend prices do stimulate production as indicated.

Graf, McBride, and Story⁷ made the following statement:

⁵USDA, Consumer and Marketing Service, Dairy Division. 1971. Questions and Answers on Federal Milk Marketing Orders. Washington, D.C.

⁶An unnecessary surplus is milk in addition to fluid needs and a normal surplus to provide an adequate supply of milk to the market in periods of lowest seasonal production. Unnecessary surplus is defined as total milk receipts minus Class I sales, minus a necessary reserve of 20 percent and minus the seasonal surplus in any given market.

⁷Graf, Truman, Glynn McBride and Robert Story. 1963. An Investigation of the Dairy Problem and Analysis of Selected Program Alternatives. A.E. Ext. 267. New York State College of Agriculture, Cornell University, Ithaca, New York. p. 34.

Furthermore, the method of paying farmers by pooling returns from the various use classifications prevents payment to individual farmers as actual market values. They receive the same unit return for all of their sales even though the surplus milk above the fluid market needs actually returns much less than the uniform price they receive. The blending of returns thus provides an added stimulus for increased output which would not exist if producers received the lower manufacturing value for their increased marketings.

McWilliams, looking at milk production statistics for 1963, concluded that manufacturing milk producers are being put to a disadvantage because of blend prices. Particularly when milk support prices are reduced, manufacturing milk producers decrease production but part or all of the slack is taken up by increases in areas using the blend price.⁸

It is difficult to prove or disprove from available statistics that blend prices stimulate milk production. Logically, however, the blend price would be much more likely to encourage production than would paying the manufacturing milk price for the excess above fluid needs. The exception would be cases where producers may increase production in an effort to build their bases and increase quotas.

For 1970, about 40 percent or 26 billion pounds of milk produced in all federal order markets was not used as Class I milk.⁹ Unnecessary surpluses for 15 large federal markets are shown in Table 8. In most instances, the excess above fluid needs has been expanded. For all 15 markets the unnecessary surpluses expanded from 8 to 22 percent, while milk production nationwide has been decreasing.

Bartlett indicates that federal milk marketing orders have authorized Class I milk prices higher than needed to secure an adequate supply. This has resulted in a surplus which has forced prices of manufacturing to fall to levels lower than would have been otherwise.¹⁰

The possibility of a milk marketing order for southern Idaho is often mentioned. However, such a small part of all production is used for fluid purposes that it is doubtful whether the blend price could be increased much over the present price. Expanding some nearby order to include Idaho would be more feasible. The problem is location: south Idaho is rather remote from all federal orders except the Great Basin and producers in that order would dislike taking in an area with so much production and so few consumers.

⁸McWilliams, A.L. 1964. Should Voluntary Base Plans Be Used To Aid in Reducing Milk Surpluses? Dairy Marketing Facts, AE3983. University of Illinois College of Agriculture.

⁹Bartlett, Roland F. 1972. Dairy Marketing Facts. Dept. of Ag. Econ., University of Illinois Coop. Ext. Serv. Urbana-Champaign.

¹⁰Ibid.

Table 8. Unnecessary surpluses in 15 large federal order markets, selected years, 1952 to 1970.¹

Market	1952	1956	1960	1966	1970 ²
	(Percent of total milk receipts)				
Chicago regional	8	12	20	27 ³	35
Seattle ⁴	1	14	28	40	35
Minneapolis-St. Paul	1	2	7	14	32
New York-New Jersey	14	14	23	26	25
Detroit ⁵	1	11	13	16	22
Kansas City	0	5	4	0	20
Boston	10	21	15	21	19
Philadelphia ⁶	0	2	6	0	18
New Orleans	0	11	4	8	15
Cleveland ⁷	0	7	9	8	10
St. Louis	0	0	1	8	9
Cincinnati ⁸	4	11	15	13	9
Louisville ⁹	0	7	3	2	9
North Texas	0	1	4	6	7
San Antonio	0	2	0	8	0
15 markets (weighted averages)	8	11	17	18	22

¹Data for 1952, 1956 and 1960 from: A Preliminary Analysis of the Federal Milk Order Program (Bartlett). Ill. Agr. Econ. Bul. 11, 1965, pp. 19-41. Data for 1966 from: Unnecessary Surpluses of Fluid Milk and Competition from Filled and Synthetic Milks. J.W. Gruebele, Ill. Agr. Econ. Bul. 17, 1968, pp. 39-51.

²Computed from USDA Statistical Bul. 470, 1970.

³1965 figure: Chicago not under a Federal order for part of 1966.

⁴Puget Sound.

⁵Southern Michigan.

⁶Middle Atlantic.

⁷Western Pennsylvania-Eastern Ohio.

⁸Ohio Valley.

⁹Louisville-Lexington-Evansville.

Source: Bartlett, Roland W. 1972. Dairy Marketing Facts, Dept. of Ag. Econ., University of Illinois Coop. Ext. Serv. Urbana-Champaign.

Federal market order areas in the United States expanded from 29 in 1947 to 83 in 1962. By 1970 the number had declined to 62 because of combining order areas. In 1962, federal milk order markets handled 47 percent of the total milk supply. By 1970, 59 percent was sold through these markets.¹¹

Another problem afflicting the dairy industry in general is the declining per capita consumption of fluid milk and many milk products. It is difficult to keep prices at a satisfactory level in a declining market. While the dairy industry is currently healthy, production cannot expand much without upsetting the price structure for market milk.

This problem affects processors as well as individual producers. Many milk manufacturing plants have closed or consolidated because of a declining supply of milk available for processing. The industry is constantly faced with excess capacity and procurement problems. One advantage of current trends is that processors buy from fewer but larger producers. This may eventually reduce the cost of obtaining the raw product and may be a factor in improving the quality.

¹¹USDA. 1971. Questions and Answers.

Much has been done by several organizations to promote the use of dairy products in the United States. The American Dairy Association spends millions of dollars annually on educational advertising of dairy products. Other agencies operating on a national scope are Dairy Research Incorporated and the National Dairy Council. The Idaho Dairy Association supplements this advertising primarily in Idaho. The Idaho Dairy Products Commission is also working to promote Idaho dairy products.

While the benefits of these programs on the consumer and the overall use of dairy products are difficult to measure, advertising and promotion by these groups have been effective. Considerably more could probably be well spent improving the image of and promoting dairy products.

Marketing Problems and the Processor

The milk processor also has marketing problems. As milk production declined in the 1960's, processing plants were plagued with over-capacity. It is difficult to run a processing plant efficiently on a volume much less than the facility was designed to handle. With declining volume, the processor is faced with a hard decision. Should he try to raise his producer price to attract more milk, reduce the plant capacity, discontinue operations, or attempt to join forces with some other processor in the area?

Each plant has different conditions so the answer would vary accordingly. The number of creameries in Idaho declined from 30 in 1955 to 10 in 1971, cheese factories fell from 37 to 20, and powdered milk plants from 10 to 6 (Table 9). Cream buying stations have virtually disappeared. There were 34 in 1955, only 2 in 1971. Even though milk volume has dropped, the number of plants has declined considerably more. The result is that milk handled per plant was much greater in 1971 than it was in 1955.

Several things happened as the processor tried to maintain or increase his volume. Small producers have been encouraged to continue production even though the cost of collecting small quantities of milk

Table 9. Plants licensed to manufacture dairy products, Idaho, in selected years, 1955 to 1971.

Type of license	Year			
	1955	1960	1965	1971
Creameries	30	22	17	10
Cheese factories	37	29	27	20
Cheese processing plants	2	1	1	1
Powdered milk plants	10	8	7	6
Ice cream plants	309	379	390	354
Condenseries	2	2	1	2
Cream buying stations	34	18	13	2

Source: Idaho Department of Agriculture and USDA, Idaho Dairy Production.

is high per unit of volume. Still, the small milk producer is rapidly disappearing. Many processors recognize this high collection cost and pay higher prices for larger volumes of milk per pickup. An additional price adjustment may be made for bulk tanks as opposed to cans. Bulk tanks tend to encourage higher quality milk and a larger volume per farm.

Another factor affecting total efficiency of the Idaho dairy industry is duplication of hauling facilities from farm to processing plant. Some competition is desirable in almost any business. But if three or four milk trucks from as many different companies serve a small area, the cost of hauling milk will be higher than if one truck could obtain all the milk in an area.

So far no good solution seems available for this problem except where two or more competing companies are cooperatives. In the case of cooperatives, merging could be the answer. This would not only decrease procurement costs but could also increase the efficiency of processing. Three dairy cooperatives in southwest Idaho recently merged in an effort to improve efficiency and increase the income realized by dairy farmers for milk sold.

Besides efficiency, processors are also faced with a wide range of health and sanitation regulations which must be rigidly observed. Transportation and storage for the manufactured products must also be considered.

Milk Price Paid to Idaho Dairymen

The price paid to Idaho dairy farmers for the milk they sell is largely determined by prices established in other parts of the nation with adjustments for location and for the proportion of milk going into fluid uses. Fig. 6 illustrates the relation of milk price changes to production in the U.S. Since Idaho produced only 1.3 percent of the nation's

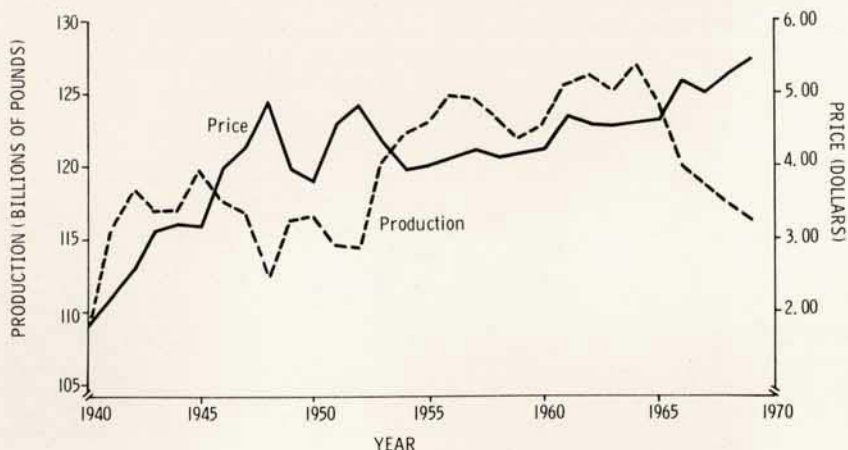


Fig. 6. Milk production and prices in the United States, 1940 to 1970.

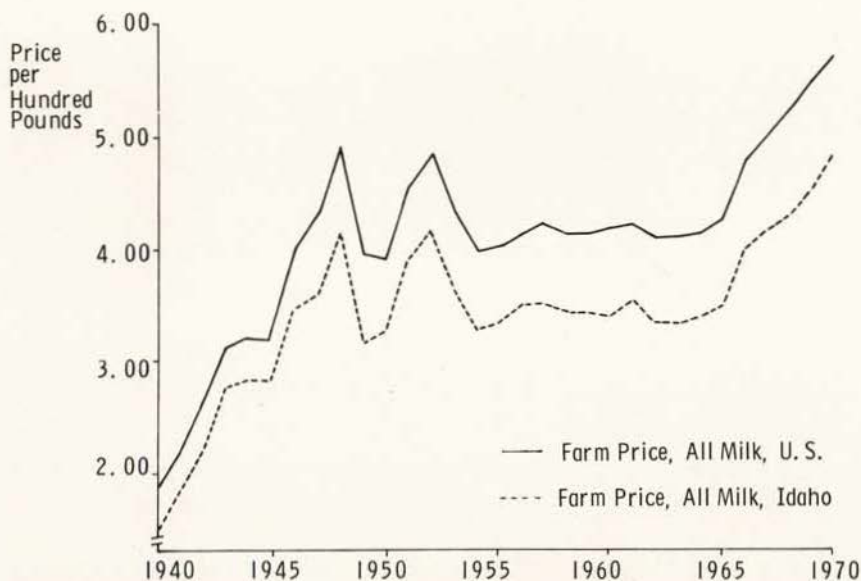


Fig. 7. U.S. and Idaho average farm prices for milk, 1940 to 1970.

milk supply in 1971, the national average price was not greatly affected by milk produced in Idaho. However, in 1969 Idaho ranked ninth in the nation in American cheese production and eighth in butter and nonfat dry milk.

The milk price in Idaho has been below the national average for most periods (Fig. 7). In 1970, the national average price for milk was \$5.71 per hundredweight. The Idaho price was \$4.86. Most of this difference can be explained by the fact that fluid use was less than 13 percent in Idaho compared to 52 percent nationally. The average manufacturing milk price nationally was \$4.70 per hundredweight compared to \$4.68 in Idaho. Milk used for fluid purposes was about \$7 per hundredweight for the nation. Thus, with more than \$2 per hundredweight difference between milk for fluid uses and manufacturing milk, the average price for all milk is greatly affected by the proportion used for each purpose.

Because Idaho has a limited population, most of the milk produced is manufactured and shipped to markets out of the state. This distance to markets further reduces the price received at the farm. The average price of all milk delivered to plants and dealers in Idaho has fluctuated between 80 and 89 percent of the national average price since 1940.

Average prices received for milk in Idaho have been upward from 1940 to 1970 (Fig. 8). Prices started at a low of \$1.50 per hundredweight and reach \$4.86 in 1970. The 1971 average price was \$5.06. When these prices are deflated with the index of prices received by farmers, the fluctuation was much less. The adjusted price was about the same in

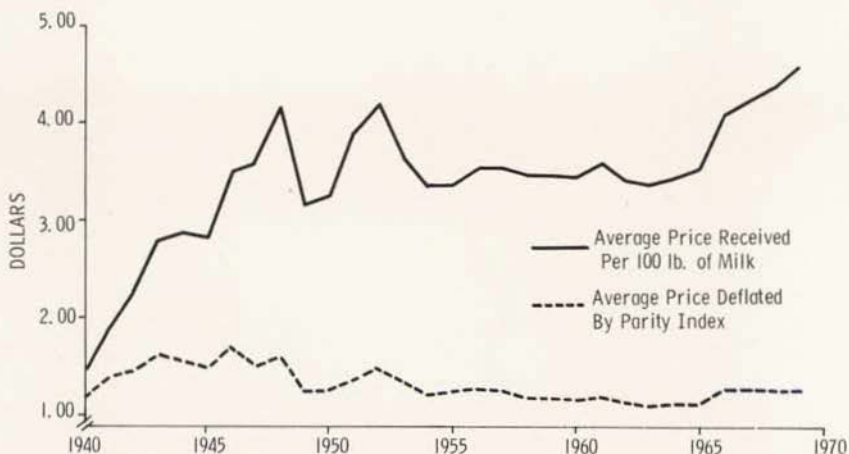


Fig. 8. Average annual prices received by farmers for milk sold, and deflated prices, Idaho, 1940 to 1970.

1970 as in 1940. The adjusted price gives an indication of the purchasing power of 100 pounds of milk over time, since the Idaho price was adjusted using the index of prices paid by farmers.

Even though the seasonality of milk production has been reduced somewhat, production is still higher from April through August. June is by far the largest production month with about 117 percent of the average month for the 1968-70 period. January and November are the lowest production months at about 90 percent of the average (Fig. 9).

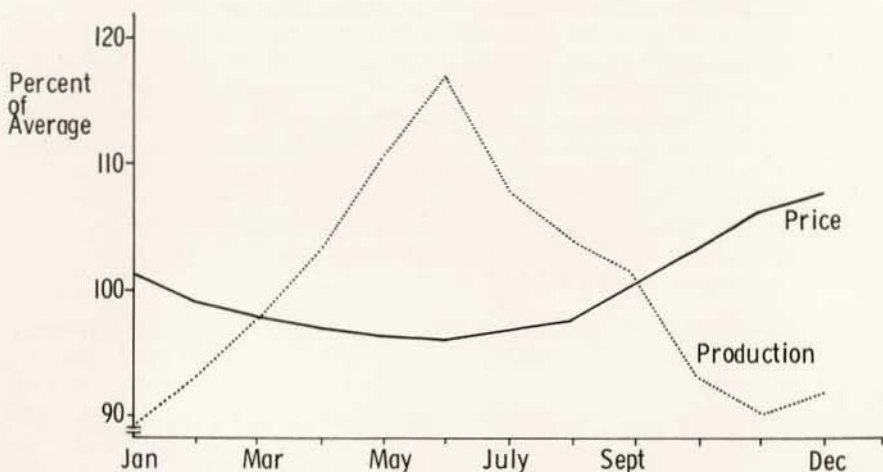


Fig. 9. Seasonal production and price movements as percent of averages, 1968 to 1970.

The Dairy Price Support Program

The dairy price support program has been in effect continuously since 1949. The Agricultural Act of 1948 set milk price supports at 90 percent of parity. The Agricultural Act of 1949 required the Secretary of Agriculture to support prices for milk and butterfat at whatever level between 75 and 90 percent of their parity prices he deemed necessary "to assume an adequate supply." The Secretary was to support prices by purchases of or loans on milk and butterfat. Purchases have been mainly made through the Commodity Credit Corporation (CCC).

The law has provided that the Secretary shall in so far as practicable, announce the support for a marketing year before the beginning of such year. He could not decrease it during the year but could increase it (up to 90 percent of parity as of the beginning of the marketing year) if he determined at any time during the year that a higher level would be necessary to assure an adequate supply, and he has done so on several years.¹²

Milk and milk product prices have been supported mainly by CCC purchases of butter, cheddar cheese, and nonfat dry milk. All offered products meeting CCC quality and specifications and in carlot quantities have been accepted by CCC.

Purchases by the CCC have removed excess dairy products from the market so that prices received by farmers have been at or above the support levels set by the Secretary. Purchase of butter, cheese, and nonfat dry milk has supported not only prices of these three products, but also those of other dairy products by removing surplus milk from the market.

Fluid milk prices have also been supported since milk marketing orders usually base Class I prices on the Minnesota-Wisconsin price for manufacturing milk plus some rather fixed amount. Dairy market analysts conclude that dairy farmers have received substantially higher prices for milk and cream as a result of the dairy support program than they would have received without it most of the time since 1940.¹³ It is difficult to know, however, what the situation might be now had the support program not been inaugurated.

Figure 10 illustrates the relationship of support price levels to average prices received for manufacturing milk. Market prices appear below the support only in cases where supports were drastically changed so that a series of low prices pulled down the average market price for the period.

¹²USDA, ASCS. 1969. Dairy Price Support and Related Programs, 1949-1968. Ag. Econ. Report No. 165. p. 11.

¹³Ibid., p. 12.

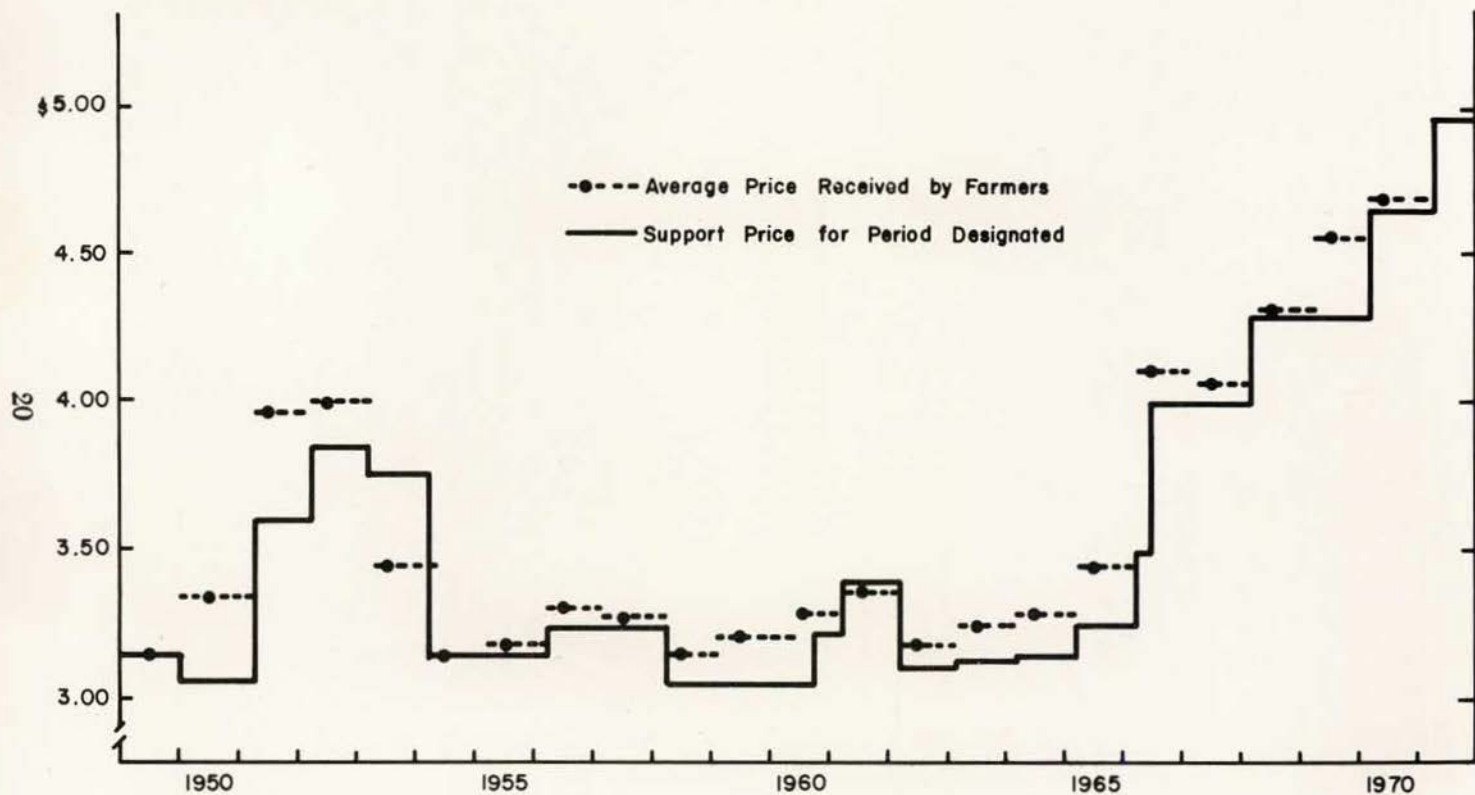


Fig. 10. Support prices and average prices received by farmers for manufacturing milk, 1949 to 1971.

Summary and Conclusions

The dairy industry has been a significant factor in Idaho agriculture since the late 1800's. Dairying is still third in importance among Idaho's agricultural enterprises.

The Idaho dairy industry is based primarily on manufactured dairy products rather than fluid milk because of the state's limited population and remoteness from large urban areas. About 13 percent of the milk produced is used for fluid products. The rest is processed into cheese, butter, nonfat milk powder and several other products.

Markets for these products are mostly out of state. The largest amount goes to California and other western markets because the transportation advantage Idaho has over the "dairy states" when shipping to these markets.

The price Idaho farmers receive for milk is largely determined by supply and demand for dairy products throughout the nation. This price is also influenced by the dairy support price.

Idaho average milk prices have been less than the national average primarily because such a small portion of total production is used for the higher valued fluid market. The national average milk price for 1970 was \$5.71 per hundredweight compared to \$4.86 in Idaho.

While dairy cow and dairy farm numbers have both declined gradually over the years in Idaho as well as nationally, milk production has been held relatively stable by increasing productivity per cow. Average annual production per cow in Idaho increased from 6,300 pounds in 1950 to 10,104 pounds in 1971, more than 60 percent.

Dairy processors have declined in numbers also. Those who continue have become larger and are operating at greater efficiency as technology has improved.

The dairy industry has had some serious adjustment problems over the years. The many farms and processing plants leaving the dairy business exemplify that fact that survival is only for those who adjust with changing economic condition. However, for those who have made the adjustments and used careful management, the dairy business has been profitable.

The future of dairying is somewhat hazy. Enterprise size will continue to increase. As transportation facilities improve, the number of processing plants will likely continue to decline and become larger. If the population continues to grow, and with increasing emphasis by the dairy industry in advertising, education and research, the demand for dairy products should remain strong.