HISTORICAL ANALYSIS AND REVIEW OF THE ECONOMIC AND LEGAL ASPECTS OF SANITARY MILK CONTROL IN THE NORTHEAST

G. M. Beal and Mohsen A. Bagnied

MP 886
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The purpose of this study is to examine and document the overall impact of public health regulations on the fluid milk industry in the Northeast. Public health regulations which exerted a great economic influence on the dairy industry for a century no longer burden the economic performance of the industry. The now historical impact of public health regulations on the economics of the fluid milk industry is considered a classical example of how public laws and regulations can directly or indirectly influence the performance of an industry.

The authors wish to acknowledge the cooperation of the United States Department of Agriculture, the United States Public Health Service and members of the Northeast dairy industry.

Contribution number 5138 of the Maryland Agricultural Experiment Station, Department of Agricultural and Resource Economics.

The Maryland Agricultural Experiment Station is an equal opportunity employer. Similarly, the knowledge gained through its research program is available to the public without regard to race, color, creed, national origin, sex or religion.
SUMMARY AND CONCLUSIONS

During the first half of this century, local, state and federal government control over milk sanitation developed into a complex and rigorous system which minimized the danger of milk-borne diseases. The formulation and enforcement of public health regulations, particularly at the local level, also had an important and generally unpremeditated economic impact on the development of the dairy industry.

Local health regulations frequently made fluid milk markets less competitive by: operating as barriers to the free movement of milk; increasing the cost of milk production; influencing the competitive behavior of milk trade organizations in local markets; hindering the progress of innovation in the dairy industry and altering the level and structure of milk prices.

During the late 1940's city health regulations were found to be more restrictive than state and federal regulations. Furthermore, the variation among local health regulations was greater than among state regulations. By 1975, state health regulations were more consistent with the federal ordinance than in past periods and local milk sanitary regulations had practically disappeared.

After 1950, Class I milk prices in the Northeast gradually became more highly correlated with Midwestern prices plus transportation costs, and regional price differences became more consistent with the distance from the Midwest. These developments indicate that fluid milk markets in the Northeast have become more competitive in terms of the free movement of milk.

The dairy industry has been one of the most comprehensively regulated and investigated industries in the United States. In recent years, the courts have generally upheld public health regulations as long as they were: related to public health, consistent with existing statutes, reasonable, and neither non-capricious, arbitrary nor discriminatory.

Court decisions invalidating provisions not directly related to public health and the widespread use of Federal Milk Orders (and the increasing participation of handlers in the "Interstate Milk Shippers Certification Program") were major factors contributing to the decline of the economic power of sanitary milk regulations.

During the past two decades, there has been a trend toward the unification of sanitary milk standards around the country through the gradual elimination of local health regulations and their replacement by state and federal codes.

The economic impact of government health regulations has been greatly reduced in recent years by the expansion of federal milk marketing orders, the widespread adoption of the United States Public Health Service Grade A Pasteurized Milk Ordinance, the increasing participation of handlers in the Interstate Milk Shippers Certification Program, and the invalidation by the courts of health regulations that were deemed to have trade restriction as their goal.
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HISTORICAL ANALYSIS AND REVIEW OF THE ECONOMIC AND LEGAL ASPECTS OF SANITARY MILK CONTROL IN THE NORTHEAST

by

George Max Beal and Mohsen A. Bagnied

INTRODUCTION

The dairy industry is a major source of farm income in the Northeast. Its development and performance are determined by the economic, legal and technological environment in which it operates.

Local, state and federal health departments, which were given legal control over public health aspects of the dairy industry more than a century ago, immediately began affecting the economic behavior of dairy firms engaged in milk production and distribution. Over the years, technological developments within as well as outside the dairy industry permitted the preservation of the sanitary quality of milk for extended periods of time and allowed long distance movement of bulk milk, thus reducing the necessity of stringent local health regulations. The resulting disappearance of local health regulations and their economic protection for local fluid milk producers has furthered minimum producer price protection by federal and state control.

The data used in this study were obtained from several sources. These include correspondence with public health authorities, interviews with public health officials and members of the dairy industry, as well as published literature and statistics.

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Objectives of the Study

This study had the following objectives:


2. Determining the economic implications of different provisions of public health regulations.

3. Quantitatively testing and evaluating the impact of recent changes in sanitary milk regulations on competition in fluid milk markets.

4. Examining the legal status of major provisions in public health regulations and determining the impact of court decisions on the development of sanitary milk control.
Research Methodology

The study utilized four distinct analytical methods.

1) Comparative analysis - Relevant provisions of public health regulations were tabulated and analyzed. The analysis included a comparison between local, state and federal health regulations and between current and past regulations.

2) Theoretical analysis - Data were evaluated for possible economic implications of the provisions and the enforcement of public health regulations. The theoretical analysis relied heavily on logical relationships and descriptions of the possible economic effects of public health regulations.

3) Quantitative Analysis - The quantitative analysis included two parts. The first part was an examination of the relationship between regional price differences and distance from the surplus region. Regression analysis was used to estimate this relationship. The second part dealt with the deviations of actual Class I milk prices in Northeastern markets from hypothetically competitive prices during three time periods.

4) Legal Analysis - All recorded court cases dealing with milk sanitation were collected. The evolving legal status of public health regulations on milk for fluid use was documented from these cases. The analysis included a study of court decisions on various aspects of sanitary milk control and their impact on the subsequent development of public health regulations. Court decisions related to public health provisions with economic implications received special attention in the analysis.
HISTORICAL DEVELOPMENTS

Stage I (1850-1900)

Stage I was characterized by deteriorating milk sanitation conditions, the
beginning of milk sanitation control, and rapid technological advances inside and
outside the fluid milk industry.

During the second half of the nineteenth century, the sanitation problems of
the fluid milk industry were magnified due to the rapid increase in urban
population, particularly in the Northeast (Figure 1). Milk was produced on farms,
pooled and transported in cans to market. The commercial distribution of milk, and
the widespread practice of adulterating milk with water often resulted in the spread
of milk-borne diseases.

The first milk sanitation ordinance in the Northeast was enacted in 1856. It
was a Massachusetts law prohibiting milk adulteration. This was followed by
sanitation requirements by large cities. Early efforts toward sanitary control of
the milk supply were slow and inadequate due mainly to meager knowledge of milk
sanitation.

The second half of the nineteenth century was also a period of inventions
and new discoveries which later lifted the dairy industry from its backwardness
and built it on a scientific basis. The discovery of pasteurization and the
invention of mechanical refrigeration, glass milk bottles, and the internal
combustion engine revolutionized the dairy industry.

Stage II (1900-1950)

Stage II was characterized by improvements in milk sanitation and the
increasing economic influence of local health regulations on the fluid milk
industry.

Knowledge accumulated during the second half of the nineteenth century was
implemented to improve existing sanitary conditions. The increasing use of
pasteurization, mechanical refrigeration, packaging and modern transportation all
contributed to maintaining the quality of milk.

Technological improvements in production, processing and distribution of
milk had greatly increased the competitive cost advantages of large-size dairy
firms, whose development in turn allowed for the greater utilization of the new
knowledge.

Figure 1: The Northeast as Defined in the Study
During this period, numerous local health regulations were developed throughout the country. Local health authorities achieved great success in maintaining the sanitary quality of milk. The complex and rigid system of local health supervision was also instrumental in the economic protection of local producers and handlers, in addition to protecting the public health.

During World War II, local health authorities in the Northeast were forced to relax their regulations and to accept what was then called "Emergency Milk" from distant sources to meet the increased war demand. The inter-market movement of "Emergency Milk" demonstrated that bulk milk could be transported for hundreds of miles without any significant deterioration in its quality and left no doubt that local health regulations were a major obstacle to inter-market movement of milk.

Stage III (1950-1975)

Stage III was characterized by (1) court actions against the utilization of public health regulations for economic ends, (2) the widespread adoption of the federal milk ordinance, (3) the establishment and growth of "Interstate Milk Shippers Certification Program", and (4) the gradual replacement of local health regulations by more uniform, sanitary standards and reciprocal inspections between regulatory agencies for fluid milk throughout the country.

The federal milk ordinance was authorized by Congress in the first quarter of this century, and developed by the United States Public Health Service. The 1965 edition represents the thirteenth revision since its first publication in 1924. Each edition incorporated the most current knowledge about milk sanitation and its enforcement. The adoption of the federal ordinance by local and state authorities was voluntary. After its adoption, enforcement of the ordinance became a function of the local or state authorities. By 1965, some 37 states had adopted regulations based on the federal standards.

The "Interstate Milk Shippers Certification Program" was developed in 1950 to unify the sanitary standards for milk and to facilitate interstate movement of milk. The program functions on a voluntary, cooperative basis. Each participating state is responsible for the inspection of milk at its source. The federal ordinance is used as the basic milk sanitation standard for the program. In 1971, 29 states were cooperating in the program through certified shippers located in 49 states. The Northeast lagged behind the rest of the nation in cooperating with this program.

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FEDERAL, STATE AND LOCAL HEALTH
REGULATIONS IN THE NORTHEAST

Standards for the Composition of Fluid Whole
Milk, Skim Milk and Cream

Each of the regulations examined included a definition of fluid milk and a
number of its products. Definitions of fluid whole milk, skim milk and cream
were the most common Federal, state and local standards for the composition of
fluid whole milk, skim milk and cream were compared for two different time
periods, 1947 and 1972.

In 1947, the standard for milk fat in fluid whole milk ranged between 2.5 and
3.5 percent at the local level and between 3.0 and 3.5 percent for state
regulations (Table 1). The majority of the cities surveyed required a minimum
of 3.5 percent milk fat in fluid whole milk while half of the state regulations
required a minimum of 3.25 percent, which is the United States Public Health
Ordinance recommendation. In 1972, however, there was less variation among local,
state and federal standards.

There was no common definition for skim milk in 1947. By 1972, the majority
of the states surveyed and the U.S. Public Health Service were defining skim
milk with a maximum content of 0.050 percent milk fat.

In both 1947 and 1972, local and state regulations and the U.S. Public Health
Service defined light cream as containing a minimum of 18.0 percent milk fat.

Permits and Inspection

Provisions concerning permits and inspections were studied for 1949 and 1972.
All of the ordinances investigated had some provisions dealing with licensing
and inspection. However, almost every ordinance had its unique version.

In 1949, all local regulations included provisions requiring permits for
producers as well as handlers selling milk. Some cities limited farm and/or
plant inspection to a given geographic area, while other allowed inspection of
distant farms and/or plants and charged the permittee all or part of the cost
of inspection. By 1972, most state legislatures had shifted the function of
inspecting dairy farms to the state and accepted the inspection of other
regulatory agencies for imported milk. Consequently, in 1972, no city or
state in the Northeast had a regulation restricting dairy farm permits to a
given geographic area.

As in city regulations, state codes had a wide variety of permit and
inspection requirements. However, state regulations were generally less
restrictive than local regulations in terms of conditions for granting permits,
permit fees and frequency of inspection. In 1949, the minimum required frequency
of farm inspection and plant inspection ranged from once a year to once a month,
(Table 2). In 1972, this range was from two to four times a year. When ordinances
<table>
<thead>
<tr>
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<th>Whole Milk</th>
<th>Skim Milk</th>
<th>Cream (light)</th>
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<td><strong>Milk Fat</strong></td>
<td>3.25</td>
<td>3.25</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Milk Solids</strong></td>
<td>8.00</td>
<td>8.25</td>
<td></td>
</tr>
<tr>
<td><strong>Total Milk</strong></td>
<td>11.75</td>
<td>11.50</td>
<td></td>
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<tr>
<td><strong>Minimum Percent</strong></td>
<td>18.0%</td>
<td>18.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Percent</strong></td>
<td>18.0%</td>
<td>18.0%</td>
<td></td>
</tr>
</tbody>
</table>

**STATE**

- **Connecticut**: Milk Fat 3.25, Milk Solids 8.00, Total Milk 11.75.
- **Delaware**: Milk Fat 3.25, Milk Solids 8.25, Total Milk 11.75.
- **Maine**: Milk Fat 3.25, Milk Solids 8.50, Total Milk 12.00.
- **Maryland**: Milk Fat 3.50, Milk Solids 8.50, Total Milk 12.00.
- **Massachusetts**: Milk Fat 3.35, Milk Solids 8.50, Total Milk 12.00.
- **New Hampshire**: Milk Fat 3.25, Milk Solids 8.50, Total Milk 12.00.
- **New Jersey**: Milk Fat 3.00, Milk Solids 8.25, Total Milk 11.75.
- **New York**: Milk Fat 3.00, Milk Solids 8.25, Total Milk 11.75.
- **Pennsylvania**: Milk Fat 3.25, Milk Solids 8.25, Total Milk 11.75.
- **Rhode Island**: Milk Fat 3.25, Milk Solids 8.25, Total Milk 11.75.
- **Vermont**: Milk Fat 3.50, Milk Solids 8.50, Total Milk 12.00.
- **West Virginia**: Milk Fat 3.00, Milk Solids 8.00, Total Milk 11.75.

**LOCAL**

- **Baltimore, Md.**: Milk Fat 3.50, Milk Solids 8.50, Total Milk 12.00.
- **Burlington, Vt.**: Milk Fat 3.50, Milk Solids 8.50, Total Milk 12.00.
- **Harrisburg, Pa.**: Milk Fat 3.50, Milk Solids 8.25, Total Milk 12.00.
- **Jersey City, N.J.:**: Milk Fat 3.00, Milk Solids 8.50, Total Milk 11.75.
- **New York, N.Y.:**: Milk Fat 3.40, Milk Solids 8.25, Total Milk 11.75.
- **Philadelphia, Pa.**: Milk Fat 3.25, Milk Solids 8.25, Total Milk 12.00.
- **Providence, R.I.:**: Milk Fat 3.50, Milk Solids 8.25, Total Milk 12.00.
- **Rochester, N.Y.:**: Milk Fat 3.00, Milk Solids 11.50, Total Milk 20.00.
- **Syracuse, N.Y.:**: Milk Fat 3.00, Milk Solids 11.50, Total Milk 20.00.
- **Washington, D.C.:**: Milk Fat 3.50, Milk Solids 8.25, Total Milk 11.75.

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*No limit.
- Milk from which most milk fat is removed.
- Milk from which the cream or any part thereof has been removed.
- Milk from which the cream is removed or contains less than 8.2 percent milk solids.
- Adopted State Milk Sanitation Law in 1972.
did not specify the frequency of inspection, this was usually left to the judgement of health officials. State regulations were found to be more specific about the frequency of inspection than local regulations. Between 1949 and 1972, there was a trend toward greater frequency of plant inspections, with a simultaneous tendency toward less rigid permit requirements.

Bacterial Standards

In 1949, all the Northeastern states allowed the sale of raw milk at the retail level, while it was prohibited by about two-thirds of the cities surveyed, (Table 2). By 1972, about half of the states and all of the cities had banned the sale of raw milk.

The bacterial standard for raw milk in 1949 ranged from 10,000 to 150,000 per millimeter among states, and from 10,000 to 50,000 per millimeter among cities. For the best grade of pasteurized milk, the range was from 5,000 to 30,000 per millimeter among states and from 5,000 to 50,000 per millimeter among cities. A trend toward more strict bacterial standards in both local and state regulations developed between 1949 and 1972.

Standards for Cooling Milk

Standards for cooling milk are an important part of milk sanitation laws. Cooling temperatures were usually defined for different stages in the production, processing and distribution of milk. Almost all of the regulations surveyed provided for a maximum temperature for milk on the farm after milking and until delivery.

Over the past three decades, there has been a trend toward lower temperature requirements on the farm. This trend has been reflected in a continuous reduction in the U.S. Public Health Service requirements for cooling temperature from 70°F to 60°F and then 50°F in the 1939, 1949 and 1965 editions of the Federal Ordinance. In 1949, eight of the 12 Northeastern states were using the same standard as the U.S. Public Health Service recommendation and by 1972 all but one of these states were using the federal standard, (Table 2).

Pasteurization

In 1949, about one-third of the cities studied and two-thirds of the Northeastern states had the same standard as the U.S. Public Health Service for pasteurization, i.e., 143°F for 30 minutes or 160°F for 15 seconds. By 1972, almost all of the states and the cities surveyed were using the federal standard which is 145°F for 30 minutes or 161°F for 15 seconds.
TABLE 2: Standards for Bacterial Count, Cooling Temperatures on Farm and Frequency of Farm and Plant Inspections in the Northeast, 1947 and 1972.

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<td>Washington, D.C.</td>
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<tr>
<td>Baltimore, Maryland</td>
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</tbody>
</table>

*Bacterial Standards Shall be in Accordance with the latest recommendation of the American Public Health Association.

*15 Summer, 10 Winter.
Fluid Milk Grades

The grading of milk and milk products has been based primarily on chemical, bacteriological and temperature standards. In 1949, the U.S. Public Health Service recommended three grades of raw milk and three grades of pasteurized milk, (Table 3). Only two of the 12 Northeastern states defined three grades of raw milk and three defined three grades of pasteurized milk. Two thirds of the cities surveyed in 1949 prohibited the sale of raw milk at the retail level and therefore did not have grade definitions.

By 1972, four Northeastern states had banned the sale of raw milk to consumers. The U.S. Public Health Service Ordinance recommended one grade of pasteurized milk but provided no grading for raw milk. All of the cities surveyed in 1972, and half of the Northeastern states, provided for only one grade of pasteurized milk. In 1949, all the Northeastern states provided for the sale of certified milk. Less than half of the states mentioned approval of certified milk in 1972.

Milk Dating

Milk dating requirements were investigated during three different time periods, 1947, 1957 and 1972. A number of local health regulations in the Northeast required that the day of the week or the date of the month be shown on milk containers (Table 4). This date either indicated the day of production or of processing or it indicated the expiration date of sale. In addition to dating requirements some regulations placed a time limit on the handling of milk at different stages between production and sale.

In 1957, only two states in the country required that fluid milk be dated. In 1968, one of these states dropped the dating requirements from its regulations, while in 1972 another Northeastern state introduced dating provisions to its regulations.

The dating of milk was required in 24 jurisdictions in the U.S. in 1957. Ten were located in the Northeast. In 1972, dating requirements and time limitations were less stringent than in the two previous periods.

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### TABLE 3: Enforcing Agencies, Types of Laws Followed and Grades of Milk in the Northeast 1949 and 1972.

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<td>Ag. &amp; Food.</td>
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<tr>
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<tr>
<td>New Bedford, Mass.</td>
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<td>Springfield, Mass.</td>
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<td>Newark, N.J.</td>
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<td>Paterson, N.J.</td>
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<tr>
<td>Jersey City, N.J.</td>
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<td>Harrisburg, Pa.</td>
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<td>Pittsburgh, Pa.</td>
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<td>Reading, Pa.</td>
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<td>Wilmington, Del.</td>
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<td>Washington, D.C.</td>
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<tr>
<td>Baltimore, Md.</td>
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</tbody>
</table>

**A, B, C** indicates that grade is pasteurized; **A, B, Past.** indicates that grade is pasteurized.
Table 4: Dating of milk Requirements in the Northeast 1947, 1957 and 1972.

<table>
<thead>
<tr>
<th>State</th>
<th>Regulation In Effect In</th>
<th>Dated Product</th>
<th>Required Date</th>
<th>Time Limitation Between Production and Pasteurization</th>
<th>Time Limitation Between Pasteurization and Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>1957</td>
<td>1-Grade A, raw milk or cream</td>
<td>1-day of bottling</td>
<td>1-arrive at dealers plant within 48 hours after milking</td>
<td>2-delivered to consumers no later than 48 hours after the latest milking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-certified milk or cream</td>
<td>2-day of bottling</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3-any type or grade of pasteurized milk or cream (except certified milk)</td>
<td>3-final day of the week when product is intended for delivery, delivery day of week shown shall not be later than second day following day of pasteurization 4-day of production 5-day of pasteurization</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>4-imported cream</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5-imported cream, pasteurization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>1957</td>
<td>1-raw or natural milk or cream</td>
<td>1-day on which milk was produced</td>
<td>2-milk - 24 hours from production cream - 96 hours from production</td>
<td>2-no milk or cream shall be sold prior to 12:01 a.m. of the day on the label</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-pasteurized milk or cream</td>
<td>2-day of pasteurization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td>1972</td>
<td>1-pasteurized milk or cream</td>
<td>1-day of the week of pasteurization</td>
<td>1-no milk or cream will be sold prior to 12:01 a.m. of the day on the label</td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>1972</td>
<td>1-pasteurized milk products</td>
<td>1-month and ay of month after which the product shall not be sold</td>
<td>1-7 days including the day of pasteurization</td>
<td></td>
</tr>
</tbody>
</table>

*Since 1968 dating is not required.*
<table>
<thead>
<tr>
<th>Local (City and State)</th>
<th>Regulation In Effect</th>
<th>Dated Product</th>
<th>Required Date</th>
<th>Time Limitation Between Production and Pasteurization</th>
<th>Time Limitation Between Pasteurization and Sale*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philadelphia, Pennsylvania</td>
<td>1947</td>
<td>1-raw milk 2-raw cream</td>
<td>1-day of the week of production</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jersey City, New Jersey</td>
<td>1947</td>
<td>1-raw milk or cream 2-pasteurized milk 3-pasteurized cream</td>
<td>1-day of production</td>
<td>2-day of week of pasteurization</td>
<td>3-day of the week bottled</td>
</tr>
<tr>
<td>Baltimore, Maryland</td>
<td>1957</td>
<td>1-pasteurized milk, skim milk, cream 2-selected raw milk</td>
<td>1-day of week of pasteurization</td>
<td>2-day of production</td>
<td></td>
</tr>
<tr>
<td>Boston, Massachusetts</td>
<td>1957</td>
<td>1-pasteurized milk 2-any fluid food or drink principally contain milk, cream or skim milk</td>
<td>1-day of week of pasteurization</td>
<td>2-day of week of pasteurization</td>
<td>1-24 hours between milking and delivery. 72 hours between milking and pasteurization</td>
</tr>
<tr>
<td>Havertford, Pennsylvania</td>
<td>1957</td>
<td>1-pasteurized milk 2-pasteurized cream 3-raw milk or cream</td>
<td>1-day of week of pasteurization</td>
<td>2-day of week of pasteurization</td>
<td></td>
</tr>
<tr>
<td>Milk Control District Number 1, Pennsylvania</td>
<td>1957</td>
<td>1-inspected raw milk or cream 2-pasteurized milk or cream</td>
<td>1-day of week of production</td>
<td>2-day of week of pasteurization</td>
<td></td>
</tr>
<tr>
<td>New Rochell, New York</td>
<td>1957</td>
<td>1-pasteurized or certified milk or cream</td>
<td>1-day of week of pasteurization or a numerical code</td>
<td></td>
<td>1-all milk and products shall be delivered on the day shown or on the day following the day or date shown</td>
</tr>
<tr>
<td>Newton, Massachusetts</td>
<td>1957</td>
<td>1-milk and milk products</td>
<td>1-day of the week of pasteurization</td>
<td></td>
<td>1-72 hours after production</td>
</tr>
</tbody>
</table>

*Between production and sales in case of raw milk for retail.
<table>
<thead>
<tr>
<th>Local (City and State)</th>
<th>Regulation In Effect in</th>
<th>Dated Product</th>
<th>Required Date</th>
<th>Time Limitation Between Production and Pasteurization</th>
<th>Time Limitation Between Pasteurization and Sale*</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York, New York</td>
<td>1957</td>
<td>1-certified milk, skin milk and cream in bottles 2-certified milk, skin milk and cream in cans 3-milk, cream, flavored milk or flavored drinks 4-milk or milk products from outside sources, approved for manufacturing purpose 5-pasteurized milk or cream 6-formula milk 7-pasteurized milk or cream split at a place other than where pasteurized 8-standardized pasteurized cream, standardized at place other than where pasteurized</td>
<td>1-day of week when sale must end 2-day of the month, month and year when sale must end 3-day and time when distribution may begin 4-date of pasteurization or manufacture 5-day and time when distribution may begin 6-day and period of the day in which milk was prepared 7-date and time when distribution may begin 8-date and time when distribution may begin</td>
<td>1-42 hours of midnight the day of production 2-42 hours of the day of production 3-52 hours after day shown 4-72 hours after day shown in cream 5-36 hours after pasteurization 6-may not be delivered later than the of its preparation 7-distribution should be as indicated on original tag 8-distribution may begin as earliest date indicated on the original tag before standardization</td>
<td></td>
</tr>
<tr>
<td>Radnor Twp., Pennsylvania</td>
<td>1957</td>
<td>1-milk and dairy products</td>
<td>1-day of week of pasteurization</td>
<td>1-66 hours after pasteurization</td>
<td></td>
</tr>
<tr>
<td>Sharon Hill, Pennsylvania</td>
<td>1957</td>
<td>1-milk</td>
<td>1-day of pasteurization</td>
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<tr>
<td>Yeadon, Pennsylvania</td>
<td>1957</td>
<td>1-milk</td>
<td>1-day of pasteurization</td>
<td>1-66 hours after pasteurization</td>
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</tr>
<tr>
<td>Baltimore, Maryland</td>
<td>1972</td>
<td>1-pasteurized milk products</td>
<td>1-month and day of the month when sale must end</td>
<td>1-7 days including the day of pasteurization</td>
<td></td>
</tr>
<tr>
<td>New York, New York</td>
<td>1972</td>
<td>1-pasteurized milk and cream</td>
<td>1-month and date</td>
<td>1-66 hours after pasteurization</td>
<td></td>
</tr>
</tbody>
</table>

*Between production and sales in case of raw milk for retail.
THE IMPACT OF PUBLIC HEALTH REGULATIONS ON THE ECONOMICS OF THE FLUID MILK INDUSTRY

Sanitary Milk Control and the Movement of Milk

All local and state health authorities license firms who sell milk for fluid use. In this way, local and state health authorities can control the amount of milk admitted and sold in a given market.

Many municipalities and states have controlled the supply of milk by exercising their licensing power. Some localities prohibited outright the entry of outside milk by issuing permits only to producers and/or handlers within specific geographic areas. For instance, Baltimore, prior to July 1972, required that milk for its consumers be processed within the city limits. This regulation was maintained in the Baltimore City Health Ordinance for almost 20 years after such restrictions were declared "unconstitutional" by the Supreme Court. Inspection fees sometimes favored policies related to local producers and handlers. It was the practice in many localities to differentiate sanitary regulations and refuse to reciprocate inspections. In many cases, license and inspection costs made the movement of outside milk to local markets uneconomical.

In 1955, the United States Department of Agriculture found that, out of 312 cities surveyed, 100 refused to accept milk from farms inspected by their own State Department of Health or Agriculture; 48 refused to accept milk from farms inspected by some other state and 123 refused to accept milk from farms inspected by other cities.

Some states inspected out-of-state milk only when there was a shortage of state-produced milk. Delaware, for example, in its 1950 public health regulations stated: "In case the regular sources of supply are insufficient to meet demands for fluid milk, milk may be brought into the state of Delaware without such permit... such milk shall be subject to immediate inspection upon arrival and shall meet requirements substantially equivalent to those under these regulations." Discrimination among cities with different sanitary regulations was common, as demonstrated by one city's refusal to accept milk from a neighboring city because its local health department required farm inspections four times per year while its neighboring city provided only three inspections per year.

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8 Delaware State Board of Health, Milk Regulations, 1950, p.5.
In addition to restrictions in the written law, there existed another less tangible restriction: the discriminatory enforcement and application of sanitary regulations. Some dealers pointed out that inspections were more rigid for distant plants when local supplies were sufficient. Long delays in granting permits was another example of restrictive application of regulations.

The cost and inconvenience of duplicate inspections by different health agencies presented a serious obstacle to the economical movement of milk. Jones found that in 1967 dairy plants in the United States were regulated by an average of 4.8 sanitary authorities. About 65 percent of them were local health departments, 27 percent were state and eight percent were federal military agencies. He also found that during 1967 each plant was inspected an average of about 24 times. These figures were probably higher in earlier years.

In 1969, the United States Department of Agriculture surveyed different U.S. cities health and sanitary regulations affecting the dairy industry. The survey responses were obtained from the United States Department of Agriculture and analyzed for 16 Northeastern cities. With one exception, none of the cities surveyed had any geographic license restrictions for production or processing. However, one-third of the cities studied indicated there had been previous regulations requiring milk to be produced or processed within a specific geographic area.

Over half of these Northeastern cities indicated their sanitary regulations were not markedly different from those administered by states or civil divisions nearby. For the remaining regulations, differences existed in the form of more rigid requirements for equipment, bacteria counts, frequency of inspection and milk dating. In a number of these, the type of inspection was the source of the difference. About half the replies indicated that these differences were a hindrance to the free movement of milk and to competition in fluid milk markets. In reply to a question on reciprocal agreements among sanitary authorities, the majority indicated some kind of agreement with surrounding markets. However, the reciprocity was less than complete in most cases. For example, West Virginia markets had reciprocity with Ohio, Maryland, Virginia and Kentucky but did not accept Pennsylvania bottled milk. New Jersey markets had a reciprocity agreement with Pennsylvania but not with New York. One reply indicated that reciprocity with a neighboring market failed to exist because of a personality conflict.

During World War II, the Northeast was able to import substantial quantities of fluid milk for the midwest due to a temporary relaxation of local health health regulations. With such relaxation, the District of Columbia was able to import over 25 thousand gallons of milk per day in 1946, (Table 5).10

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Table 5: Imports of "Emergency Milk"* to the District of Columbia for the Period 1941 to 1950.

<table>
<thead>
<tr>
<th>Year</th>
<th>Outside Purchases (Gallons Per Day)</th>
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<tbody>
<tr>
<td>1941</td>
<td>5,760</td>
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<tr>
<td>1942</td>
<td>14,085</td>
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<tr>
<td>1943</td>
<td>12,439</td>
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<tr>
<td>1944</td>
<td>14,880</td>
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<tr>
<td>1945</td>
<td>25,330</td>
</tr>
<tr>
<td>1946</td>
<td>11,100</td>
</tr>
<tr>
<td>1947</td>
<td>5,174</td>
</tr>
<tr>
<td>1948</td>
<td>1,824</td>
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<tr>
<td>1949</td>
<td></td>
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<tr>
<td>1950</td>
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</tbody>
</table>

*"Emergency Milk" is the milk imported to the Northeast to meet the wartime demand.

The large scale movement of "emergency milk" also demonstrated that milk could be transported long distances without any significant increase in temperature or deterioration in its quality.

Consumption and Demand for Milk

Public health departments, while stimulating milk consumption by improving its sanitary quality and palatability have meanwhile tended to hinder increased consumption through some facets of their regulations and policies. The combined effect of the costly compliance with sanitary regulations and the economic protection of local markets was a higher price of milk for fluid use. Consequently, higher prices of milk discouraged milk consumption. In addition, by preventing the free movement of milk from surplus markets to markets with shortages, shortages, sanitary regulations prevented increased consumption in these markets. In 1955, the United States Department of Agriculture concluded that the consumption of milk could be increased by about a quarter of a billion pounds if regulations were modified to allow free movement between markets. 11

Sanitary regulations also discouraged the introduction of new dairy products; the battles over oleomargarine and filled milk are classic examples. Public health regulations which specify and set standards for all dairy products to be sold require any new products to be examined and approved by the health department. This was usually a time consuming and tedious process as many health departments lacked adequate facilities and were not willing to initiate the acceptance of new products.

Since consumer preference and taste are continuously changing, the consumption of fluid milk products tends to increase if the market is provided with a greater variety of new dairy products. For example it is to the benefit of the dairy industry to have fluid milk competing with flavored milk, rather than with orange juice for the breakfast beverage. It took many years for flavored milk, homogenized milk, half and half and other fluid milk products to be commonly accepted by health departments.

Public health regulations have also discouraged some distribution channels. The prohibition against outdoor-type milk vending machines in some localities was not validly justified from the public health standpoint, and was most probably designed to protect other established forms of distribution. Such restrictions are likely to close a popular outlet for the distribution and consumption of milk. Milk dating regulations discouraged some retailers from keeping adequate stocks and as a result stores selling dated milk were found to be out of milk near closing time. 12

Cost of Production and Distribution

Public Health regulations have had an important effect on capital requirements and operating costs of production, processing and distribution of fluid milk. License fees, equipment requirements, inspection costs, dating requirements, etc. are all directly or indirectly reflected in the dairy firm's costs. However, the real issue was not whether to keep or eliminate these regulations, since basic sanitary requirements do not unduly burden costs, but to do something about requirements which added to costs without contributing significantly to the safety and wholesomeness of milk.

In 1967, fluid milk plants in the United States paid regulatory sanitation authorities an estimated $3.4 million in inspection fees.\textsuperscript{13} Other expenditures associated with plant inspection by these authorities cost an additional $500,000. Dairy farms paid considerably less fees to these authorities. The annual cost of duplicate farm and plant inspection to the dairy industry was estimated at about one million dollars in 1969.\textsuperscript{14}

Duplicate inspection is usually associated with duplicate regulations and requirements. A single dairy farm or plant may have to satisfy a number of requirements to be able to sell its milk in different markets. The District of Columbia Health Department at one time permitted the use of the five gallon milk can with dispensary hoses on the bottom of the can while Baltimore and the state of Maryland required the hoses to be mounted on the side of the can. A Maryland dealer located in suburban Washington would need two types of containers to serve the same milk to two markets. Similarly, some regulations required sterilization. The result of such differences in regulations is reflected in capital requirements and operating costs among neighboring dairies. Similarly, the variation in the standards for the composition of milk can be costly for a single plant which distributes milk in two or more markets with different standards. Meeting the highest standard may create a cost disadvantage for the firm in markets where the standards are lower.

Milk dating regulations which are designed to insure the freshness and wholesomeness of milk were proven by the United States Public Health Service to be of little or no significance in protecting public health, but such regulations cost the dairy industry dearly. In stores, milk with the most recent date is usually chosen first by consumers and any milk not sold before the next delivery is likely to stay on the shelf until its expiration date.\textsuperscript{15} The dating requirement also makes the five-day week operations of milk plants impractical. Black and Friend found that milk dealers who are required to place the day of the week on the milk containers they distribute to wholesale outlets have more milk returned and handle a larger percentage of milk on special deliveries than other dealers. Milk returned unsold is usually used in manufactured products or dumped. As a result, a dealer loses the initial processing and distribution costs and part or all of the value of the returned milk.

Public health regulations may indirectly affect production, processing and distribution costs by hindering the adoption of available technology. Sanitary regulations in many instances have increased costs or prevented the adoption of cost saving techniques. For example, it was not until 1955 the Rhode Island approved assembly by tank trucks from farm bulk tanks.\textsuperscript{16} Prior to that date,


cans were the only approved containers. Until a few years ago some states prohibited the use of dispensers. Of the states which permitted their use, some had regulations which prevented their maximum use. Production and distribution costs were also burdened by differences in sanitary requirements. Production costs could be lowered by manufacturers' standardization of widely accepted specifications for dairy equipment.

Public health regulations which limited the area of distribution discouraged the establishment of large scale, low cost plants. Even when built to an optimum size, plants were prevented from operating at capacity due to restrictions on the source of supply or distribution area. These inefficient deviations resulted in higher production, processing and distribution costs.

**Competition in Fluid Milk Markets**

Throughout their development, local health regulations have directly or indirectly affected the competitive environment and the competitive position of different groups in fluid milk markets. An official statement by the New York City Board of Health in 1969, reads as follows:

"The Board has agreed that they will give further study to a number of code requirements which in the light of current knowledge and best modern public health practices, may no longer be necessary. Elimination of such provisions now, the Board agreed, may substantially affect economic, trade and labor practices in the milk industry. For that reason, the Board was not willing to eliminate them without further study and consideration..."¹⁷

Local ordinances probably affected the number of relative size of firms in the industry in two opposing ways. First, these regulations provided economic protection to local producers and dealers, which tended to keep small, less efficient, firms in business. At the same time, some ordinances had restrictive, expensive requirements that limited entry and competition in the local market. The combined effect was increasing local market concentration for a few dominant firms in each market. Between 1948 and 1965, the number of plants processing fluid milk products in the United States decreased by nearly two-thirds.¹⁸

Through permit and inspection requirements or the discriminatory enforcement of these provisions, local health regulations established protected milksheds around local markets. These barriers against entry to local markets retarded...

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the expansion of some national and regional concerns. National and regional firms found it impossible to enter many local markets without acquiring already established firms, which partially explains the widespread expansion through mergers of most national firms. Horizontal, instead of vertical intergration was adopted to acquire market shares of already established local dairies. Large firms were unable to build plants of efficient size in areas of local distribution. Health regulations indirectly facilitated the exit of many local plants where their businesses were purchased by outside firms.

There are many examples of the effect of public health regulation on competition in fluid milk markets. Some localities issued a special permit for the sale of milk from a vehicle to a consumer. This requirement affected competition among distributors. The requirement of sub-dealer's permits had indirect health implications and were occassionally used to protect the unionized distributors. Dating requirements were maintained in a number of localities despite their lack of public health significance in response to strong support by driver's unions which feared less frequent deliveries, larger loads, and reduced employment.

In his testimony before a subcommittee of the Agriculture Committee of the United States Senate in 1950, Mr. Holman, former Secretary of National Milk Producers Federation, was opposing a compulsory Federal milk sanitation code. He said:

"Frequently our members have found that milk distributors in local markets were refusing to buy the local supply at the prices agreed upon by the cooperatives and the milk dealers, while at the same time these dealers were acquiring milk from other markets...milk which they had purchased at lower surplus prices, transported to the city in question and then sold in bottles as fluid milk. One factor that holds this practice to minor levels is that most local regulations require that the source of milk supply for the area be inspected by the local authorities."

By providing economic protection to local markets, health regulations have contributed to the trend toward fewer but larger firms in local markets. The increase in local concentration created an oligopoly situation with a few local firms capturing the largest share of the market. This was the case in Pennsylvania markets in 1967.

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19 United States Congress-Senate. "Utilization of Farm Crops - Milk and Dairy Products." Hearing before a sub-committee of Senate Committee on Agriculture and Forestry. Report Number 604, 82nd Congress. 1951.

Whenever the entry of outside firms to local markets is closed, local firms gain power over fluid milk prices. This trend may be self-defeating, however, because as local dealers grow larger they seek the expansion of their distribution areas. As a result, they often join with regional and national firms in a legal battle against local public health restrictions. Producers in milk-exporting states also have fought these restrictions. As Federal milk orders expanded to cover more of the large fluid milk markets, producer organizations in milk-importing states realized their support of restrictive measures in sanitary regulations.

Sanitary Regulations and the Price of Milk

Restrictive sanitary regulations have generally resulted in higher costs of milk production, processing and distribution. They have also made it possible to limit the supply of milk in local markets and have provided degrees of monopoly power to local producers and handlers. It is believed that this combination of factors raised milk prices in some markets, as price differences between markets sometimes appeared to depend on the degree of rigidity between their sanitary regulations. In 1955, a study by the United States Department of Agriculture concluded that:

"Regulation of one type or another accounted for most, but not all, of the amount by which prices to milk producers were above a Midwestern base price plus an allowance for transfer cost in 1953-54. If these regulations were modified to permit the free movement of milk, the price to about one-fourth of the producers of fluid milk in the United States would probably decline an average of about 48 cents per hundred pounds. In some markets the decline would range up to 75 cents to one dollar per hundred pounds."21

The same study further stated that among all regulations, sanitary regulations were the most restrictive.

Public health regulations influence the price of fluid milk not only through supply control, but also through effecting the cost of production, processing and distribution of milk. Prices must cover costs if firms are to survive in the long run.

Market Performance

The evaluation of the effect of local health regulations on market performance is difficult. They no doubt increased production, processing and distribution costs and resulted in higher profits through market protection that might not have occurred otherwise. The effect of local health regulations on the progressiveness of the fluid milk industry was often negative. Ordinances were designed for a given technology and for given products. New innovations or new products were usually impeded by delays in adoption. In addition, ordinances with obsolete provisions were often enforced for a long time before revised regulations were issued. In this situation, local health regulations constituted an obstacle to technological and managerial innovations and to the progress of the dairy industry. Local health ordinances sometimes contributed to inefficiencies in production and distribution by preventing firms from building optimum size plants and operating plants at optimum capacity.

However, despite the above, local health regulations should be credited with maintaining good quality, safe milk. Milk-borne epidemics have been almost eliminated and quality standards have been greatly improved as a result of the enforcement of local health regulations.

THE IMPACT OF CHANGES IN SANITARY MILK REGULATIONS ON COMPETITION IN FLUID MILK MARKETS

As mentioned earlier, during the past two decades local health regulations have been disappearing while the remaining ones are often less stringent and more uniform. The purpose of the following analysis is to determine the effect of such changes on competition in fluid milk markets in the Northeast. The authors found that it is a difficult matter to precisely estimate the effect of changes in public health regulations on economic aspects of the fluid milk industry due to the lack of suitable quantitative data on several of the relationships involved.

In a competitive market where milk can move freely, the price differential for Class I milk between markets is expected to approximately equal transportation costs from the surplus producing areas. Therefore, in the absence of obstacles to the movement of milk, the price of Class I milk in Northeastern markets (shortage area) should be positively related to distance from Midwestern markets (surplus area).

The analysis in this study, as well as in previous studies, has indicated that 25 years ago local health regulations were a major obstacle to the movement of milk. In 1955, the U.S. Department of Agriculture found that markets with relatively high prices for fluid milk had the most restrictive sanitary regulations and concluded that there existed a positive relationship between these two variables.\(^\text{22}\) It should be mentioned here that sanitary regulations were not

the only determinent for the price level. Supply and demand conditions, state and federal price regulations, as well as many other factors were contributive. The importance of each factor in influencing the price level varied from one market to another as well as over a period of time.

The analysis of the chapter is in two parts. The purpose of the first is to examine the relationship between regional producer price differences and distance from the surplus region during three time periods. The second part involves finding the deviation of actual Class I prices in Northeastern markets from hypothetically competitive prices during three time periods.

Regression analysis was used to estimate the relationship between the regional difference in dealer's buying prices for Grade "A" Class I milk and the distance from each market to Milwaukee, Wisconsin. Milwaukee was selected among several Midwestern points which could have been used with equal validity to represent the surplus region. The shortest highway mileage was used as a measure of distance since milk is transported mainly by tank trucks.\(^\text{23}\) Price data was used for the years 1950, 1960 and 1971. Annual prices were calculated as an average of the published monthly prices. The observations were made for cities in the Northeast. The sample collected consisted of 24 observations in 1950, 33 observations in 1960 and 36 observations in 1971. Vermont was collected from the sample since it is a surplus milk producing state. The sample for 1950 and 1960 did not include markets in Pennsylvania because the Pennsylvania Milk Control Commission was fixing minimum producer prices for fluid milk primarily on the basis of costs of production.\(^\text{24}\) Pennsylvania prices were found to be much above the prices in the surrounding states, although, after the entrance of Pittsburgh into the Federal Milk Order System in 1969, prices in Pennsylvania markets were more consistent with prices in surrounding Northeastern markets.

The two variables used in the least squares regression analysis were the price differential between markets in the Northeast from the Milwaukee price and the distance of each market from Milwaukee, Wisconsin.

The statistical model used for the years 1950, 1960 and 1971 was as follows:

\[
(P_j - P_o)_{1950} = a_1 + b_1 D_j \\
(P_j - P_o)_{1960} = a_2 + b_2 D_j \\
(P_j - P_o)_{1971} = a_3 + b_3 D_j
\]


where:

\[ P_J = \text{Dealers' buying price at Northeastern Market J.} \]

\[ P_O = \text{Dealers' buying price at Milwaukee, Wisconsin.} \]

\[ D_J = \text{The distance between market J and Milwaukee, Wisconsin.} \]

To determine the magnitude of barriers to trade in each market, an estimated price was calculated. The estimated price was the expected price in each market under simulated perfectly competitive conditions. To calculate the expected price, the shortest highway distance between each market and Milwaukee was obtained. Each distance was multiplied by transportation costs per hundred-weight mile. Transportation costs were added to the Milwaukee dealer's buying price to determine the estimated price in each Northeastern market. The next step was to subtract the estimated price from the actual quoted price in each market. The resulting figures were used to measure the degrees of protection for the different markets in the Northeast.

### The Regression Analysis

The ordinary least squares regression equations and the correlation of determination \( R^2 \) for the three years of 1950, 1960 and 1971 were found to be as follows: \(^{25}\)

\[
(P_J - P_O)_{1950} = .7737 + .0011 D_J \\
\text{(2.6805) (3.6101)} \\
R^2 = .3720
\]

\[
(P_J - P_O)_{1960} = .1985 + .0016 D_J \\
\text{(-.6755) (5.0958)} \\
R^2 = .4558
\]

\[
(P_J - P_O)_{1971} = -.0513 + .0014 D_J \\
\text{(-.3342) (7.9374)} \\
R^2 = .6495
\]

\(^{25}\) The figures between brackets are "t" statistic.
For the year 1950, the value of "t" statistic for the intercept "a" was 2.6805. This value is significantly different from zero at the five percent confidence level with 22 degrees of freedom. The "t" value for the regression coefficient "b" was 3.6101 which is significant at the five percent level. The correlation of determination was found to be .3720 while the standard error of estimate for "b" was found to be .0003. The relatively low R² indicates a relatively weak linear relationship between the regional price differences and the distances. Distance accounted for about 37 percent of the variation in price differences among Northeastern markets. The high significance of the value "b" and the low value of the standard error of estimate increases confidence in the results and in the predictability value of the regression equation. (Figure 2).

\[
(P_j - P_o)_{1950} = .7737 + \frac{.0011}{DJ}
\]

Figure 2: Fluid Milk Price Differences \((P_j - P_o)\) Related to Distance from Milwaukee, Wisconsin \((DJ)\), 1950.
In 1960, the value of "t" statistic for the intercept $a_2$ was .6755 which is not significant at the five percent confidence level with 31 degrees of freedom. This indicates that the regression line is more likely to pass through the origin. On the other hand, the value of "t" statistic for the regression coefficient $b_2$ was 5.0958 which is significantly different from zero at five percent confidence level with 31 degrees of freedom. The value of $R^2$ was .4558 which is moderately low but higher than that of 1950. The standard error of estimate for $b_2$ was .0003. The higher value of $R^2$ and the low value of the standard error of estimate leads us to conclude that in 1960, the fit of the regression line was better than equation. (Figure 3).

![Graph](image)

Figure 3: Fluid Milk Price Differences $(P_j - P_o)$ Related to Distance from Milwaukee, Wisconsin $(D_j)$, 1960.
For 1971, the relationship between milk price differentials and distance from the surplus area was better than for 1950 and 1960. The value of "t" statistic for the intercept $a_3$ was -.3342 which is not significantly different from zero at the five percent confidence level with 34 degrees of freedom. This indicates a good probability that the regression line goes through the origin. On the other hand, the value of "t" statistic for the regression coefficient $b_3$ was 7.9374 which is significant at the five percent confidence level with 34 degrees of freedom. The value of $R^2$ was .6495 which is relatively high, particularly since we are using cross section data. This indicates a relatively strong linear relationship between price differences and distance in 1971. The value of the standard error of estimate for $b_3$ was .0002 which is lower than that of 1950 and of 1960 (Figure 4).

\[ (P_j - P_o)_{1971} = -.013 \pm .0014 \]

Figure 4: Fluid Milk Price Differences $(P_j - P_o)$ Related to Distance from Milwaukee, Wisconsin $(D_j)$, 1971.
Actual vs. Expected Prices

The deviation between actual and expected dealers' buying prices of fluid milk for different markets in the Northeast was estimated for 1950, 1960 and 1971. As previously mentioned, expected prices were calculated by adding the dealers' buying price in Milwaukee, Wisconsin to the transportation costs to different points in the Northeast, and subtracted them from actual prices to determine the magnitude of deviation between the two prices in each market.

In 1950, the difference between actual and expected prices ranged from $+0.88 to $-0.35 with a mean of $+0.20 per market, (Table 6). The range of variation for 90 percent of the observations was found to be $+1.10. The District of Columbus had the highest positive deviation from expected price while Albany led the highest negative deviation from expected price.

In 1960, the difference between actual and expected price ranged from $+1.02 to $-0.86 with a mean of $+0.05 per market, (Table 7). However, two cities in New York far exceeded the rest of the observations, and, at the same time, two cities in West Virginia and one in Delaware were notable below the rest of the observations. The range of variations for 90 percent of the observations was $+0.80.

In 1971, the difference between actual and expected prices ranged from $+0.47 to $-0.30 with an approximate mean of $0.00 per market, (Table 8). The range of variation for 90 percent of the observations was $0.57, Buffalo, New York had the highest positive deviation from expected price while Charleston, West Virginia had the highest negative deviation from expected price. It should be noted that in 1971, New York, among all Northeastern states seemed to have the greatest variation in prices among its markets.
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In the United States, the dairy industry has been thoroughly regulated and extensively investigated by special commissions, and by regulatory agencies. Public health regulations of the fluid milk industry started during the 1850's. Among the first local public health regulations to be tested in court were those in the Northeast.

The flow of cases, relevant to this study, through the United States Federal Judicial System, is illustrated in Figure 5. At the top is the United States Supreme Court, the court of last resort in the nation.

Figure 5: The Flow of Cases in the United States Judicial System.\(^\text{26}\)

The decisions of courts of final appeal are considered as much a part of the law as the written constitution and the statutes which are promulgated by the elected representatives of the people. These court decisions, commonly known as the "unwritten law," are of great importance in determining the legal principles behind sanitary milk control in the United States and frequently precede statutory changes.

The United States courts have generally recognized the importance of milk and its products to public health and have consistently upheld the right of state and local governments to establish and enforce reasonable sanitary standards for milk and its products. In a ruling by the Illinois Supreme Court in 1914, Justice Dunn stated:

"There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely and more seriously affect the health of those who use it. The regulation of its sales is an imperative duty that has been universally recognized." 28

The legal basis for the sanitary control of milk is derived from the police power granted to the states by the Federal Constitution to protect the public health and welfare. The state may, in turn, delegate this power to its subdivisions. The federal government retains authority for the sanitary control of imported milk, milk shipped in interstate commerce, milk used in federal territories, military establishments, and communities not regulated by agencies of state or local government. The court cases reviewed in this study included disputes over the right to promulgate and enforce different health regulations such as those related to permits and inspection, bacteria and chemical standards, pasteurization and cooling of milk as well as grading, containers, labeling and dating of milk. In recent years, the courts have generally upheld public health regulations as long as they were related to public health, consistent with statutory law, reasonable and not capricious, and neither arbitrary nor discriminatory. The courts have also ruled that health regulations should be enforced in a reasonable and non-discriminatory manner.

The first recorded case concerning a milk regulation was in Massachusetts in 1860. The court upheld the validity of the Massachusetts Act of 1865 which prohibited the adulteration of milk and said that knowledge of adulteration by the seller must be shown in order to convict him. A later decision, however,


28 Kay Vs. Chicago (1914), 263 Illinois 123.

upheld the conviction of a milk dealer for adulteration of his milk regardless of his cognizance of the adulteration. Many subsequent cases were based on constitutional questions on a wide variety of aspects of public health regulations pertaining to milk as illustrated in the following section.

**Court Decisions on Specific Aspects of Sanitary Milk Control**

**Permits and Inspection**

The conduct of the dairy industry is a matter of public concern. Under the police power of the state, the state has the right to regulate the conduct of any business, occupation or profession which has an important impact on the public. In order to protect public health, the state and its subdivisions may issue licenses or permits to different groups engaged in the milk industry. Permits are granted to individuals in the industry who adhere to standards and requirements set by public authorities. Therefore, public health authorities may require inspection as a condition for granting and maintaining a permit.

**Permits**

The courts upheld the licensing power of state and local health authorities over the production and distribution of milk as long as the license requirements were reasonable and applied without discrimination. State and local health departments may require a license from producers and dealers located beyond the territorial limits of the state, county or municipality whenever the milk moves into their territories. However, health authorities may not refuse to license either producers or handlers of wholesome milk merely because it is imported from distant sources or because local supplies of milk are adequate.

In an early New Hampshire case, the court ruled that the unguided and unrestrained discretion of the City Board of Health in issuing licenses to sell dairy products would make such a statute invalid. The court further ruled that a legislature may regulate the sale of dairy products only so far as protection of public health requires. In New Jersey, a milk company was denied a permit by the health officer solely on the grounds that the city already had a sufficient supply of market milk. Consequently, the court ruled that such a position by the health officer was unreasonable, arbitrary, capricious and discriminatory and the basis for the denial was characterized as an excuse rather than a legal reason.

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31 Whitney Vs. Watson (1913), 85 N.H. 238, 157 A 78.
32 Sheffield Farms Vs. Seaman (1935), 114 NJL 455, 177 A. 372
In a Texas decision, the court ordered that the city health officer issue a permit to sell milk to a dealer who had complied with public health regulations and applied for the permit when the health officer had failed to act on the basis that the failure to act was arbitrary and capricious and an abuse of the discretion vested in the health officer.  

**Inspection**

The court has generally upheld the right of state and local health authorities to inspect dairy farms and dairy plants to determine compliance with sanitary regulations. In 1966, a Massachusetts court said:

> "Legislature in authorizing adoption of local sanitary codes and the Department of Health in promulgating regulations authorizing inspection of premises at reasonable times acted within constitutional limits."

The courts have generally upheld the right of health authorities to inspect extra-territorial dairy farms and dairy plants to ascertain the sanitary quality of milk and dairy products sold in local markets. If a dairy firm refuses to be inspected, the local health department may refuse to permit the sale of its milk in the local market.

As in the case of granting permits to distant producers and dealers, early court decisions were not in agreement or whether local health authorities had the authority to refuse inspection of outside milk. An early Ohio case held that inspection of a dairy beyond the city limits is not enjoined by the laws of that state. In a Georgia case it was ruled that if a dairy is inaccessible and can be inspected only with great difficulty and at considerable expense, the city is generally not required to make such an inspection and may refuse to accept the milk from the dairy for sale within the city. At the same time, most court decisions, particularly the more recent ones, have denied the right of local health authorities to refuse inspections of distant dairies as long as these dairies were ready to pay the cost of inspection. In Connecticut, the state law defined the natural milkshed of that state in include "the state and

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33 City of Greenville Vs. Gabells (1947), Tex. 207 S.W. (2d) 898.


35 State Vs. Spitler (1933), 47 Ohio App. 114, 190 N.E. 584

that area or areas adjacent to the state in which fresh milk for daily use in Connecticut is, or may, be purchased and which gradually expands or contracts with the operations of the law of supply and demand." Dairy farms outside the state were subject to the same registration, inspections and approval and those within the state. The Dairy and Food Commissioner was forbidden to inspect dairy farms beyond the natural milkshed except in cases of emergency or shortage. In a court case brought by dairies in New York who were denied inspection, the Connecticut Supreme Court decided that the sole questions was whether the milk could be preserved and transported to Connecticut in time to be useable as fresh milk.  

The 1953, the Pennsylvania Supreme Court ruled against a municipality within that state which had blocked entry of producers shipping to a milk plant by refusing to inspect it. The court in its ruling said:

"The City of Johnstown refused to make any inspection whatever but nevertheless, in effect, condemns the company's product much like a court condemning a man without a hearing. It is obvious that if such an attitude were to be judicially sanctioned as being legal and constitutionally permissible, every other municipality in the commonwealth as well as the commonwealth itself could adopt it likewise, with the result this company could be refused the right to sell its milk, although, a perfectly proper object of commerce, anywhere in the entire state. Can a lawful vendor or a lawful product be legally brushed off in this manner"  

Permit and Inspection Fees

A fee may legitimately be charged by public health authorities, but it must be reasonable and non-discriminatory.  Permit and inspection fees are not a tax and should not exceed the actual cost of inspection and the administrative cost of licensing and may not be used as a revenue measure. What constitutes a reasonable fee is usually dependent upon local circumstances.

The fee may be a flat rate or it might be based on some measure such as number of cows, number of vehicles, volume of milk or distance to be travelled. In some cases, health departments did not have the statutory power to levy fees. For example, in 1960, the court in an Ohio case ruled:

"Power of the county Board of Health to regulate wagons or other vehicles includes power to impose an inspection fee and to the extent that sanitary regulations of the board impose such a fee, they were invalid as exceeding the administrative regulatory authority granted to the board. 40

In Texas, the city of Port Arthur required that each dealer selling milk in the city pay an inspection fee of 50 cents per one thousand quarts of milk received into or distributed for the milk plant, as well as a ten dollar permit fee per dairy farm, whipping to the dairy. A milk company found that it had to pay an inspection fee of about $40 on its Houston plant in addition to a $10 dollar fee imposed on each producer supplying such plants, even though only a small amount of milk was sold from the Houston plant in the City of Port Arthur. The court declared the regulations void in its application since it encroached upon the jurisdiction of other cities and resulted in setting up a trade barrier. 41 A similar decision was handed down in a Kansas case in 1961. 42 In Oklahoma, the court ruled that a municipal ordinance which required the processor of milk to pay additional license and inspection fees for the producers themselves pay the required inspection fees, would impose an unreasonable and discriminatory exaction as conditions precedent to engaging in a lawful business. 43

Many of the legal disputes over permit and license fees were related to cases of discriminatory fees against distant producers and dealers. In most of these cases, the court determined such fees invalid on the grounds that they were discriminatory, unreasonable, conflicting with state statutes or created trade barriers against interstate or intrastate commerce. In New York, the City of Long Beach imposed a license fee of $100 on milk dealers' products manufactured, bottled and processed outside the city but sold within it. The court found such

41 City of Port Arthur Vs. Carnation Milk Company (1951), Tex 238 S.W. (2d) 559.
42 Sunflower Tip Top Dairies Company Vs. City of Russell (1961), Kan. 362 P.
43 City of Henryetta Vs. Rose Lawn Dairy (1952), Okl. 239 Pac. (2d) 774.
a fee unreasonable, arbitrary and excessive.\textsuperscript{44} Similarly, a court in Florida found a city ordinance requiring payment of $25 a day for monthly inspections of dairies five miles or more beyond the city limits, while no charge was required for inspecting dairies within the city, unreasonable and void.\textsuperscript{45}

A New Hampshire judge ruled that an act related to the license fees of milk distributors which, through the imposition of fees, sought to impose additional fees which would stimulate milk consumption by establishing a fund for advertising, possessed essentially the characteristics of an excise or occupational tax and was thus unconstitutional.\textsuperscript{46}

Standards for the Composition of Fluid Milk Products

Local, state and federal health regulations often set standards of milk composition and prohibit the sale of milk or milk products with a composition below the legal standard. The purpose of such standards is not only protection of public health but also to prevent fraud and deception.

Most early disputes on milk standards concerned the adulteration of milk and milk products. Since the turn of the century, a wide variety of cases dealing with legal standards have been considered by the courts. The cases ranged from those dealing with the chemical composition of milk and its products, to the imitation of such products and the composition of new products.

The courts have generally upheld regulations prohibiting the addition of water or harmful foreign substances to milk and its products. The sale of adulterated products or products below the legal standard may be considered a felony, regardless of the seller's knowledge of the adulteration. In an early decision, one court stated:

"It is of the greatest importance that the community shall be protected against the fraud now practiced so extensively and skilfully in the adulteration of articles of diet by those who deal with them and if the legislature deem it important that those who sell them shall be held absolutely liable, notwithstanding their ignorance of the adulteration, we can see nothing unreasonable in throwing the risk upon them."\textsuperscript{47}

\textsuperscript{44}City of Long Beach Vs. Sealtest Foods Division of National Dairy Products Corp. (1961), 222 NYS (2d) 607.

\textsuperscript{45}Root Vs. Mizel (1928), 95 Fla. 979, 117 So. 380.

\textsuperscript{46}Opinion of the Judge (1953), N.H. 96 A. (2d) 733.

\textsuperscript{47}Comm. Vs. Farren (1864), 91 Mass (4 allen) 489.
The Supreme Court of Florida ruled in 1935 that cities could adopt standards higher than those adopted by the state. Therefore, the court upheld a city regulation that chocolate milk should be made from Grade A milk and it would further contain a minimum of 3.5 percent butterfat, despite the fact that the state law required a minimum of only 2.0 percent butterfat in chocolate milk. However, a dissenting judge declared that this ordinance should be void, since it absolutely prohibited the sale of wholesome food which the city might regulate or require to be labelled as to its indicated ingredients and its fat content.

In Washington, the City of Seattle had prohibited the sale of milk in which the cream line had been increased by any artificial means. A company had increased the butter fat content in milk to five percent by the addition of homogenized cream to the milk and labelled its product accordingly. The Supreme Court of Washington found that such a procedure did not violate city regulations since both pasteurized whole milk and cream were lawful products.

In 1970, a court investigated a dispute between a milk distributor and a producer over the butterfat content of fluid milk delivered by the producer. The State milk control board denied the distributor's petition to discontinue receiving milk from the producer because it allegedly contained from 3.3 to 3.5 percent butterfat, less than the 3.8 percent desired by the distributor. In its decision, the court upheld the board's decision on the grounds that milk with a butterfat content below 3.8 percent was not detrimental to public health and welfare.

A Connecticut case dealt with the definition of skim milk. It ruled that a statute defining skimmed milk as non-fat milk is not regulatory or prohibitory. The court further approved a statute providing that no persons shall sell milk from which any cream has been removed unless the product has been so labelled.

When oleomargarine, filled milk and other substitutes that contain non-dairy products were introduced, the dairy industry, and some public health authorities, tried to prohibit and discourage their sale by declaring such products adulterated and inferior substitutes for dairy products, and that their very existence would cause consumer confusion, deception and constitute a hazard to public health. In

48 Anderson Vs. Tampa (1935), 121 Fla. 670, 168 So. 546.
49 Arden Farms Co. Vs. City of Seattle (1940), 2 Wash. (2d) 650, 99 P.
1888, the United States Supreme Court upheld a state law prohibiting the manufacture and sale of oleomargarine within the state. The Supreme Court also sustained state legislation prohibiting the sale of colored oleomargarine and upheld taxes imposed upon oleomargarine by the federal government and the states. State courts did not always agree on the constitutionality of laws prohibiting the sale of oleomargarine. However, since World War II, oleomargarine has been sold without any restrictions in most states. In addition, Congress has since repealed the federal tax imposed on oleomargarine in 1946.

Filled milk has gone through regulation and legal battles similar to oleomargarine. The Federal Filled Milk Act passed by Congress in 1923 and amended in 1935 prohibited the shipment of filled milk in interstate commerce. The Supreme Court of the United States upheld the constitutionality of this act as a valid exercise of the police power of Congress over interstate commerce in 1938 and later in 1944. In an earlier decision, the United States Supreme Court sustained state laws regulating the sale of filled milk. However, state courts have generally denied the right of states to prohibit the sale of filled milk on the grounds that this product is not unwholesome or fraudulent when properly labelled. However, a few decisions have sustained state laws restricting the sale of filled milk. For example, in 1968, a court in Alabama ruled that the Alabama Filled Milk Law did not violate the due process clause of the Federal Constitution even though it completely prohibited the sale of filled milk. A Washington court sustained the State Filled Dairy Products Act on the grounds that such products cause the consumer confusion and constitute deception. At the same time, in Georgia, the courts denied the state the right to prohibit the sale of filled milk.

54 McCray Vs. United States (1904), 195 U.S. 27, 49 L. Ed. 78, 24 S. Ct. 769, 1 Ann. Cas. 561.
56 Quality Food Products, Inc. Vs. Beard (1968), Ala. 704.
57 Department of Agriculture Vs. Quality Food Products (1968), Ga. 163 S.E. (2d) 704.
In other cases, the courts ruled that filled dairy products were not milk products as defined in the sanitary regulations and accordingly not subject to regulation under public health laws.\textsuperscript{59} The appeals court in Arizona ruled that dairy products containing no milk fat and less than 8.25 percent solids not fat were not milk products within the meaning of the statute providing for regulation of milk products and, therefore, were not subject to the jurisdiction of or regulation by the State Dairy Commission.\textsuperscript{60}

**Pasteurization of Fluid Milk**

The majority of court cases involving pasteurization have concerned the validity of the provisions of health regulations requiring compulsory pasteurization of requiring all milk sold in a given market to be pasteurized within that market. The courts have, from the beginning, recognized the sanitary importance of pasteurization. In 1935, the Supreme Court of New York upheld a Rochester City Ordinance requiring that all milk sold in the city be certified or pasteurized.\textsuperscript{61} The court further stated:

"By a fair preponderance of the evidence it is established and the court finds that the process of pasteurization of milk makes it safe for human consumption and milk which had not been pasteurized and which is termed raw milk is the subject of greatest concern by health authorities and is safeguarded only with the greatest difficulty."

The first recorded court decision on pasteurization was in 1914.\textsuperscript{62} In that case, the Supreme Court of Illinois upheld a Chicago ordinance requiring that pasteurizing machinery be equipped with a recording thermometer. In another early


\textsuperscript{60} Odle Vs. Shamrock Dairy of Phoenix (1968), Ariz. App. 441 P. (2d) 550.

\textsuperscript{61} Tobey, J. Legal Aspects of Milk Sanitation. (Washington D.C.; Milk Industry Foundation) p. 93. 1937

\textsuperscript{62} Kay Vs. Chicago (1914), 263 Ill. 122, 197 N.E. 1104, Ann. Cas. 1915, C 67.
case, a Pennsylvania Court ruled that pasteurized milk is not a manufactured dairy product. In Georgia, the State Supreme Court sustained a city ordinance requiring that no milk be sold to the ultimate consumer except Grade A pasteurized or certified pasteurized milk. The court found that the regulation which prohibited the sale of unpasteurized milk was not oppressive, burdensome, arbitrary, unreasonable or unconstitutional. In a more recent case in Ohio, a court decided that it is within the scope of the police power to require, for the protection of public health, that all milk for human consumption be pasteurized.

In another court decision, lower inspection fees for pasteurized milk than for raw milk were upheld as not discriminatory.

A large number of court cases concerning pasteurization have dealt with ordinances requiring the pasteurization of milk within a given geographic area. Since 1951, the Supreme Court of the United States has established the principle that public health authorities cannot refuse to accept wholesome milk solely because it was pasteurized beyond certain geographic limits.

In a well published case, the Dean Milk Company of Chicago challenged the ordinance of the City of Madison, Wisconsin which prohibited the sale in the city of any milk not pasteurized and bottled at an approved plant located within a five mile radius from the center of the city. The ordinance also prohibited the sale, importation, receipt or storage of milk for sale except from approved sources located within 25 miles of the city. The Wisconsin State Supreme Court upheld the madison ordinance. However, the milk company claimed that the ordinance violated the interstate commerce clause of the constitution and took its complaint to the United States Supreme Court. The City of Madison argued that it could not afford to send inspectors to points distant from the city and that local governments should not be deprived of their autonomy in the reasonable regulation of milk for the protection of the health of their citizens. However, the U.S. Supreme Court found the Madison regulations unconstitutional and in its ruling the court said:

"In thus erecting an economic barrier protecting a major local industry against competition from without the state, Madison plainly discriminates against interstate commerce. This cannot do, even in the exercise of its unquestioned power to protect the health and safety of its people if reasonable non-discriminatory alternatives, adequate to conserve legitimate local interests are available."

Bacterial Standards and Grading

In the past, most health regulations established at least one grade of raw milk, pasteurized milk and certified milk. In recent years, the majority of public health authorities have not allowed the sale of non-pasteurized milk for human consumption at retail outlets. Local health authorities were the first to ban the sale of raw milk and to adopt bacterial standards frequently different from those of nearby communities. In a Minnesota decision, the court stated:

"Milk ordinance provisions placing 170,000 limit on bacterial count of raw milk and establishing license fees to cover expenses, which were made necessary because city authorities did not accept tests as administered elsewhere in the state were an unreasonable exercise of police power and violated due process, where the difference between 170,000 and 200,000 limit permitted elsewhere had no public health significance and the 170,000 limit would in effect curtail free flow of milk within a single state."67

In the case of the City of Port Arthur (Texas) Vs. Carnation, the court found that the state statute governing the grading and pasteurization of milk and grade specifications and requirements promulgated thereunder by the state health officer constitutes the general law of the state and no ordinance is in conflict or is inconsistent with such a statute, specifications and requirements can be legally enacted by the governing body of a city.68 A similar decision was reached in a more recent Texas case.69

More state regulations have recognized certified milk than have local regulations. Most regulations currently require certified milk to be pasteurized.

In a recent California case, the court ruled that the health officer can prohibit the sale of milk if he found it hazardous to public health, even if it had met bacterial standards. The court ruled:

"Provisions in Agricultural Code that raw milk shall not contain more than 15,000 bacteria per milliliter were not intended to preclude the health officer from taking appropriate steps to protect the public when the milk supply meets general overall standards yet contains sufficient quantity of pathogenic bacteria or organisms to constitute danger to public health."70

Milk Containers, Labelling and Dating

Legal disputes over milk containers started when health departments prohibited the sale of poured or dipped milk. The first court decision upholding an ordinance prohibiting the sale of such milk was in Ohio in 1896. Since then, most court decisions have sustained health regulations banning the sale of milk poured or dipped from the sellers' container. In 1928, a Wisconsin court sustained a city ordinance requiring restaurants to serve milk in the original containers, well-capped and sealed, containing only the quantity of milk intended for use of the person served and opened in the presence of the customer or served intact to him.

However, as late as 1911, a Massachusetts Court found that the City of Boston regulation, which required the sale of milk only in tightly closed or capped bottles or receptacles approved by the Board of Health, was invalid as beyond the scope of the statutory authority then conferred upon the Board of Health, was invalid as beyond the scope of the statutory authority then conferred upon the Board of Health.

Some health regulations have even specified the size of containers in which milk must be sold. A local milk ordinance prohibiting the sale of milk and cream when sold in bottles of any size except two-quart, quart, pint, half-pint, quarter-pint or 10-ounce, was upheld by a United States Court of Appeals. Likewise, the court sustained a Chicago ordinance requiring that milk sold in quantities of less than one gallon should be delivered in standard milk bottles. More recent decisions, however, tend to void such requirements. In 1966, a Michigan court ruled:

"Statutes prohibiting sale of milk in gallon containers violated constitutional right to do business secured under due process clauses of the Fourteenth Amendment of Federal Constitution and of State Constitution." 

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72 City of Milwaukee Vs. Childs (1928), 195 Wis. 148, 217 N.W. 703.
73 Comm. Vs. Drew (1911), 208 Mass. 493
74 Independent Diarymen's Assn. Vs. City and County of Denver (1944), Colo. 142 F. (2) 940.
75 Dean Milk Co. Vs. Chicago (1944), 385 Ill. 565, 53 N.E. (2d) 612.
Similarly, a New York court found that the portion of an Agriculture and Markets Law which prohibited the sale of evaporated skimmed milk in less the 10-pound containers was unconstitutional and void on the grounds that it was arbitrary and discriminatory and bore no reasonable relationship to the protection of the public either as a health measure or against fraud under police power of the state. When paper containers were introduced, some states prohibited their use, but from the beginning the courts have tended to invalidate such regulations.

Labelling and Dating

Public health authorities usually require adequate information on milk containers. The includes the name and address of the dealer, information about the product and its grade and in some instances a date indicating when the product was pasteurized or after which the product must not be sold.

The courts, on many occasions, have upheld the provisions of sanitary regulations requiring reasonable labelling of milk containers. In a New York case, the court ruled that the statute prohibiting the sale of misbranded food was within the scope of the police power of the state to safeguard the public against misrepresentation of deception sales. In 1968, a court in Georgia stated:

"Purpose of statute authorizing the commissioner of Agriculture to promulgate rules and regulations respecting production, distribution and marketing of milk and milk products is to fix standards of sanitations in production, handling, distribution and marketing of milk and milk products, to protect health of consumers of milk and milk products and to prevent fraud and deception in marketing of such products by assuring the labels affixed to or printed on containers truthfully reveal exact nature of product contained therein.

Few court cases were found concerning dating requirements. In 1952, a milk dealer organization in New York brought suit to block the enforcement of a new milk dating ordinance by a city in New York. Spokesmen for both the New York State Department of Health and the United States Public Health Service stated that their agencies no longer recommended the dating of milk and that any regulations requiring the dating of milk serves no useful purpose. The court found that the dating issue was almost wholly economic and political, bearing little or no relation to the protection of public health. Consequently, the court held invalid the ordinance requiring dating in that city. Significantly, the City of New York currently requires the dating of milk and the courts have sustained such regulations. In 1958, the court ruled:

17 Defiance Milk Products Vs. DuMond (1954), 133 NYS (2d), 205 Misc. 813.
78 Carey Vs. Standard Brands, Inc. (1959), N.Y. 189 NYS (2d) 1019.
79 Department of Agriculture Vs. Quality Food Products, Inc. (1968) Ga. 163 S.E.
"Where regulations promulgated by the Commissioners of Health of the City of New York required the dating of milk before being distributed and limited the time milk could be distributed to the public such regulations were a proper exercise of legislative function, the purpose being to protect the health of residents. 81

Conflicting court decisions over public health regulations are occasionally found. In addition, the courts have often reversed their previous stands on some issues as conditions within and outside the dairy industry have changed. In recent years, few court cases were found dealing with public health regulations of milk because of the widespread adoption of the Federal Code.

81 People on Complaint of Gayle vs. Samuel Alder, Inc. (1958), 177 N.Y.S. (2d) 361.
APPENDIX I
COURT CASES BY STATE¹,²

Alabama

Gilchrist Drug Co. v Birmingham (1937), 234 Ala. 204, 174 So. 609, 111 A.L.R. 103.
Ridgeway v. Bessemer (1914), 9 Ala. App. 470, 64 So. 189.
Alabama State Milk Control Board v. Graham (Ala. 1947), 33 So. 2d 11.
Alabama Jersey Cattle Club v. Alabama State Milk Central Board (1963), Ala., 150 So. (2d) 711.

Arizona

City of Phoenix v. Breuninger (1937), 50 Ariz. 373, 72 P. (2d) 580.
Loftus v. Russell (1949), 69 Ariz. 245, 212 P. (2d) 91.

Arkansas


² Source: Cases prior to 1948 from J. Tobey; Cases subsequent to 1948 from search of legal opinions by authors.
Arkansas

Carpenter v. Little Rock (1911), 101 Ark. 238 142 S.W. 162.
Terry Dairy Products Co. v Beard (1949) Ark. 230 S.W. (2d) 57.

California

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