Market Structure, Institutions, and Performance in the Fluid Milk Industry

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ABSTRACT

For 144 fluid milk markets throughout the country, the interrelationships of market structure, institutions, and performance in the postwar period are analyzed. Performance is measured in terms of marketing margins and innovativeness. The variables included explain about 40 percent of the variance in marketing margins and about 50 percent of the variance in innovativeness.

Keywords: Milk, marketing, structure, performance, margins.

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PREFACE

This study completes a series of research studies on the structure and performance of fluid milk markets in the United States. They include:

Alden C. Manchester, Nature of Competition in Fluid Milk Markets . . . Market Organization and Concentration, U.S. Dept. Agr., Econ. Res. Serv., Agr. Econ. Rpt. No. 67, Feb. 1964, 76 pp.

Alden C. Manchester and Leah Sitzman, Market Shares in Fluid Milk Markets, U.S. Dept. Agr., Econ. Res. Serv., Rev. April 1964, 73 pp.

Alden C. Manchester, "Dairy Marketing," in Agricultural Markets in Change, U.S. Dept. Agr., Econ. Res. Serv., Agr. Econ. Rpt. No. 95, July 1966, pp. 150-169.

Alden C. Manchester, The Structure of Fluid Milk Markets. Two Decades of Change, U.S. Dept. Agr., Econ. Res. Serv., Agr. Econ. Rpt. No. 137, July 1968, 51 pp.

Alden C. Manchester, Fluid Milk Markets. Number of Handlers and Market Shares, 1950-65, U.S. Dept. Agr., Econ. Res. Serv., Stat. Bul. No. 428, June 1968, 83 pp.

Alden C. Manchester and Floyd A. Lasley, "Dairy Products," in Market Structure of the Food Industries, U.S. Dept. Agr., Econ. Res. Serv., Mktg. Res. Rpt. No. 971, Sept. 1972, pp. 21-34.

This study was part of the Northeast Regional Dairy Marketing Project, NEM-40. The members of its technical committee contributed both data and ideas. Their contributions are very much appreciated. Other dairy marketing researchers throughout the country were also most generous in contributing information on fluid milk markets in their States. George Hickman, Economic Research Service, ably provided programming and other data processing services.

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HIGHLIGHTS

Measures of market structure, institutions, and performance in the U.S. fluid milk industry over time were developed based on new data and on concepts not previously used in such analyses. New approaches include quantifying market structure based on the concept of potential competitors and measuring innovativeness in terms of the adoption date of a substantial number of new containers, services, and products.

The number of fluid milk plants in the United States has declined more than three-fourths since 1948, while distribution areas from individual plants have been widening markedly. The result is that U.S. fluid milk markets have not become highly concentrated. Only in small markets--those with a total volume of less than 50 million pounds per month--were more than half of the sales made by the four largest potential competitors. In the largest markets, the market share of the four largest competitors averaged less than 25 percent.

The most striking change in market structure has been the growth of integrated supermarket firms. Their share of total sales rose from 2.9 percent in 1964 to 8.5 percent in 1971. The pace of competition is increasingly being set by supermarket firms, whether integrated or not. During the late 1960's, the market share of national and local firms declined.

During the postwar period, the institutions regulating the marketing of fluid milk were also changing. Regulation of the resale prices of fluid milk products by the States declined until 1956-57. In the next few years, several more States instituted resale price regulations. At present, 14 States maintain this type of regulation.

Trade practice regulation in States without resale price regulation increased sharply in the 1950's. Sanitary regulation--once a principal source of restrictions in milk marketing--is now only a minor factor, as most States and many local jurisdictions have reshaped their regulations to facilitate movement of fluid milk products. Similarly, restrictive licensing and the requirement for open dating are no longer important in restricting movement or increasing costs.

Market performance was measured in two ways: marketing margins and innovativeness. Average U.S. marketing margins for whole milk increased 6 cents per half gallon between 1954 and 1972. The increase would have been 50 percent larger if the shift to larger containers and from home delivery to store sales had not occurred. Marketing margins vary widely among the markets studied. They average somewhat higher in markets with resale price control than in uncontrolled markets.

Relationships between market structure, institutions, and performance were studied in 144 fluid milk markets throughout the United States. In markets sheltered from competition--whether by resale price regulation, restrictive licensing, restrictive sanitary regulation, or trade practice regulation--innovativeness was retarded. Resale price regulation and restrictive sanitary regulation also tended to raise marketing margins, although the requirement for open dating no longer did so.

Higher levels of concentration among fluid milk distributors raise marketing margins and lower innovativeness. Isolated markets--sheltered by geography rather than by institutions--have higher margins and are less innovative. Larger markets with more plants have somewhat lower marketing margins and are less innovative than smaller markets. In markets with significant integrated dairy store operations, marketing margins tend to be lower. Markets with substantial integrated supermarket operations tend to be more innovative.

MARKET STRUCTURE, INSTITUTIONS, AND PERFORMANCE IN THE FLUID MILK INDUSTRY

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INTRODUCTION

People interested in the organization of the economy are basically concerned with how various kinds of organization affect the performance of the economy and its component parts. A large body of economic theory has developed in the field of industrial organization or market structure. The basic premise is that market structure, conduct, and performance are related, and that, in the main, the direction of causation runs from structure to conduct to performance. It recognizes that many other elements influence structure, conduct, or performance at various stages in the production and marketing process.

In empirical studies of market structure, conduct, and performance, it is usually necessary to compare different industries, since most are organized on a national basis. However, the fluid milk industry is organized on a more local basis and presents a nearly unique opportunity to make cross-sectional comparisons of the interrelationships between market structure and performance among a large number of markets. This study makes such a comparison, relating differences in market structure, the institutional setting of various markets, and performance in two different dimensions for 144 markets throughout the United States. (Data were available on some but not all variables in additional markets, which are included in some tables.)

In its simplest dimension--number of plants--market structure appears to have changed dramatically in U.S. fluid milk markets in the postwar period. The first section of this report examines the changes in plant numbers and market shares in recent years and looks at the differences between markets.

The second section of the report considers the changes in the institutions which regulate and affect the marketing of fluid milk products, including resale price fixing, trade practice regulation, sanitary regulation, restrictive licensing, required open dating, and labor contract restrictions. Since these institutions are the product of State or local governments or of local union-handler labor negotiations, they vary greatly among markets.

In the third section of this study, measures of two aspects of market performance are developed--marketing margins and innovativeness. These measure the unit costs added to the price paid for the raw product by milk processors,

distributors, and retailers and the degree to which milk processors and retailers are willing and able to introduce new products, containers, and services.

Finally, the report analyzes the relationships among market structure, institutions, and performance in 144 fluid milk markets throughout the United States. This analysis provides measures of the effects of various structural and institutional variables on the performance variables of margins and innovativeness.

MARKET STRUCTURE CHARACTERIZED BY FEWER FIRMS

United States, 1948-71

The long-time trend to fewer fluid milk bottling plants accelerated during the 1960's. The total number of fluid milk plants operated by commercial processors in the United States declined from 8,527 in 1948 to 5,571 in 1959, an annual average decrease of 3.8 percent (table 1). During the 1960's, the annual average decrease accelerated to 7.9 percent, with the total number of fluid milk plants declining to 2,080 by 1971. The number of plants regulated by Federal orders rose to a peak in 1960-61 as the number of Federal orders increased but has been declining since then.

The number of fluid milk plants declined by about one-half between 1964 and 1971 (table 2). Plants operated by local proprietary firms and by single unit cooperatives decreased by about one-half. Plants of national dairy firms declined 29 percent, and those of regional firms and multi-unit cooperatives declined 15 percent each. The only category showing an increase was integrated supermarket plants (sole outlet), which increased 36 percent.

Since World War II, multi-unit firms have been consolidating plants. As transportation technology improved, the distribution area from a given plant could expand and it became uneconomical for a large company to operate as many plants as it had previously. Between 1964 and 1971, the number of plants operated by the seven national dairy firms declined from 264 to 188, a decrease of 76. For 56 of these plants, we were able to determine the circumstances surrounding the plant closing. Of this group, 55 percent were cases of plant consolidation. In 29 percent of the cases, the firm withdrew from the market entirely. Another 12 percent were due to FTC-ordered divestitures. In 4 percent of the cases, the company closed its plant and had its product custom-packaged by another processor.

The share of national firms in the total sales of fluid milk products declined nearly 4 percentage points between 1964 and 1970 to 23.3 percent (table 3). Regional firms increased their share of total sales by 2.6 percentage points and local proprietary firms lost 6.3 percentage points. The share of cooperatives increased from 9.7 to 11.5 percent of the total. The biggest increase was registered by integrated supermarkets (sole outlet), whose sales rose from 2.9 to 8.2 percent.

Table 1--Number of fluid milk bottling plants operated by commercial processors in the United States, December 1948-71

December	Regulated by Federal orders	Other	Total	Decrease from preceding year
	Number			Percent
1948	996	7,531	8,527	--
1949	978	7,321	8,299	2.7
1950	1,101	7,094	8,195	1.3
1951	1,289	6,578	7,867	4.0
1952	1,292	6,216	7,508	4.6
1953	1,256	5,982	7,238	3.6
1954	1,269	5,710	6,979	3.6
1955	1,404	5,322	6,726	3.6
1956	1,374	5,098	6,472	3.8
1957	1,794	4,393	6,187	4.4
1958	1,904	3,984	5,888	4.8
1959	2,128	3,443	5,571	5.4
1960	2,217	3,111	5,328	4.4
1961	2,217	2,742	4,959	7.0
1962	2,136	2,547	4,683	5.6
1963	2,060	2,382	4,442	5.1
1964	1,940	2,163	4,103	7.6
1965	1,785	1,958	3,743	8.8
1966	1,532	1,847	3,379	9.7
1967	1,456	1,522	2,978	11.9
1968	1,485	1,171	2,656	10.8
1969	1,478	995	2,473	6.9
1970	1,343	873	2,216	10.4
1971	1,248	832	2,080	6.1

Table 2--Number of fluid milk bottling companies and plants, by type of firm, United States, December 1964, 1970, and 1971

Type of firm	December 1964	December 1970	December 1971	Change, 1964 to 1971
	Companies			Percent
National firms	7	7	7	0
Regional firms	8	8	8	0
Local firms:				
Multi-unit	99	43	44	-53
Single unit	3,215	1,599	1,484	-54
Cooperatives:				
Multi-unit	35	23	23	-34
Single unit	152	83	70	-54
Integrated supermarkets: 1/				
Sole outlet 2/	21	25	26	+24
Others 3/	3	5	5	+60
Total	3,540	1,793	1,667	-53
	Plants			Percent
National firms	264	196	188	-29
Regional firms	71	59	60	-15
Local firms:				
Multi-unit	229	116	117	-49
Single unit	3,215	1,599	1,484	-54
Cooperatives:				
Multi-unit	115	102	98	-15
Single unit	152	83	70	-54
Integrated supermarkets: 1/				
Sole outlet 2/	36	47	49	+36
Others 3/	21	14	14	-33
Total	4,103	2,216	2,080	-49

1/ Firms whose primary business is operating supermarkets.
2/ Most milk sales through own stores.
3/ Substantial sales through outlets other than own stores.

Table 3--Sales of fluid milk products, by type of firm, 1964 and 1970

Type of firm	1964	1970	1964	1970	Change, 1964 to 1970
	--Mil. lbs.--		--Percent--		Percentage points
National firms	13,717	12,251	27.2	23.3	-3.9
Regional firms	2,580	4,038	5.1	7.7	+2.6
Local firms	27,020	24,780	53.5	47.2	-6.3
Cooperatives	1/4,896	6,020	9.7	11.5	+1.8
Integrated supermarkets: 2/					
Sole outlet 3/	1,471	4,287	2.9	8.2	+5.3
Other 4/	825	1,103	1.6	2.1	+0.5
Total	50,509	52,479	100.0	100.0	--

1/ Source: Organization and Competition in the Dairy Industry, National Commission on Food Marketing, Technical Study No. 3, 1966, p. 177. Original data from Farmer Cooperative Service.
2/ Firms whose primary business is operating supermarkets.
3/ Most milk sales through own stores.
4/ Substantial sales through outlets other than own stores.

In general, the decline in the number of fluid milk plants came about because smaller plants either closed or, for relatively small numbers, increased volume and moved into a larger size class. For a group of comparable Federal order and State markets, the total number of plants declined 36 percent between 1965 and 1970 (table 4). The number of plants selling less than 4 million pounds of fluid milk products per month declined. For the smallest plants, selling less than 100,000 pounds of fluid milk products per month, plant numbers decreased 56 percent. Plants selling more than 4 million pounds per month increased in every size category. The number of the largest plants, selling 20 to 30 million pounds per month, increased 71 percent, from 7 to 12.

Integration by Retailers

In recent years, supermarket groups--chains, voluntary groups, and retailer cooperatives--have been building or buying fluid milk plants. In 1964, 21 companies operated 36 fluid milk plants which sold most of their milk to their own stores (table 5). They accounted for 2.9 percent of the sales of commercial processors in that year. By 1971, 26 companies operated 51 plants and accounted

Table 4--Size distribution of fluid milk plants, comparable Federal order and State markets, 1965 and 1970

Monthly sales volume of packaged fluid milk products, thousand pounds	Plants in--		Percentage change, 1965 to 1970
	1965	1970	
	------Number------		Percent
Less than 100	495	220	-56
100-499	855	444	-48
500-999	300	183	-39
1,000-1,999	266	205	-23
2,000-2,999	128	108	-16
3,000-3,999	102	82	-20
4,000-4,999	48	65	+35
5,000-9,999	120	138	+15
10,000-14,999	33	38	+15
15,000-19,999	12	18	+50
20,000-29,999	7	12	+71
Total	2,366	1,513	-36

Table 5--Milk bottling plants operated by supermarket groups, December 1964, 1965, 1967, 1969, 1970, and 1971 1/

Item	Dec. 1964	Dec. 1965	Dec. 1967	Dec. 1969	Dec. 1970	Dec. 1971
			Number			
Plants:						
Federal orders	21	21	25	28	35	37
Other	15	15	14	13	14	14
Total	36	36	39	41	49	51
Companies	21	21	22	23	25	26
			Million pounds			
Volume:						
Federal orders	75.3	88.0	142.7	210.4	234.4	267.9
Other 2/	48.4	49.8	68.6	95.3	120.8	120.6
Total	123.7	137.8	211.3	305.7	355.2	388.5
			Percent			
Percentage of sales of commercial processors	2.9	3.2	4.9	7.0	8.1	8.5

1/ With most sales going through own stores. At least 5 other supermarket companies operate milk plants which supply other outlets in addition to their own stores. Their volume is not included here. In 1969, sales by such companies to their own stores accounted for 0.5 percent of sales of commercial processors.

2/ Partly estimated.

for 8.5 percent of sales of commercial processors. The total volume processed in such plants increased from 124 million pounds in 1964 to 388 million in 1971.

In addition, at least five other supermarket companies operate milk plants which supply other outlets in addition to their own stores. In 1969, sales by such companies to their own stores accounted for 0.5 percent of sales of commercial processors.

The importance of integrated supermarket plants varies substantially among regions. In 1970, the greatest concentration was in California, where seven plants accounted for 22 percent of the sales of commercial processors (fig. 1). The next highest concentration was in the Ohio-Michigan area, where five plants accounted for 13 percent of sales. Integrated supermarket plants in the Missouri-Kansas-Nebraska area accounted for 11.5 percent of the sales of all commercial processors. In the South Atlantic area from Philadelphia south and west to Alabama and in Indiana-Illinois, integrated plants accounted for about 9 percent of sales. Integrated plants accounted for less than 5 percent of sales both in New York-New England-North Jersey and in the south central area from Mississippi to Texas. There were eight integrated supermarket plants in the Mountain-Pacific Northwest area, but sales data are not available. There were no integrated plants in Alaska, Hawaii, Wisconsin, Minnesota, and the Dakotas.

Integrated dairy store chains also operate a number of fluid milk plants. Complete figures are not available on all such plants in the United States. Sales figures are available for a number of integrated dairy store operations regulated under Federal orders. Sales of these plants increased 73 percent between 1964 and 1971, from 1.3 to 2.2 percent of sales of all fluid milk plants.

Most convenience foodstores purchase fluid milk products from processing plants owned by dairy companies. However, one large operator of convenience foodstores also operates a number of fluid milk bottling plants. These plants sell not only to the convenience stores operated by a company but also to other outlets. In 1969, integrated dairy and convenience stores combined accounted for 4.2 percent of the sales of commercial processors.

Local Markets

In previous work (5, 6) 1/ dealing with the structure of local fluid milk markets, USDA's Economic Research Service used the Federal order as the definition of the market. This is satisfactory in showing changes in concentration ratios or other structural characteristics over time, but it is less than satisfactory in making comparisons among markets. Federal orders vary tremendously in size. A number are regional in scope and include several local markets which are more or less independent.

In view of these problems, local fluid milk markets were defined without regard to regulatory areas such as Federal orders or political subdivisions.

1/ Underscored numbers in parentheses refer to Literature Cited, p. 34.

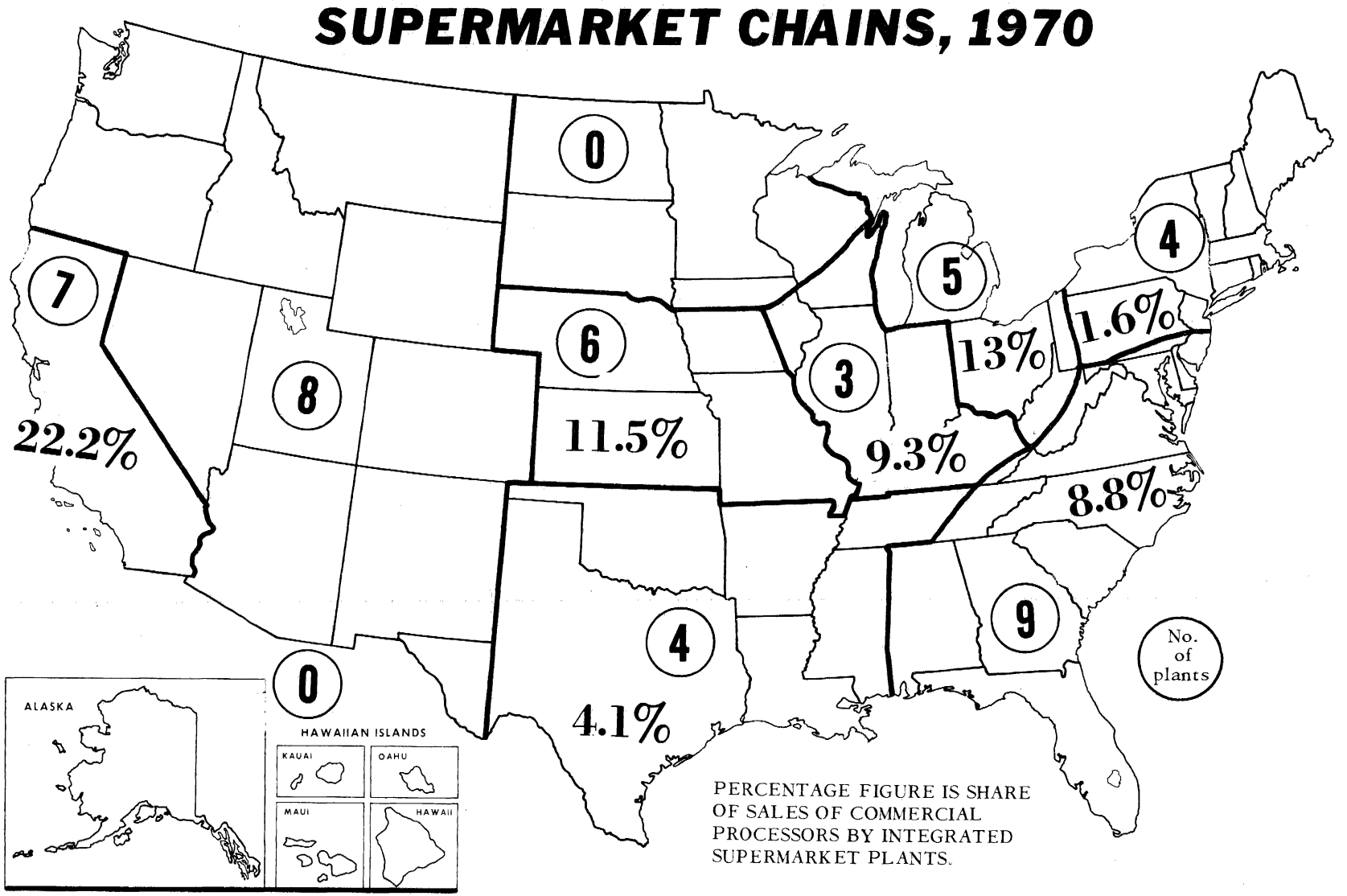
MILK PLANTS OPERATED BY SUPERMARKET CHAINS, 1970
0
7
8
6
3
5
4
4
9
0
22.2%
11.5%
9.3%
13%
1.6%
8.8%
4.1%
No. of plants
ALASKA
HAWAIIAN ISLANDS
KAUAI
OAHU
MAUI
HAWAII
PERCENTAGE FIGURE IS SHARE OF SALES OF COMMERCIAL PROCESSORS BY INTEGRATED SUPERMARKET PLANTS.
U.S. DEPARTMENT OF AGRICULTURE
NEG. ERS 450-74 (1) ECONOMIC RESEARCH SERVICE

Figure 1

The basic concept used in defining local fluid milk markets was that of "potential competitors." The starting point in each case was a city or metropolitan area. Each fluid milk bottling plant which was a potential competitor in that city or metropolitan area was included in the definition of the local market. This means, of course, that some plants were included as potential competitors in several different markets.

Two major factors determine whether or not a plant is a potential competitor in a metropolitan area: the size of the plant and the distance from the market center. For this purpose, all plants located within 50 miles of the market center were included. Plants located between 51 and 250 miles from the market center were included if they had monthly sales of 1 million pounds of fluid milk products or more.

By including all plants within 250 miles with sales of at least 1 million pounds per month as potential competitors, substantially all of the plants that were actually supplying retail stores in 56 markets in 1969-71 would have been included. In these 56 markets, 91 percent of the milk came from plants within 150 miles of the market and none from plants more than 250 miles from the market (4, p. 4). Two-thirds of the milk came from plants within 50 miles and only 1.4 percent from plants between 200 and 250 miles from the market. Store brand milk produced in integrated plants accounted for all of the milk which moved more than 200 miles. In a few isolated instances in the West, which was not included in the 56-market survey, milk produced in integrated supermarket plants moved as far as 400 miles.

In the case of firms which operated more than one plant within the area of potential competition, only the largest plant was included. Usually, this was the plant nearest the market center, but not always.

For plants more than 50 miles from the market center, the total sales figure was reduced. A large plant located 200 miles from the market would incur greater costs in delivering milk to the market than would one within the market itself. Thus, a potential competitor would be at some disadvantage in competing for sales to outlets at such a distance. To allow for this, the actual sales of such plants were reduced by a factor which was proportionate to the cost of delivering milk from the plant to the market. This factor was developed by taking the inverse of the cost function for long distance shipment of packaged fluid milk products (8) and fitting the resulting function so that the factor equaled 1.0 at a distance of 50 miles and 0 at a distance of 251 miles. Since the market power of a potential competitor is taken as being proportionate to its sales volume, this procedure made the market power of distant plants proportionate to the cost of moving the milk from the plant to the market and the volume.

The reader should note that figures calculated as described above are not comparable to those calculated on other bases and previously published (5, 6, 9). The data are not available to calculate these figures before 1964.

The 144 markets studied ranged in size from those capable of supplying 3 million pounds per month to those which could supply 466 million pounds per month. The eight markets in the smallest size class had an average of 10 plants

per market (table 6). The larger markets had more and larger plants. Average concentration (the market share of the four largest firms) declined fairly steadily from 79.9 percent in the smallest markets to 23.3 percent in the 14 largest markets. In markets with total sales of less than 75 million pounds per month, the share of national and regional firms varied irregularly from 35 to 43 percent. In larger markets, the share of national and regional firms declined, reaching an average of 20.4 percent in the largest markets.

The concentration index takes account of the relative size and the number of all firms in the market. It is calculated by computing the share of each firm in the market (in decimal form rather than as a percentage) and squaring that number. These squared numbers are summed for all firms in the market. Thus, if one firm had all of the sales in the market, the concentration index would be 1.0000. If there were two firms and each had half of the sales, the concentration index would be 0.5000. If 10 firms each had equal share of the market, the concentration index would be 0.1000. The following example may help to clarify the calculation of the concentration index:

Firm number	Share of market	Share squared
1	0.50	0.25
2	.20	.04
3	.20	.04
4	.10	.01
	1.00	.34

For this hypothetical market with four firms, the concentration index is 0.34. Of course, there is an infinite variety of situations which could yield any particular value of the concentration index. But, in general, small numbers of firms or large shares of one or more handlers tend to yield a higher value of the concentration index.

The average concentration index declined from .23 for the smallest markets to .03 for the largest markets, reflecting more firms in larger markets and smaller shares of the larger firms.

Concentration is affected both by size of market and degree of isolation (table 7). In all sizes of markets, concentration averages highest in the isolated markets--those which have arbitrarily been given a figure of 250 miles. In markets with an isolation index (weighted average distance of plants from the market center) of 1-99 miles, concentration averaged from 8 to 24 percentage points lower than in isolated markets of the same size. Markets with an isolation index of 100-199 miles--those which are fairly near some other large market--had lower concentration ratios than either of the other two groups.

Changes in Structure, 1965-69

In a sample of 106 local markets for which comparable data were available for 1965 and 1969, the average market share of the four largest firms (concentration) declined 0.3 percentage point between 1965 and 1969 (table 8). Concentration increased in 46 markets, was unchanged in 2, and declined in 58.

Table 6--Structural characteristics of 144 fluid milk markets, by market size, 1969-70

Market size, mil. lbs. per month	Average plants	Average market share		Average concentration index 1/	Markets
		4 largest firms	National and regional firms		
	No.	------Percent------			No.
3-9 (av. 6)	10	79.9	38.1	.2288	8
10-19 (av. 15)	16	72.2	43.4	.1726	13
20-29 (av. 25)	22	60.8	35.6	.1410	19
30-49 (av. 38)	29	53.3	41.9	.1105	23
50-74 (av. 57)	47	46.7	38.3	.0879	19
75-99 (av. 87)	58	39.5	30.9	.0654	14
100-199 (av. 148)	100	30.1	26.9	.0427	34
200-474 (av. 315)	137	23.3	20.4	.0277	14
All markets (av. 93)	58	46.9	33.8	.0953	144

1/ Herfindahl index of market structure. See text, p. 10.

Table 7--Concentration by market size and isolation, 144 markets, 1969-70

Market size	Average concentration 1/ of--			
	Markets with isolation index of--			All markets
	1-99 miles 2/	100-199 miles 2/	250 miles 3/	
	Percent			
3-9	72.2	67.1	96.0	79.9
10-19	72.1	62.6	85.1	72.2
20-29	65.0	40.0	4/86.6	60.8
30-49	55.4	37.7	63.3	53.3
50-74	50.5	35.7	4/67.9	46.7
75-99	43.2	25.9	--	39.5
100-199	33.7	22.6	--	30.1
200-450	24.0	18.9	--	23.3

-- = None.
1/ Concentration--market share of 4 largest firms.
2/ Isolation index--weighted average distance of plants from market center.
3/ Markets where there was no significant number of plants outside the immediate area and within 250 miles.
4/ 1 market.

Table 8--Changes in concentration and related variables, 106 comparable markets, 1965-69

Change in market share of four largest firms, 1965-69, percentage points	Average market share of four largest firms		Market size,	Number of firms,	Change in market share, 1965-69, of--		Markets
	1965	1969	1965	1965	National and regional firms	Integrated supermarkets	
	-----Percent-----		Mil. lbs.	Number	---Percentage points---		Number
+7.0/9.0 (av. +8.4)	40.9	49.3	65	56	-5.0	+3.7	5
+5.0/6.9 (av. +5.9)	56.9	62.8	55	43	-3.6	+3.0	5
+3.0/4.9 (av. +4.2)	32.8	37.0	357	138	-3.3	+1.4	4
+2.0/2.9 (av. +2.3)	43.6	45.9	142	84	-6.1	+2.7	4
+1.0/1.9 (av. +1.3)	52.0	53.3	63	50	-2.5	+2.3	10
+0.1/0.8 (av. +0.4)	45.4	45.8	113	97	-2.1	+3.6	18
0	53.5	53.5	29	36	-10.0	+3.3	2
-0.1/0.9 (av. -0.5)	32.7	32.2	128	108	-1.8	+4.9	16
-1.0/1.9 (av. -1.4)	31.9	30.5	143	119	-0.1	+3.9	13
-2.0/2.9 (av. -2.5)	38.7	36.2	110	97	-0.1	+5.3	11
-3.0/3.9 (av. -3.4)	45.0	41.6	99	73	+0.6	+5.2	6
-4.0/5.9 (av. -4.7)	58.8	54.1	40	38	+1.2	+2.1	6
-6.0/9.0 (av. -8.3)	38.8	47.1	66	60	+0.2	+4.8	6
All markets (av. -0.3)	41.7	41.4	110	86	-1.8	+3.9	106

There does not appear to be any relationship between the level of concentration at the beginning of the period, market size, or number of firms and the change in the concentration ratio. There does appear to be some relationship between the change in the market share of national and regional firms and the change in concentration from 1965 to 1969.

On the average, in markets with an increase in concentration and in those with decreases of up to 3 percent, the market share of national and regional firms declined. Only in 18 markets with decreases of 3 percent or more in concentration were there increases in the average share of national and regional firms. Overall, the market share of national and regional firms declined 1.8 percentage points.

There appears to be little relationship between the change in the market share of integrated supermarkets and concentration. However, the largest increases in the market share of integrated supermarkets occurred in those markets with declining concentration.

RESTRICTIVE REGULATION BY INSTITUTIONS

Government Regulation

The fluid milk industry is often referred to as "the most regulated industry in the country." While it seems likely that the alcoholic beverage business may also be a candidate for these honors, it is certainly true that the fluid milk business is regulated from more angles by more different Government agencies than most other food industries. For a comprehensive study of many of these forms of regulation, see (13) and (9, ch. 11).

Producer Prices

Prices paid to producers for fluid milk of fluid grade are regulated by Federal orders and by 16 States (table 9). In addition, New Jersey regulates producer prices under concurrent regulation with Federal orders which cover the entire State. The Commonwealth of Puerto Rico regulates producer prices. In 1971, Federal orders regulated the prices paid to producers on 79.5 percent of the fluid grade milk sold to plants and dealers and the 16 States regulated an additional 17.6 percent. The share under Federal regulation has increased from about one-third in the late 1940's, while that under State regulation has decreased from nearly one-fourth at that time. In a number of cases, Federal orders were introduced after State control legislation had been repealed or declared unconstitutional by the courts. Only 4 percent of the fluid grade milk sold in the United States was not under either Federal or State regulation in 1972. Because of the near-universality of Government regulation of producer prices, unregulated prices are not considered in the analyses in the next section.

Table 9--Extent of Federal and State regulation of producer prices of fluid grade milk, 1945-72

Year	Federal orders 1/	Markets under Federal regulation 2/	States regulating producer prices of milk 3/	Percentage of total fluid grade milk sold to plants and dealers under--	
				Federal orders	State regulation 3/
	Number			Percent	
1945 4/	28	28	16	34.6	23.5
1946 4/	30	30	16	35.6	23.4
1947 4/	31	31	16	36.6	24.2
1948	30	31	16	33.8	22.3
1949	33	34	16	39.2	24.5
1950	39	40	16	41.4	24.2
1951	46	47	16	43.3	24.1
1952	49	52	16	47.1	24.1
1953	50	53	16	48.8	23.8
1954	53	57	16	48.7	23.3
1955	63	67	16	50.0	24.1
1956	68	72	16	51.3	24.0
1957	71	75	16	53.6	23.7
1958	74	81	16	56.2	22.4
1959	79	86	16	60.3	21.7
1960	80	89	16	64.6	21.1
1961	83	93	18	67.5	21.2
1962	85	96	18	70.3	21.5
1963	83	96	19	70.5	21.3
1964	82	96	18	70.8	22.0
1965	76	96	19	70.0	22.4
1966	74	97	19	69.6	22.5
1967	74	100	19	70.7	22.1
1968	76	101	18	74.0	20.2
1969	68	104	18	76.9	18.8
1970	69	105	17	79.1	17.9
1971	62	105	16	79.5	17.6
1972	62	105	16	5/78.0	5/18.0

1/ Federal orders and agreements effective during any part of the year.
2/ This series counts markets, not orders. It ignores mergers.
3/ Excludes any joint or concurrent regulation with Federal orders.
4/ Total fluid grade milk sold to plants and dealers estimated.
5/ Preliminary.

Resale Prices

Resale prices--either wholesale or retail--are not regulated under Federal orders, but they are regulated by 14 States (table 10). Such regulation started in 1933, when chaotic conditions in milk markets resulting from the Great Depression created a demand for action. It reached a peak in 1935 with 21 States regulating resale prices, followed by a general decline until the middle 1950's. In the late 1950's and early 1960's a number of States which had not previously regulated resale prices passed such legislation. In the late 1960's, three States ceased regulating resale prices and three others began.

While States differ in their regulation of resale prices--some set minimum prices, some maximum prices, and some both minimum and maximum--in every State except New Jersey and Vermont the effect of regulation is to fix prices. In New Jersey, as a matter of policy, minimum prices are set at a stop-loss level, and market prices are generally above these levels. The practice has been similar in Vermont in recent years.

There is a very strong tendency under resale price regulation to maintain the status quo (9, p. 170). Any change represents a potential competitive threat to someone and is therefore resisted. Often the rate of innovation--whether involving new containers, new services, new products, or changes in a price structure--tends to be slower in areas with such regulation than elsewhere. The nearly universal use of cost figures as justification for changes in wholesale or retail price structures creates a strong tendency toward average-cost pricing. In such a situation, changes in price structure to reflect lower-cost containers or methods of distribution are resisted. Prices seem to be set at levels reflecting average or higher costs of all distributors. In these cases, the distributor whose costs are below average cannot reduce prices to reflect his own cost--thereby removing a strong incentive to lower prices.

Trade Practice Regulation

Most States with resale price-fixing authority also have authority to regulate trade practices. A number of other States have trade practice laws dealing specifically with the dairy industry. State trade practice laws prohibit all or most of the following: Giving of free merchandise, unreasonable extension of credit, secret rebates and discounts, free signs, unearned advertising allowances, loaning of money, furnishing of free equipment, free repairs and services, sales below cost at the wholesale or retail level or both, area price discrimination, and purchaser price discrimination (9, p. 173). Several States require a minimum markup, particularly by retailers. Others require price filing with the State agency.

The potential effects of trade practice regulation are somewhat mixed. Where minimum markups are specified or price filing is required, the tendency is somewhat similar to that of resale price fixing and prices are likely to be somewhat higher than they would be in the absence of trade practice regulation. However, by prohibiting many other forms of competition such as those listed above, there is some tendency to force competition more strongly into price competition. Since processors are inhibited in competing in other ways, the focus of their efforts to obtain additional business may be on price.

Table 10--States controlling producer and resale prices for milk, 1933-72 1/

Year	Number of States controlling--		Year	Number of States controlling--	
	Resale prices	Producer prices		Resale prices	Producer prices
1933	7	9	1953	13	16
1934	13	16	1954	13	17
1935	21	18	1955	12	16
1936	16	20	1956	11	16
1937	18	21	1957	11	16
1938	16	20	1958	12	16
1939	17	20	1959	14	15
1940	17	20	1960	13	16
1941	15	19	1961	14	19
1942	14	16	1962	13	19
1943	14	16	1963	14	20
1944	14	16	1964	15	20
1945	14	16	1965	14	21
1946	14	16	1966	15	21
1947	14	16	1967	15	21
1948	13	16	1968	15	19
1949	12	16	1969	15	19
1950	12	16	1970	15	18
1951	12	16	1971	14	17
1952	12	16	1972	14	17

1/ Excludes Puerto Rico. Includes concurrent regulation of producer prices with Federal orders.

Sanitary Regulation

Sanitary regulation of milk rests on the need to protect the public health. Milk is widely used as an article of diet, particularly for children. It is susceptible to contamination and provides an excellent medium for the growth of bacteria. The need for sanitary regulation of milk supplies and processing is now universally recognized and practically all milk supplies in the United States are subject to regulation by State or local authorities.

The pervasiveness of sanitary regulation by local authorities in earlier years made it an ideal means of instituting restrictions which might provide an advantage for local producers or processors. There are four major ways in which sanitary regulation can be used to impose such restrictions: (1) It may prohibit certain activities, such as distributing milk pasteurized in a plant located beyond the city limits; (2) there may be differences in details of regulations of different jurisdictions which are not of material public health significance but encumber or prevent the flow of milk between markets; (3) regulations may be enforced in a discriminatory manner; and (4) duplication of inspection, especially where there are substantial charges for inspection, or other burdensome requirements may substantially limit the number of outlets to which milk can be moved (13, p. 19).

The restrictiveness of some forms of sanitary regulation has long been recognized and a number of the more extreme forms have been struck down by the courts. The U.S. Public Health Service, through its model ordinance and code, has encouraged States and localities to adopt standard regulations so that differences between regulations are no longer as significant as they once were. Duplicate inspections, which are primarily cost-increasing rather than barriers to movement, have been declining in recent years as more and more States have adopted State-wide regulation of fluid milk supplies and processors. However, as recently as 1967, fluid milk plants in the United States paid regulatory sanitation authorities $3.4 million in fees and had associated costs of $0.5 million, of which $638,000 was for duplicate inspection (3, p. iii).

In a few markets, sanitary regulation is still somewhat restrictive. These markets were identified and a rough index of restrictiveness was constructed for each, in an attempt to measure any possible effects of such restrictiveness on the performance of the fluid milk industry.

Licensing

In many States, licenses or permits are required for the operation of a fluid milk plant. In some cases, these are issued in connection with resale price regulation. In others, licensing is independent of such regulation. In a few cases, the issuance of such licenses has been restricted either in number or in the geographic area which a plant is permitted to serve. Such restrictive licensing practices were once fairly widespread, but in recent years they have been followed in only a few areas. Where they have been followed, they constitute a barrier to entry or to market expansion.

Dating

Forty years ago, it was fairly common for sanitary authorities to require open dating of fluid milk products. Such regulations became much less common in the last 20 years as the keeping quality of fluid milk products was improved and the need for dating was seen as less acute. There has been a renewed interest in open dating of all kinds of perishable food products in the last 5 years and quite an increase in the voluntary use of such dates.

Earlier research had shown that open dating of fluid milk increased costs, since consumers selected containers with the latest date causing the returns of milk from the retail store to be larger when the product was dated (2). More recent research has shown that this no longer appears to be true (12).

Labor Contracts

Most fluid milk processing and distribution is performed by unionized labor. Only 10 of 152 markets in this study had nonunion labor forces. In addition to wages and hours, many union contracts specify certain restrictions, particularly on delivery practices. In some cases, certain practices are prohibited by the contract. Alternatively, the practice may be either restricted or made subject to negotiation between union and processor.

Such restrictions obviously can delay the introduction of an innovation in a milk market. Costs may also be raised by restrictions on lower cost methods of doing business. An attempt to measure these effects, if present, is made in the final section of this report.

PERFORMANCE MEASURED TWO WAYS

Measuring market performance has long been a problem for economists. The aspects of market performance usually identified are: production efficiency (including technological progressiveness), price-cost relations (excess profits), exchange efficiency, sales promotion, products (quality, product improvement, and variety), conservation, and external effects (11, pp. 86-91). Some of these are not relevant or important in the fluid milk industry.

Sales promotion is at such low levels in the fluid milk industry (except for generic promotion by organized producer groups and some advertising of specialty products by large national firms) that it does not appear to be of major importance in appraising market performance. Conservation of nonrenewable resources does not appear to be a performance issue in the fluid milk business. Similarly, the external effects, including those resulting in water pollution and those involved in solid waste disposal (particularly of containers), do not seem to warrant study. The water pollution problems in the dairy industry are concentrated in cottage cheese and hard cheese production and are minor in the fluid milk industry. The solid waste (container) disposal problems are part of a much larger solid waste problem and the contribution of the dairy industry appears to be relatively small.

Exchange efficiency is rather difficult to deal with in the fluid milk industry. Producer prices are generally based on minimum prices under Governmental regulation and, while this is a most interesting subject, it does not lend itself to study within the framework of this research effort. The considerations in exchange efficiency typically deal with commodity markets. Since the raw milk market is, to say the least, strongly influenced by Federal and State regulation, exchange efficiency does not appear to be a major consideration in a cross-sectional study of fluid milk markets.

We were unable to deal directly with production efficiency as a facet of market performance in this study. Of course, the measurement of marketing margins captures some aspects of production efficiency, but it was not possible to separate the effects of production inefficiencies from those of other contributing factors.

Of all the aspects of market performance, it was both desirable and possible to measure marketing margins and innovations in this study. In marketing margins, we capture some of the effects of production efficiency and price-cost relations. Innovations reflect both technological progressiveness and product change.

Since not all buyers have the same wants and needs regarding both product and price, the general level of satisfaction with the performance of a market can be expected to increase as diversity of both product and price increases, at least up to some point. As with most other measures which attempt to provide some insight into performance, the optimal level of performance is presumably somewhere near the middle of the range of possible outcomes. It seems highly likely that a level of satisfaction in relation to any possible measure of performance is U-shaped (inverted). With regard to the performance measures selected for this study, it seems likely that lower margins indicate better performance up to some point. Beyond that point, marketing firms would go bankrupt at such a rate that consumers could not obtain the product. Similarly, more innovation is generally to be desired compared with less, but too much innovation will result in markedly higher costs for a very large number of products, containers, and services, and margins would rise. Again, there appears to be an optimal rate somewhere between the slowest and most rapid rates of innovation. In short, too much of anything is not a good thing.

Margins

For this study, a new series on marketing margins for whole milk was constructed. This series includes all containers in general use for whole milk--quart, half gallon, gallon, and home dispenser--weighted in proportion to actual sales. This provides some additional measures of behavior of marketing margins and prices for milk. Other series compiled on a regular basis are based on the prices of a single container, in recent years the half gallon.

The series constructed in this study provides measures of a weighted margin for home delivery sales, store sales, and all sales combined for 155 markets throughout the United States and for the United States.

All available sources of information were used in compiling this series. Data on retail prices were obtained from The Fluid Milk and Cream Report; annual reports of Federal order market administrators; surveys of retail prices, particularly (4); and a survey by the North Central Regional Dairy Marketing Technical Committee (15). Information on sales of whole milk by size and type of container which provided the weights for combining retail prices was obtained primarily from Federal order statistics. For non-Federal order markets, data were obtained from a variety of sources including surveys both of plant sales and of consumer purchases. Where information was available only for periods separated in time, the figures for the intervening years were interpolated.

United States

Weighted average marketing margins for whole milk in the United States increased from 23.3 cents per half gallon equivalent in 1954 to 29.3 cents in 1972 (table 11). Thus, weighted average margins for all outlets increased 6 cents per half gallon in 18 years, while margins for home delivered sales increased over 12 cents and those for store sales nearly 7 cents. There was a substantial shift during this period from home delivery of milk to store sales (7, table 6).

In general, margins rose from 1954 until the early 1960's, leveled off through 1966, and then began a fairly rapid rise. The farm price increased 9.2 cents per half gallon since 1954, with about 8 cents of the increase occurring after 1965. Between 1956 and 1965, there were year-to-year variations in the farm price but the level did not increase significantly.

Between 1954 and 1969, weighted average retail prices increased 9.9 cents (table 12). If the distribution of sales between outlets--home delivery and store--had not changed over the period but the shift to larger containers within each outlet had proceeded, retail prices would have increased 12.5 cents over the 15-year period. If the distribution between outlets and containers had remained constant throughout the period, average retail prices would have increased 13.1 cents. Thus, the shift from home delivery to store outlets contributed about 2.6 cents per half gallon to holding down the average margin and the shift to larger containers contributed about 0.6 cents.

Local Markets

To compare margins among markets where the proportions of home delivery and store sales varied widely, the margins were standardized. For this measure, marketing margins for whole milk sold on home delivery routes and through stores were weighted 30 percent home delivery and 70 percent store in all markets. The margins varied widely between markets, even after this standardization was carried out (table 13). Marketing margins were above the U.S. average in 47 percent of the markets and below in 53 percent. In 82 percent of the markets with resale price control, margins were above the U.S. average, compared with 36 percent of the markets without resale price control.

In a similar comparison using the actual proportion of home delivered and store sales in each market, the following percentages of markets were above the

Table 11--Prices and margins for whole milk, United States, 1954-72

Year	Farm price	Transportation and other charges	Plant buying price	Retail prices				Farm-to-retail margins			
				Half gallon paper in stores	All containers			Half gallon paper in stores	All containers		
					Home delivered	Store	Total		Home delivered	Store	Total
	Cents per half gallon										
1954	21.0	1.7	22.7	42.3	47.0	42.5	44.8	21.3	26.0	21.5	23.3
1955	21.2	1.7	22.9	42.5	47.8	42.8	45.2	21.3	26.6	21.6	24.0
1956	22.0	1.7	23.7	43.8	48.8	44.1	46.2	21.8	26.8	22.1	24.2
1957	22.6	1.7	24.3	45.5	50.0	45.8	47.6	22.9	27.4	23.2	25.0
1958	22.4	1.7	24.1	45.7	51.6	46.1	48.4	23.3	29.2	23.7	26.0
1959	22.5	1.7	24.2	46.1	51.6	46.5	48.6	23.6	29.1	24.0	26.1
1960	22.6	1.7	24.3	46.5	52.7	47.0	49.2	23.9	30.1	24.4	26.6
1961	22.3	1.7	24.0	46.5	52.7	46.7	49.1	24.2	30.4	24.4	26.8
1962	22.1	1.6	23.7	46.2	52.8	46.6	49.0	24.1	30.7	24.5	26.9
1963	21.9	1.5	23.4	46.1	52.2	46.5	48.7	24.2	30.3	24.6	26.8
1964	22.0	1.5	23.5	46.4	52.4	46.5	48.6	24.4	30.4	24.5	26.6
1965	22.1	1.6	23.7	46.3	52.6	46.8	48.5	24.2	30.5	24.7	26.4
1966	24.1	1.6	25.7	49.0	54.8	48.9	50.7	24.9	30.7	24.8	26.6
1967	25.6	1.6	27.2	50.7	57.2	50.6	52.4	25.1	31.6	25.0	27.2
1968	26.9	1.6	28.5	52.6	60.1	52.5	54.3	25.7	33.2	25.6	27.4
1969	27.7	1.7	29.4	53.9	62.5	53.8	54.7	26.2	34.8	26.1	27.0
1970 1/	28.8	1.7	30.5	56.2	65.5	56.1	57.0	27.4	36.7	27.3	28.2
1971 1/	29.6	1.7	31.3	57.7	67.2	57.6	58.6	28.1	37.6	28.0	29.0
1972 1/	30.2	1.7	31.9	58.6	68.6	58.5	59.5	28.4	38.4	28.3	29.3

1/ Preliminary.

Table 12--Average retail prices for whole milk, all containers and outlets, various measures, 1954-69

Year	As purchased	With outlets in constant proportion	With outlets and containers in constant proportion
		Cents per half gallon	
1954	44.8	43.9	43.4
1955	45.2	44.3	43.9
1956	46.2	45.4	45.0
1957	47.6	47.0	46.4
1958	48.4	47.8	47.2
1959	48.6	48.0	47.5
1960	49.2	48.7	48.2
1961	49.1	48.5	48.2
1962	49.0	48.4	48.2
1963	48.7	48.2	48.0
1964	48.6	48.3	48.2
1965	48.5	48.6	48.2
1966	50.7	50.7	50.7
1967	52.4	52.6	52.7
1968	54.3	54.8	54.9
1969	54.7	56.4	56.5
Increase, 1954-69	9.9	12.5	13.1

Table 13--Standardized marketing margins for whole milk, 150 markets, 1967-69 1/

Percent of U.S. average	Markets with resale prices--		All markets	
	Controlled	Uncontrolled		
	Number			Percent
60-64.9		1	1	0.7
75-79.9		4	4	2.7
80-84.9	1	9	10	6.7
85-89.9	1	16	17	11.3
90-94.9	1	25	26	17.3
95-99.9	4	17	21	14.0
100-104.9	5	17	22	14.7
105-109.9	14	11	25	16.6
110-114.9	7	6	13	8.7
115-119.9	5	4	9	6.0
120-129.9		2	2	1.3
All markets	38	112	150	100.0

1/ 1967-69 average margins with the proportion of store and home delivery sales the same in all markets. Price wars eliminated.

U.S. average: controlled markets, 68 percent; uncontrolled markets, 25 percent; all markets, 36 percent.

Innovations

Innovativeness is generally accepted as an element of market performance. Most evaluations of innovativeness have depended on highly subjective judgments as to its "acceptability" in a given industry. In particular, they depend on the judgment of the analyst as to the desirability of any particular innovation. The biases of economists are frequently evident in these judgments.

But if you wished to substitute some more objective criteria for the individual investigator's biases, what would you use? You might use the test of the marketplace. A new product or other innovation which survived in the marketplace would be deemed to be judged acceptable by society. By the same token, one that did not survive in the marketplace would be considered unaccepted and therefore unacceptable.

In practice, the problem has arisen because in many cases the investigator is looking at only one industry. Since he has no others with which to make comparisons, he must compare innovativeness against some absolute standard. Lacking both the means of measurement and a quantified standard, the investigator has used his own biases, more politely known as subjective judgment.

Where one is making comparisons between industries or markets, he can measure innovativeness and compare the results. He can say that this market is more innovative than that. Since he really does not know what an acceptable level of innovativeness is, he is better off to avoid the attempt to establish such standards.

In this study, we have in some sense adopted the test of the marketplace. A list of new packages, products, and services introduced in the fluid milk business since the mid-1930's was developed. Packages include all of the containers now in use except the quart glass milk bottle, which predates this period. New products include homogenized milk, lowfat milk, and half-and-half. Changes in services include quantity discounts on home delivery, store label milk, dairy stores, less-frequent home delivery, and reduced service on wholesale delivery.

All of these are changes in container, product, or service which have been introduced in a number of markets and have persisted. They were, in fact, innovations when they were made.

Innovativeness was measured in terms of the average date of adoption of each of these innovations. 2/ Information was obtained from a wide variety of

2/ Measuring innovativeness in this fashion ignores the attempted innovations that failed the test of the marketplace. If it were possible to obtain information on these, another dimension could be added to the measures of performance. The acquisition of such data was far out of reach of the resources available for this study.

sources, including reports of the Federal order market administrators, research reports, The Fluid Milk and Cream Report, a survey by the Northeast Regional Dairy Marketing Committee, trade magazines, Glass Container Manufacturers Institute, a 1950 survey by the North Central Regional Dairy Marketing Technical Committee, and a survey of processors by Lynn Fife of the University of Vermont. For each innovation in container, product, or service, the date of first introduction into the market was recorded. These figures provided the data from which an index of innovativeness was computed.

The index was computed using a set of weights developed by principal components analysis. This methodology provides a set of weights which maximize the variance in the resulting indexes (14). A wide variety of other weighting systems could have been used and undoubtedly would have yielded somewhat different results. Since the objective was to derive a set of measures of innovativeness which could be related to other factors, including market structure and institutions, a set of indexes which yielded maximum variance would appear to be potentially the most useful.

The adoption dates of some of the earliest innovations, such as the paper quart, go back into the 1930's. It is apparent that such early dates would have a considerable effect on the index, but it is not apparent that the fact that a market was an innovator in the 1930's would continue to be significant in the 1960's and 1970's. Therefore, three different indexes were constructed. The first utilized the actual date of introduction, whenever it occurred. The second ignored all dates earlier than 1945, by changing them to 1945. The third ignored all dates earlier than 1950. All three indexes were used in various analyses. Only the second index, ignoring all dates earlier than 1945, is used in the analyses reported here, since the use of that index provided somewhat better measures of relationship in the analyses described in the following section.

Markets ranged considerably in the rate of adoption of innovations. The market with the highest index was Milwaukee, Wis., with an average date of introduction of all innovations of 1955. The market with the lowest index was Burlington, Vt., which had an average date of introduction of 1964. These are simple averages of all of the dates of introduction of the various innovations and are not strictly comparable to the index numbers which are calculated using different weights. It is apparent that markets with resale price control were somewhat less innovative than those without (table 14). In the next section, we will investigate what other factors are related to the innovativeness index.

HOW STRUCTURE AND INSTITUTIONS AFFECT PERFORMANCE

The effects of a substantial number of structural and institutional variables on the two measures of performance were analyzed for 144 U.S. fluid milk markets (for list of markets, see table A-4). The variables included in the analysis are listed in table 15 together with their mean values and standard deviations. A number of other variables which were tried in various

Table 14--Index of innovativeness for markets with and without resale price control, 158 markets

Range of index of innovativeness 1/	Markets with resale price control--			All markets
	At present	Some time since 1950 but not now	Not since 1950	
		Number of markets		
+30/39	1	1	11	13
+20/29	2	1	16	19
+10/19	2	--	25	27
+01/09	2	3	21	26
-01/09	3	1	16	20
-10/19	9	3	9	21
-20/29	5	2	7	14
-30/39	9	--	4	13
-40/50	3	2	--	5
Total	36	13	109	158
		Percent		
+20/39	8.3	15.4	24.8	20.3
+01/19	11.1	23.0	42.2	33.5
-01/19	33.3	30.8	22.9	25.9
-20/39	39.0	15.4	10.1	17.1
-40/50	8.3	15.4	--	3.2
Total	100.0	100.0	100.0	100.0

-- = None.

1/ The larger the positive index the earlier the average date of introduction of the innovations in a market. All dates earlier than 1945 changed to 1945.

Table 15--Variables included in analyses of market structure, institutions and performance, 144 markets

Variable	Unit	Mean	Standard deviation
Structural variables: 1/	Mil. lbs.		
Market size (total volume of all plants)	per month	92.6	94.0
Plants	Number	58.4	45.7
Concentration (market share of 4 largest firms)	Pct. of sales	46.9	20.7
Supermarkets (market share of integrated supermarket firms--sole outlet)	Pct. of sales	6.2	6.3
Dairy stores (market share of integrated dairy stores--sole outlet)	Pct. of sales	5.5	6.6
Distance (weighted average distance of plants from market center)	Miles	80.6	59.9
Isolation (distance, except isolated markets = 0 miles)	Miles	74.7	38.2
Isolation dummy (isolated markets = 1)	Dummy	0.08	0.3
National-regional firms (market share of national and regional firms)	Pct. of sales	33.8	17.6
Institutional variables:			
Price setting (resale prices set)	Type I index 2/	43.9	79.4
Minimum price setting (minimum resale prices set and market prices exceed)	Type I index	2.8	14.6
Dating (open dating required)	Type I index	16.1	49.7
Licensing (restrictive licensing)	Type I index	15.8	53.2
Sanitary regulation (restrictiveness)	Type II index 3/	2.2	7.0
Trade practice regulation (sum of indexes for discount, below-cost sales, and price filing or reporting)	Type I index	132.3	190.6
Labor restrictions (number of labor practices restricted by contract)	Number	2.2	2.1
Other variables:			
Per capita consumption of fluid milk products	Lbs. per year	272.8	39.7
Region	Dummy	--	--
Performance variables:			
Margins (standardized marketing margins, 1967-69)	Cents per half gallon	26.13	2.88
Innovativeness	Index	13.43	212.82

-- = Not applicable.

1/ All in terms of the definition of the market in this study (see text, pp. 7-10).

2/ Type I index--index of number of years in effect, with larger weights for most recent year--if effective for last 20 years = 210. (See table A-1 for basic data.)

3/ Subjective judgment of restrictiveness--0 = not restricted; 100 = very restrictive.

analyses but which did not prove significant are listed in appendix tables 2 and 3. These variables included all of those for which data was available which seemed likely to have an influence on performance.

Nearly 40 percent of the variation in marketing margins 3/ can be explained by five structural and four institutional variables plus per capita consumption (table 16). The last three columns of table 16 give some idea of the effect on marketing margins of each variable at three levels. For example, the effect of market size on margins--with the effects of all other variables constant--would be to lower margins 0.02 cents per half gallon in the smallest market, 2.21 cents in the largest, and 0.44 cents in an average-sized market.

In larger markets, marketing margins tended to be lower. This is as expected, since larger markets in general have more plants serving them and there is some tendency for competition to be more intense.

The more highly concentrated markets--where the four largest firms controlled a larger percent of sales--had higher margins than the less concentrated markets. This conforms with the hypothesis that margins can be expected to be lower where more firms share more equally in the business.

Markets with larger shares of the total volume handled by integrated dairy store firms tended to have lower margins than those markets without such firms. Since dairy stores tend to have lower prices and margins than supermarkets (4), average margins in such markets would be expected to be lower.

The effect of isolation is measured by two variables in this analysis. The effect of distance of potential competitors from the market center is measured by the "distance" variable, while that of more or less complete isolation is measured by the "isolation dummy." In both cases, the effect of increasing isolation is to raise marketing margins.

In general, the effects of the institutional variables on marketing margins are greater than the effects of the structural variables. The most highly significant variable was price setting under State regulation. This indicates that, all other things being equal, in markets where prices are set under State regulation and have been for 20 years, marketing margins average 2.4 cents per half gallon higher than in other markets.

Setting of minimum prices, with market prices above the minimums, also raises prices above the levels in unregulated markets. The existence of open dating regulations in a few markets was associated with lower margins for reasons which are obscure.

The existence of restrictive sanitary regulation in a market is one of the more significant variables affecting marketing margins. There is a tendency for marketing margins to be sharply higher in those markets with highly restrictive sanitary regulations. Only a few markets are still in this category.

3/ Marketing margins standardized to remove the effects of differing proportions of home delivery and store sales.

Table 16--Relationship of marketing margins to structural and institutional factors, 144 markets 1/

Independent variable	Unit	Regression coefficient	Significance (t)	Effect on marketing margins with independent variable at its--		
				Minimum	Mean	Maximum
		Cents per half gallon		----Cents per half gallon----		
Structural variables:						
Market size	Mil. lbs. per month	-.004746	1.5	-.02	-.44	-2.21
Concentration	Pct.	+.022146	1.4	+.32	+1.04	+2.21
Dairy stores	Pct.	-.032118	1.1	0	-.18	-1.01
Distance	Miles	+.004942	1.4	+.01	+.40	+.89
Isolation dummy	Dummy	+1.166660	1.4	0	--	+1.17
Institutional variables:						
Price setting	Index	+.011272	4.4	0	+.49	+2.37
Minimum price setting	Index	+.025418	1.9	0	+.07	+5.34
Dating	Index	-.007242	1.4	0	-.12	-1.52
Sanitary regulation	Index	+.117960	3.5	0	+.26	+11.80
Other variables:						
Per capita consumption	Lbs. per year	-.018457	3.3	-3.45	-5.04	-7.77

-- = Not applicable.
1/ R^2 = .3956; Standard error of estimate 2.34 cents.

There is also a significant relationship between per capita consumption and marketing margins. In general, as per capita consumption rises, marketing margins decline, although the causal relationship presumably runs in the opposite direction. In other words, with lower margins there is a tendency for lower prices, and consumption is higher than it would otherwise be.

There appear to be some significant regional differences in marketing margins which are not related to the variables considered in this analysis. In an analysis using all of the variables in table 16 plus dummy variables for geographic regions, 48 percent of the variance in margins was "explained," compared with 40 percent when regional dummies were not used. Margins in the South Atlantic region were higher than those in base region consisting of the Northeast, North Central, and Pacific States, 4/ while margins in the remainder of the country were below those in the base region. Since it is somewhat difficult to present an economic or behavioral hypothesis as to the relationship between market performance and geography, 5/ this finding will not be further pursued.

A number of other variables which might have been expected to be related to the level of marketing margins in a market were tried and found nonsignificant (app. table 2). Some of these were alternative measures of structural characteristics, such as the concentration index in lieu of the market share of the four largest firms, the number of milk plants in lieu of market volume, and two alternative forms of the market volume measure. Other structural measures which did not prove significant were the market share of national and regional firms, the market share of integrated supermarkets, and two measures of retail food store structure.

Several institutional factors also proved nonsignificant. These included two different measures of trade practice regulation, labor union contract restrictions, restrictive licensing, and open dating. Other variables which were nonsignificant were the innovativeness index, wage rates in the dairy industry, and per capita disposable personal income. The number of price wars in recent years did prove to be a significant variable but was not included in the analysis since it is more in the nature of a variable to be explained than an explanatory variable.

Nearly 60 percent of the variance in innovativeness as measured by our index is "explained" by the effects of structural and institutional factors and per capita consumption (table 17). The most significant variables, in statistical terms, are isolation, price setting, and concentration.

Among the structural variables, three tend to retard innovativeness and two to encourage it. Markets with a larger number of plants--which tend to be the larger markets--are somewhat slower to innovate than those with fewer plants. The more highly concentrated markets are also relatively slow to innovate, as

4/ This base region was used in the analysis because other analyses with many more separate regions found no significant difference within this area.

5/ A number of possibilities of region standing as a proxy for an economic variable (such as labor costs) were tested by using the explicit variable and found nonsignificant (see app. table 2).

Table 17--Relationship of innovativeness to structural and institutional factors, 144 markets 1/

Independent variable	Unit	Regression coefficient 2/	Significance (t)	Effect on innovativeness with independent variable at its--		
				Minimum	Mean	Maximum
		Index		----------	Index	----------
Structural variables:						
Plants	Number	-0.12524	2.6	-.63	-7.32	-21.54
Concentration	Pct.	-.48649	4.3	-7.01	-22.81	-48.65
Supermarkets	Pct.	+.46383	2.2	0	+2.89	+12.48
National and regional firms	Pct.	+.17594	2.0	0	+5.95	+14.99
Isolation	Miles	-.23654	5.9	0	-17.67	-42.58
Institutional variables:						
Price setting	Index	-.12465	7.3	0	-5.47	-26.18
Minimum price setting	Index	-.30455	3.6	0	-0.85	-63.96
Licensing	Index	-.06614	2.6	0	-1.04	-13.89
Sanitary regulation	Index	-.43365	2.2	0	-.95	-43.37
Trade practice regulation	Index	-.01944	2.7	0	-2.57	-12.25
Labor restrictions	Number	+.95356	1.4	0	+2.13	+7.63
Other variables:						
Per capita consumption	Lbs. per year	+.07717	2.0	+14.43	+21.05	+32.49

1/ R^2 = .5950; Standard error of estimate = 14.15; range of innovativeness index -50 to +38.
2/ The larger the positive index, the earlier the average date of introduction of innovations in the market.

are isolated markets. Those markets where integrated supermarket chains are more important and those with a higher proportion of sales by national and regional firms are more likely to make innovations more rapidly than others, perhaps because larger firms are more attuned to trying new products and services (and have the resources to do so) than are smaller firms.

All of the institutional variables except labor restrictions tend to slow the rate of innovation. These include all of the regulations imposed by State and local authority including price setting, minimum price setting, restrictive licensing, restrictive sanitary regulation, and trade practice regulation. Markets with a larger number of practices restricted by labor contracts tend to be more innovative (see also 10).

Markets with higher per capita consumption of fluid milk tend to have somewhat higher rates of innovation. It is likely that markets which are more ready to innovate in products and services tend to encourage somewhat higher consumption of milk products.

As in the case of marketing margins, where there was a statistical relationship between region and market performance, the addition of regional dummies to the analysis previously described would "explain" about 10 percent more of the variance in innovativeness. The most innovative regions were the Pacific, North Central, and Southwest. The Northeast was the least innovative, after the effects of all other variables were considered. However, the lack of an adequate hypothesis to explain the relationship between geography and innovativeness compels us to omit further discussion of this case.

Various analyses of the relationships between market structure, institutions, and innovativeness included a number of other variables which were either nonsignificant or less significant than those included in the analysis reported here (app. table 3). Market volume proved to be less useful as an explanatory variable than number of plants. The concentration (Herfindahl) index was generally a little less satisfactory than the market share of the four largest firms. Structural variables which proved nonsignificant were sales by integrated dairy stores and the market share of large retail food stores. Institutional variables which were nonsignificant were trade practice regulation and open dating.

CONCLUSIONS

This study looked at changes in market structure, institutions, and performance in the fluid milk industry over time and at the relationships among them. The apparent changes in market structure in the postwar period seem quite dramatic on first inspection. The number of fluid milk plants operating in the United States, excluding those operated by producer-distributors, has declined more than three-fourths since 1948. At the same time, distribution areas from individual fluid milk plants have expanded substantially. In the early postwar period, few plants distributed milk more than 30 or 40 miles from the plant. Now distribution of 100 miles is common and 200 miles not at all

unusual. Thus, the number of milk plants located in any given area has declined sharply, but the number competing for sales in that area has declined much less.

U.S. fluid milk markets have not become highly concentrated, despite the decline in plant numbers. Only in markets with total volume of less than 50 million pounds per month were more than half of the sales made by the four largest potential competitors (table 6). In the 14 largest markets, the market share of the four largest competitors averaged less than 25 percent.

The most significant change in market structure has been the growth of integrated supermarket firms. Their share of total sales increased about 6 percentage points between 1964 and 1970, while the share of national firms declined 4 percentage points and that of local firms fell 6 percentage points (table 3). The pace of competition is increasingly being set by supermarket firms, whether integrated or not.

The institutions regulating the marketing of fluid milk have also changed during the postwar period. The number of States regulating resale prices of fluid milk products reached a peak of 21 in 1935 and declined to 11 in 1956-57. In the late 1950's and early 1960's, several other States instituted resale price regulation. The number reached a peak of 15 in the late 1960's and now includes 14 States (table 10).

Trade practice regulation in States without resale price fixing increased sharply in the 1950's. The effects of such regulation on prices and margins are somewhat mixed, depending on the specific form of regulation and the degree of enforcement.

Sanitary regulation was once a major element of restrictiveness in the marketing of milk. In recent years, it has become a fairly minor factor, as most States and many local jurisdictions have reshaped their regulations to facilitate movement of fluid milk products. In a few markets, sanitary regulation is still somewhat restrictive.

Restrictive licensing and the requirement for open dating were once of some importance in restricting the movement of milk or increasing costs but are no longer very important.

Labor contracts which restrict the introduction of various practices are fairly common but do not seem to have a significant effect on the performance variables considered in this study.

Market performance was measured in two dimensions for this study--marketing margins and innovativeness. U.S. average marketing margins for whole milk increased 6 cents per half gallon between 1954 and 1972, from 23.3 to 29.3 cents (table 11). The increase would have been at least half again as large if the shift to larger containers and from home delivery to store sales had not taken place. Marketing margins vary widely in the United States, averaging somewhat higher in markets with resale price control than in uncontrolled markets (table 13).

In this study, innovativeness was measured in terms of the average date of adoption of new containers, products, and services. There is a substantial range in innovativeness, as computed using this measure (table 14).

This analysis of the relationships between market structure, institutions, and market performance in fluid milk markets confirms the validity of the proposition that "firms operating in sheltered markets, especially where they are protected from competition by a benevolent Government agency, tend to pursue the quiet life. Steeped in the conventional wisdom and the comfort of accustomed practice, they abhor experimental change--even where it may redound to their private advantage." (1, p. 282)

Whether the shelter was provided by resale price regulation, restrictive licensing, restrictive sanitary regulation, or trade practice regulation, innovativeness was found to have been retarded. Resale price regulation and restrictive sanitary regulation tend to raise marketing margins, although the requirement for open dating of fluid milk products no longer appears to do so. The effects of trade practice regulation apparently are sufficiently mixed so that no discernible raising or lowering of margins exists.

The expected relationships between concentration and market performance are confirmed by the analysis. Increasing concentration raises marketing margins and lowers innovativeness. Isolated markets, which are sheltered by geography rather than by institutional factors, have higher margins and are less innovative. Larger markets, which tend to have more plants, have slightly lower marketing margins and are less innovative. Markets with significant integrated dairy store firms have lower margins while those with significant integrated supermarket operations are more innovative.

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Table A-1--Periods of resale price control, trade practice regulation, and restrictive licensing for milk, by State, 1933-72

State	Resale price control 1/			Trade practice regulation 2/			Restrictive licensing
	Set retail prices	Set minimum retail prices	Set wholesale prices only	Discount price discrimination	Sales below cost	Price filing or posting	
Maine	1935-72	--	--	--	--	--	--
New Hampshire	*1935-66	--	--	--	--	--	--
Vermont	1933-60	1960-72	--	--	--	--	--
Massachusetts	3/1934-47	--	--	1948-72	1948-72	--	--
Rhode Island	1934-61	--	--	--	--	--	--
Connecticut	1933-35	--	--	1936-72	--	--	--
New York	1933-37	--	--	--	--	--	1933-72
New Jersey	1933-48 *1953-68	1968-72	--	1949-52	1949-52	1949-52	--
Pennsylvania	1934-72	--	--	--	--	--	--
Ohio	1933-35	--	--	--	--	--	--
Indiana	1935-40	--	--	--	--	--	--
Michigan	1939-40	--	--	--	--	--	--
Wisconsin	1935-41	--	--	1955-72	1963-72	--	--
Minnesota	--	--	--	1957-72	1957-72	1957-72	--
Iowa	--	--	--	1966-72	--	1966-72	--
Missouri	--	--	--	1959-72	1959-72	--	--
North Dakota	1968-72	--	--	1955-67	1955-67	--	--
South Dakota	1935-37 1967-72	--	--	c1957-66	--	--	--
Nebraska	--	--	--	c1957-72	c1957-72	--	--
Kansas	--	--	--	--	--	--	--
Delaware	--	--	--	--	--	--	--
Maryland	1935	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
Virginia	4/1934-72	--	--	--	--	--	some
North Carolina	--	--	--	1955-72	1955-72	1955-72	--
South Carolina	1966-72	--	--	c1957-64	c1957-64	1961-64	--

See footnotes at end of table.

Continued

Table A-1--Periods of resale price control, trade practice regulation, and restrictive licensing for milk, by State, 1933-72--Continued

State	Resale price control 1/			Trade practice regulation 2/			Restrictive licensing
	Set retail prices	Set minimum retail prices	Set wholesale prices only	Discount price discrimination	Sales below cost	Price filing or posting	
Georgia	1937-67	--	--	--	--	--	some
Florida	1933-57 4/1959-64	--	--	--	--	--	--
Kentucky	--	--	--	c1957-72	c1957-72	1960-72	--
Tennessee	--	--	--	1955-72	1955-72	1961-72	--
Alabama	1935-72	--	--	--	--	--	--
Mississippi	1961-70	--	--	--	--	--	--
Arkansas	--	--	--	1955-72	1955-72	--	--
Louisiana	1963-72	--	--	c1956-62	1956-62	--	--
Oklahoma	--	--	--	1955-72	1955-72	1966-72	--
Texas	1934-35	--	--	--	--	--	--
Montana	1935-72	--	--	--	--	--	--
Idaho	--	--	--	1963-72	1963-72	--	--
Wyoming	--	--	1963-72	c1957-62	c1957-62	--	--
Colorado	--	--	--	c1939-72	c1939-72	1965-72	--
New Mexico	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Utah	1937	--	--	--	--	--	--
Nevada	1959-72	--	--	1955-58	1955-58	--	--
Washington	1934-35	--	--	--	--	--	--
Oregon	1934-54	--	--	--	--	--	--
California	1938-72	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--

*Includes short periods without controls.
-- = None.
1/ Dates are for periods when controls were exercised. Legal authority existed but prices were not set in--
Massachusetts, 1948-72
North Carolina, 1959-72
Nebraska, 1969-71 (prevented from going into effect by court action)
2/ Excludes trade practice regulation as part of resale price control.
3/ In Boston area only, November 1958-July 1959.
4/ Not for entire State.

Table A-2--Variables tried in regressions with margins as the dependent variable

Independent variable	Sign of regression coefficient	Significance (t value)
Structural variables:		
Concentration (Herfindahl) index	+	2.0
Percent of sales by national and regional firms	+	1.0
Percent of sales by integrated supermarkets (sole outlet)	±	0.2
Square root of market volume	-	1.4
Log of market volume	-	1.3
Number of milk plants in the market	-	1.4
Percent of retail food store sales by large retailers	-	1.2
Percent of retail food store sales by the four largest	-	0.3
Institutional variables:		
Index of trade practice enforcement intensity	±	1.4
Index of trade practice regulation--length of time and number of areas covered	-	0.8
Labor union contract restrictions--number of practices restricted	-	1.4
Restrictive licensing--length of time	+	1.1
Open dating required--length of time	-	1.5
Other variables:		
Price wars	-	2.5
Innovativeness index	+	0.8
Wage rates in dairy industry	±	0.2
Per capita personal income	+	0.9

Table A-3--Variables tried in regressions with innovativeness as the dependent variable

Independent variable	Sign of regression coefficient	Significance (t value)
Structural variable:		
Market volume	-	1.3
Concentration (Herfindahl) index	-	3.4
Percent of sales by integrated dairy stores (sole outlet)	-	0.8
Percent of retail food store sales by large retailers	+	0.9
Institutional variables:		
Index of trade practice enforcement intensity	+	1.9
Open dating required--length of time	+	1.5

Table A-4--Markets included

144 markets included in analysis of structure, institutions and performance:

Concord, N.H.
Manchester, N.H.
Burlington, Vt.
Boston, Mass.
Lowell-Lawrence, Mass.
New Bedford, Mass.
Springfield, Mass.
Worcester, Mass.
Providence, R.I.
Hartford, Conn.
New Haven, Conn.
Albany, N.Y.
Binghamton, N.Y.
Buffalo, N.Y.
Nassau-Suffolk cos., N.Y.
New York, N.Y.
Rochester, N.Y.
Schenectady, N.Y.
Syracuse, N.Y.
Atlantic City, N.J.
Camden, N.J.
Newark-Elizabeth, N.J.
Trenton, N.J.
Erie, Pa.
Harrisburgh, Pa.
Johnstown, Pa.
Philadelphia, Pa.
Pittsburgh, Pa.
Reading, Pa.
Scranton, Pa.
Akron, Ohio
Canton, Ohio
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dayton, Ohio
Toledo, Ohio
Youngstown, Ohio
Evansville, Ind.
Fort Wayne, Ind.
Gary, Ind.
Indianapolis, Ind.
South Bend, Ind.
Alton, Ill.
Chicago, Ill.
Peoria, Ill.
Rockford, Ill.
Rock Island, Ill.
Springfield, Ill.
Battle Creek, Mich.
Detroit, Mich.
Grand Rapids, Mich.
Kalamazoo, Mich.
Lansing, Mich.
Marquette, Mich.
Saginaw, Mich.
Beloit, Wis.
Green Bay, Wis.
Madison, Wis.
Milwaukee, Wis.
Superior, Wis.
Bemidji, Minn.
Duluth, Minn.
Minneapolis, Minn.
St. Paul, Minn.
Cedar Rapids, Iowa
Des Moines, Iowa
Fort Dodge, Iowa
Sioux City, Iowa
St. Louis, Mo.
Kansas City, Mo.
Springfield, Mo.
Fargo, N. Dak.
Aberdeen, S. Dak.
Lincoln, Nebr.
Omaha, Nebr.
Scottsbluff, Nebr.
Kansas City, Kans.
Topeka, Kans.
Wichita, Kans.
Wilmington, Del.
Baltimore, Md.
Washington, D.C.
Norfolk, Va.
Richmond, Va.
Roanoke, Va.
Charleston, W. Va.
Huntington, W. Va.
Wheeling, W. Va.
Asheville, N.C.
Charlotte, N.C.
Durham, N.C.

Continued

Table A-4--Markets included--Continued

Winston Salem, N.C.
Atlanta, Ga.
Savannah, Ga.
Jacksonville, Fla.
Miami, Fla.
Tampa, Fla.
Lexington, Ky.
Louisville, Ky.
Paducah, Ky.
Chattanooga, Tenn.
Knoxville, Tenn.
Memphis, Tenn.
Birmingham, Ala.
Gulfport, Miss.
Jackson, Miss.
Fort Smith, Ark.
Little Rock, Ark.
New Orleans, La.
Shreveport, La.
Lawton, Okla.
Oklahoma City, Okla.
Tulsa, Okla.
Abilene, Tex.
Amarillo, Tex.
Austin, Tex.
Corpus Christi, Tex.
Dallas, Tex.
El Paso, Tex.
Houston, Tex.
Lubbock, Tex.
San Antonio, Tex.
Butte, Mont.
Great Falls, Mont.
Colorado Springs, Colo.
Denver, Colo.
Albuquerque, N. Mex.
Phoenix, Ariz.
Tucson, Ariz.
Salt Lake City, Utah
Seattle, Wash.
Spokane, Wash.
Portland, Oreg.
Fresno, Calif.
Los Angeles, Calif.
Sacramento, Calif.
Mobile, Ala.
Montgomery, Ala.
San Diego, Calif.
San Francisco, Calif.
Sioux Falls, S. Dak.
Nashville, Tenn.
Grand Forks, N. Dak.

Other markets included in tables 13 and 14:

Portland, Maine
Rapid City, S. Dak.
Pueblo, Colo.
Westchester Co., N.Y. (not in table 14)
Bristol, Va.
Rochester, Minn.

Other markets included in table 14:

Clarksburg, W. Va.
Augusta, Ga.
Charleston, S.C.
Columbia, S.C.
Greenville, S.C.
Baton Rouge, La.
Cheyenne, Wyo.
Boise, Idaho
Idaho Falls, Idaho