DEMPESEY, Gilbert Pharee, 1933-
THE MOVEMENT OF EGGS THROUGH THE COLUMBUS
OHIO METROPOLITAN AREA, 1962-63.
The Ohio State University, Ph.D., 1970
Economics, agricultural

University Microfilms, A XEROX Company, Ann Arbor, Michigan

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED
This project was sponsored by the Department of Poultry Science, Ohio State University. I am indebted to the Department's members for their support and many individual contributions.

To Dr. Ralph L. Baker, my adviser, a special debt of gratitude is owed for his confidence, guidance, and counsel during not only this study but throughout my advanced graduate program as well. Appreciation is also extended to Professors R. George Jaap, Ralph W. Sherman, Theodore N. Beckman, and Clifford L. James for their professional assistance and encouragement.

I am especially grateful to my secretaries, Sandra L. Corner and Jean W. Nolley, for their expert and dedicated assistance during the development of this paper; and to others in the U.S. Forest Service who practiced their belief in education with positive action on my behalf.

To my wife, Bettie, who helped make my advanced education possible, and to my children who withstood the rigorism gracefully, I am forever grateful.

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Chapter I

INTRODUCTION

SCOPE OF THE PROBLEM

This is a study of the physical movement of eggs, and the motivations affecting this movement within a single, large marketplace--the Columbus Metropolitan Area. The distribution of the commodity is traced through the institutions comprising the physical structure of the market to either the business user or the retail outlet immediately preceding the ultimate consumer. The study outlines the overall structure of the market with special reference to the institutions involved in marketing eggs. Toward this end, it was necessary to: (1) determine and classify the organizational and business characteristics of these institutions; (2) determine the disposition of the product for each of the segments; (3) describe their operations from a functional aspect; (4) determine their relative importance within the channels of distribution; and (5) ascertain their operating procedures in the procurement and disposition of eggs and the reasons for using these practices.

These institutions are both private and public. The private sector includes commercial producers, processors, wholesalers,
retailers, and business users. The public segment of institutions is comprised primarily of publicly-owned schools, hospitals, and penal institutions. As a logistical technique, private schools, hospitals, and sanitariums are treated as public institutions.

The specific marketing functions of these institutions are studied in some detail. As a system, the economic activities performed by the marketing institutions include primarily buying and selling and secondary activities, such as transportation, storage, and product differentiation. Processing is also considered in this study as a activity of marketing. This function is added through necessity because the processes of washing, candling, sizing, cartoning, and casing of shell eggs are often performed by establishments whose primary business is marketing rather than producing the original product.

The disposition of the egg or egg product by the institutions, the services performed, and the activities of buying and selling receive most of the attention of this study. Disposition means the actual use or the reason for buying or producing the commodity in the first place. Different types of business operations have different uses for the product which, if varied enough, require eggs other than the natural or shell form. For example, wholesalers move eggs

1"Business users" are considered to be commercial enterprises engaged in retailing eggs in an edible form; or as an ingredient of another edible product; or, otherwise used in the manufacture of an inedible product such as bottle caps. For example, such businesses as bakeries, restaurants, confectioneries, and other similar users are considered business users.
into the retail outlets with the potential profits from the services performed as a primary motive. In turn, the retailer with a similar motive sells the commodity to consumers. However, the business users of eggs, such as bakeries, confectioneries, or noodle manufacturers, use the egg or egg product as an integral part of another product. Therefore, depending upon the use made of the commodity, their needs may vary considerably from the other outlets; and, even though the profit motive is present, it is no longer directly related to the sale of eggs per se.

The services performed by both the buyer and seller are given considerable attention. First, this is an effort to describe the services being offered by the sellers, their desirability by the buyers, and why they are either offered or desired. Second, it is an effort to detect any significant relationship between the services offered or desired and the choice of a source of supply by the buyer.

The most emphasis is placed on the buying and selling of eggs and egg products. The major questions are: (1) what products are handled; (2) how they are purchased and/or sold with respect to the practices used; (3) the volume of eggs handled; (4) where the products are obtained and sold; (5) why certain sources of supply are used in lieu of available alternative sources; and (6) the determination of prices with respect to the methods used by the institutions involved in establishing either the buying or selling price, or both.

No attempt will be made to ascertain "how well" the functions are performed or the efficiency of their performance. However, value
added by the activities is obtained for certain of the institutions within the market structure. These margins may indicate areas for additional research into the efficiency of the structure. A study of the efficiency of market performance requires greater depth than can be undertaken in a first study of the overall market.

Since this survey is a first-step study and primarily a descriptive study of the marketing system, it includes a large number of establishments and several complex segments of the food industry. This limits the amount of detail obtainable from each of the individual establishments of the wholesale, retail, and business-using segments.

From these data, the channels of distribution for eggs and egg products are determined and their relative importance within the structure estimated. The data also assist in outlining the complexity and the magnitude of the market task. The commodity moves through a variety of establishments and by a number of routes or channels in going from the first owner to the last owner—the ultimate consumer or business user. The movement of eggs from the producer through an assembler, processor, broker, wholesaler, a second broker, retailer or business user, and ultimately to the consumer would be an example. Eggs may also be transferred by the simplest channel—from the farm producer to the business user and consumer.

Egg distribution may also be complicated by horizontal movement or going from like to like businesses. An example of horizontal movement on the wholesale level involves the distribution of eggs from a
producer-distributor to an affiliated local egg wholesale establishment and from this establishment to other wholesalers, such as dairy companies, jobbers, chain store warehouses,\(^1\) wholesale meat, or grocery companies. By definition, these establishments would in turn transfer the commodity to retail or manufacturing outlets for further disposition. Or, on the retail and business user level, there could be a horizontal movement of eggs among such establishments as grocery stores, restaurants, bakeries, confectioneries, specialty stores, and retail routemen.

**PURPOSE OF STUDY**

The purposes of the study are to develop an understanding of the commercial movement of eggs and egg products within the Columbus Metropolitan Area and to provide a basis or benchmark for further research on the marketing system. Toward this end, it is necessary to determine and describe the actual channels of distribution utilized in the movement of eggs from the producer to the ultimate consumer or business user. Such a study provides the opportunity for a critical examination of currently held concepts concerning the distribution of eggs within this relatively large market area and for other comparable metropolitan areas. Such a study also provides the basic information necessary for the development of a projection

\(^{1}\)Chain store warehouses, even though they operate as wholesale concerns, are not listed as an entity separate from the retail organizations.
analysis of trends within the market. The projection analysis should assist in formulating guidelines for future changes within the marketing system and thus affect decisionmaking.

Current concepts of the distributive system for eggs and its performance within Columbus may or may not be correct. Since our empirical knowledge of the system is imperfect, these concepts are either speculative, founded upon obsolete empirical data, or based upon the marketing system for the same or similar product on which there is a degree of relevant data. In either case, enough is not known about the Columbus egg marketing system to determine the system's efficiency of resource use and its ability to maximize distributors' (and/or consumers') needs or satisfactions; to compare the pertinent economic and social factors between alternative channels of distribution; or to predict trends in the system.

The projection of trends is a basic need of the egg industry. The commercial egg industry is undergoing fundamental changes in the nature and extent of demand, and in the source and conditions of supply. Some of the dynamics within the egg industry include: an increasing number of large volume producers and a decreasing number of small flocks; improved quality control practices and purchasing specifications of large volume distributors such as the supermarkets and specialized wholesale distributors; the closer coordination of production and marketing segments within the egg industry; and recurring cycles of over-production, at least in the terms of prices received. The unknown factors of the interrelationship of these
changes suggest that more attention needs to be given to the nature of the marketing system in its entirety and the interdependence of segments to provide guidelines on the direction of future changes. Such guidelines could promote economic efficiency, curtail social misfortune resulting from economic misdirection, and prevent economic waste.

Under the condition of imperfect knowledge that now exists, the possibility of a reasonably accurate projection of trends is doubtful. In order to make such an analysis, it is necessary to know, as completely as possible, the past and present conditions of supply and the past and present conditions of demand. Since little information is available on the past structure of the marketing system, the present system must serve as a starting point. If information on a pertinent economic or social variable is seriously lacking, the results of the entire projection can be misleading. Thus, this study attempts a first-stage, descriptive study of the local metropolitan area's marketing system for eggs.

**Specific Objectives**

In a brief summary, the major objectives for this study are:

1. To determine the structure of the market with respect to the institutions involved in the performance of the exchange, physical supply, and certain facilitative functions.

2. To define the various channels used in the movement of eggs to the ultimate consumer and business user.
(3) To provide an estimate of the type, form, and volume of eggs moving through the respective channels of supply.

(4) To obtain pertinent economic and social characteristics concerning the segments of establishments operating in these channels.

(5) To determine the general area of supply for the market.

(6) To explore the reasons for the selection of present channels and suppliers.

(7) To determine what operational changes have taken place and the problems encountered within the system.

(8) To provide a background for more thorough study of supply problems and probable direction of changes in supply.
REVIEW OF RELATED STUDIES

Eggs and Their Use

The egg is used in large volumes and in a variety of ways by both the business user and ultimate consumer in the United States. Historically, eggs have satisfied human wants or needs through either their functional, esthetic, sentimental, or prestige values.

In past centuries eggs have been used as sacred symbols—as symbols of prestige and of festive occasions. We currently employ the custom of decorating and giving eggs as a symbol of the Resurrection of Christ. While the utility created by the subjective values attributed to eggs is important, this portion of the paper is primarily concerned with the more functional uses of the egg.

Eggs have inherent physical properties which perform a variety of functions both as an individual food and in conjunction with other foods. First, eggs are consumed as an entity for their nutritional and esthetic values. It is a product which: (1) has a high caloric content; (2) is a valuable source of quality and quantity of protein; (3) is a good source of vitamins A, B, and D; and (4) supplies many of the essential minerals needed for growth. The preparation of eggs as a dish may originate from one of these nine basic methods of cooking eggs: soft or hard cooked in the shell, fried, scrambled, poached, broiled, baked, and French or puffy omelets. Second, eggs are important ingredients of other food dishes. For example, eggs may be used as appetizers or in breads, soups, salads, dressings, entrees,
sandwiches, vegetables, desserts, and beverages. Third, eggs or parts of eggs serve important functions in cooking and as ingredients of other foods. They function as agents of leavening, thickening, emulsifying, coating, binding, clarifying, and retarding crystallization in candies and icings. Eggs also add color, flavor, and "richness" to prepared foods.\textsuperscript{1}

In addition to their value as a food, eggs are used for technical purposes. Technical albumen has, in the past, been used in the leather and fur trade, lithographing, textile printing, and other miscellaneous industries.

\textbf{Egg Products and Their Use}

The term "egg products" is an all-inclusive synonym for end products which are further processings of the natural shell egg. The derivations from the shell egg may take several physical forms, such as liquid, frozen, or dried; be comprised of varying proportions of the parts of the natural egg; and include organic or inorganic materials. However, so long as the end product is primarily egg, it is considered by the poultry industry as an "egg product."

In recent years, from 7 to 10 percent of egg consumption have been in the processed form of liquid, frozen, and dried eggs.\textsuperscript{2} Liquid eggs are available commercially in three basic forms--whole


\textsuperscript{2}Leonard Voss, \textit{Supply Problems of Egg Processing Plants} (Missouri Agricultural Experiment Station, North Central Region Report 148, August 1963), p. 4.
eggs, yolk, and albumen. Frozen and dried eggs (egg solids) are also available in the three basic forms, the only difference being that they have been frozen and dried, respectively. These products may be obtained in their basically processed state, in mixtures of varying amounts of yolk and albumen, or including additives such as salt, sugar, and syrup. They may also be obtained with a basic nutrient extracted, such as glucose-free egg solids.

Egg products have the same uses as shell eggs except they are more versatile and more efficient. Most functional properties of the egg are retained after freezing and drying. When purchased in a processed state, the entrepreneur can specify the type of product needed in accordance to its proposed use and eliminate the need for further processing within the plant. The uniformity and control of quality can be maintained on the end product by buying and using eggs according to specification.

Transportation, storage, and handling problems may also be reduced by using the processed product in the required amounts. In cases where a limited amount of only one part of the egg is needed for manufacturing, the purchase and use of this specific product in preference to shell eggs can eliminate the necessity to find remunerative outlets for the by-products. For some industries, such as the premix and other specialty industries, the only usable ingredient is the processed egg.

The main users of egg products are the manufacturers of consumer food products. The producers of bakery goods, candies, mayonnaise, salad dressing, noodles, macaroni, ice cream, premixes, baby foods, and other miscellaneous products use substantial amounts of liquid, frozen, or dried eggs. On the other hand, these producers use a relatively small amount of shell eggs.¹

The home and public eating places use mostly shell eggs. Their consumption or use of egg products in food preparation is relatively insignificant. To some extent animal food manufacturers use inedible eggs and dried eggs in their feeds. The technical users mainly limit their use of eggs to such products as albumen solids and yolk solids. The vaccine, shampoo, lithograph, and photo-engraving trades also use limited amounts of shell eggs.²,³

Shell Egg Disposition

In 1962, a total of 63,151 million eggs were produced in the United States. About 60,106 million were sold into the marketplace, and an additional 3,045 million eggs were consumed on the farms where they were produced.⁴

²Ibid.
Of the total eggs marketed, only 5,785.2 million eggs or 7.6 percent were processed into liquid, frozen, and dried eggs. The total liquid egg production of 634.8 million pounds was further processed and utilized as: (1) liquid egg for immediate consumption—55.5 million pounds, (2) frozen eggs—381.7 million pounds, and (3) dried eggs—197.6 million pounds. The frozen and dried eggs were processed into more specific forms, such as: whole, mixed emulsions, egg whites, plain yolk, sugared yolk, salted yolk, and yolk emulsions.

After deducting the net changes in storage, export, and amounts used in hatching and for military purposes, about 60 billion eggs were consumed by the civilian population. The total civilian per capita consumption amounted to 324 eggs, 90.7 percent of which were distributed as shell eggs and 9.3 percent moved as processed eggs. These percentages represented a consumption of 293 shell eggs and 31 processed eggs per capita.

Egg Consumption

An estimate of the Columbus Metropolitan Area's consumption of eggs must be based on the United States per capita figures for want of more relevant data. During 1962, the United States per capita consumption of eggs amounted to 324 eggs. Using the January 1, 1963,


population estimate of 737,062 inhabitants for the area, it is estimated that about 239 million eggs were consumed during 1962.\(^1\) Reduced to 30 dozen case lots, this figure represented 663,000 cases annually, or 12,715 cases of eggs used weekly in the area.

Jasper and Cray (1950) interviewed at random 300 families in Columbus and found their average per capita consumption of eggs to be 327 annually. This figure, however, did not include the eggs consumed in prepared mixes and table-ready food products. Also, the survey was made during a period of high egg prices, and one-quarter of the respondents reported using more eggs during seasons of lower prices.\(^2\) This suggests that the per capita consumption of shell eggs could have averaged slightly more than 327 shell eggs. The United States per capita consumption of shell eggs during this period was 364, and the per capita consumption of processed eggs was 25, totaling 389 eggs per person.\(^3\) Postulating from these data, an estimated 62 eggs per capita were consumed by the population of the local area in some form other than shell eggs.

**Consumers' Egg Sources**

The types of establishments from which consumers purchase their shell eggs probably vary with the sources available, and their

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comparative prices and quality. In the Columbus Metropolitan Area, there is a large variety of potential sources for consumer shell egg purchases. A brief observation of the Columbus area indicates such potential sources as: grocery stores, confectioneries, dairy routes, farmers' market, specialty stores, hucksters, producer-direct deliveries, and at-farm outlets.

The consumer's source of egg products is not so easily defined. Very little evidence has been found to indicate any movement of either frozen or dried eggs to the consumer through these outlets. Becker, in a 1949 Pennsylvania study of 835 stores, found only three carrying egg solids.¹ Neither is there any evidence of commercial egg product usage by the consumer except in premixes and prepared food products. In addition, the federal government distributes a limited amount of egg solids to those persons receiving "surplus commodities." Consumers could purchase egg products from wholesale distributors if there was a demand for them. However, these products are usually packed in 25 and 30 pound tins, depending upon whether they are dried or frozen. Consequently, storage and utilization of such large amounts would cause problems.

The shell egg sources used by the consumers seem to vary somewhat according to the geographic area and the size of the market. Jasper and Cray, in a 1950 study of 300 Columbus, Ohio, families, reported

their major sources used to be the grocery store, pick-ups at the farm, deliveries by farmers, and the poultry market, in that order. The retail grocer was the most frequent source used, supplying 36.7 percent of the families; pick-ups at the farm supplied 23.3 percent; and 18.4 percent of the families were serviced at their door by farmers. The poultry market was the fourth most important source, supplying 11.3 percent of the families with eggs. Other sources being used were hucksters, confectioneries, dairy stores, and miscellaneous retail outlets.

Grubb and Baker (1963), in a Williamsport-Johnstown, Pennsylvania study, found that of the total eggs handled: (1) in Williamsport, 31.6 percent were handled by retail grocery stores and 37.2 percent were moved directly from the producer to the consumer and (2) in Johnstown, 41.2 percent of the eggs were handled by the retail stores and 42.9 percent of the total movement was from the producer directly to the consumer. These figures are percentages of the total egg movement into the respective areas. It is assumed that the main outlets for eggs for the retail stores were the ultimate consumers, and that the basis of calculation does not significantly affect the comparison of the relative importance of the two outlets.

In New England, according to Manchester (1954), the sales to household consumers were as follows: independent retail stores—35

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1Jasper and Cray, op. cit., p. 15.

percent; chain stores--28 percent; producers--22 percent; dairy stores and routes--9 percent; hucksters--5 percent; and wholesale handlers--1 percent. In the rural areas, the independent stores accounted for a larger share of the consumer market. In the urban areas, the independent and chain retail stores shared equally in the market. Producer to consumer sales accounted for 33 percent of all eggs in the rural surplus areas, 25 percent in rural deficit areas, and about 20 percent in urban areas.1

The sale of shell eggs to the final consumer in New York, Philadelphia, Boston, Pittsburgh, and Baltimore was handled primarily by the retail food store chains; independent grocery stores; and wholesale distributors' own retail stores, stands, and house-to-house routes. The retail food store chains handled from 45.8 percent (Philadelphia) to 60.0 percent (Boston) of the net total retail sales by all types of retail establishments. Sales by independent stores ranged from 14.8 percent in Boston to 32.1 percent in Pittsburgh. The retail sale of eggs by wholesale distributors ranged from 1.8 percent in Boston to 7.9 percent in Philadelphia.2

As a further indication of sales to consumers by hucksters, dealers, and producers, the following data were obtained from a 1951 North Central Region study: In the Cincinnati market area, producers sold 16 percent of their eggs to hucksters and 29 percent directly to

1A. C. Manchester, Supply Areas and Marketing Channels for Eggs in New England (University of Massachusetts, Northeast Region Bulletin No. 18, August 1954), p. 61.

consumers. In the Columbus market area, producers sold 11 percent of their eggs to hucksters and 9 percent directly to consumers.¹

**Product Use and Source of Supply by Manufacturing Users**

Enochian and Saunders (1963), in a national survey of potential manufacturing users of eggs and egg products, studied 210 bakeries, 34 confectioneries, 28 premix manufacturers, and 61 other food manufacturers. Even though this survey was not considered representative of all egg product-using firms, it gives an indication of the manufacturing uses for eggs.²

From Enochian and Saunders' report, the following data were summarized:

1. The average purchased weights of eggs and egg substitutes used per firm during 1960 were: bakeries—521,300 pounds; confectioneries—176,400 pounds; premix manufacturers—282,400 pounds; and miscellaneous food product manufacturers—443,800 pounds.³

2. Frozen and dried eggs and egg substitutes were used by all of the major groups of firms. Shell eggs were used by the baking and

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³Miscellaneous food product manufacturers include firms making baby foods, meat and fish products, noodles, macaroni, ravioli, mayonnaise, salad dressing, and other specialty foods.
"other" industries. Liquid eggs were used to some extent by the baking, confectionery, and "other" industries.

(3) The bakeries purchased about 58 percent of their eggs in the frozen form and 35 percent in the dried form, based upon a liquid equivalent comparison. Except for one firm using liquid egg albumen, the confectioneries used mostly frozen and dried egg albumen and some substitutes. The premix manufacturers almost exclusively used egg solids. The miscellaneous food manufacturers used mostly frozen eggs but also relatively large quantities of shell eggs.

(4) Most of the manufacturers felt that egg products performed their functions more adequately than egg substitutes. The most frequent reasons for using egg products were the following: (a) a comparable end product could not be obtained with substitutes; (b) convenience in use; (c) ease of handling; and (d) uniformity in results, longer shelf life, and lower price.

(5) A number of firms had experimented with egg substitutes, but they had generally proven unsatisfactory. Few of the firms had made any changes in the use of eggs in the last five years. Of the changes made, the most frequent were changes from liquid or frozen eggs to egg solids in the manufacture of cakes and cookies. The changes to egg solids were most apparent among the largest firms in the baking industry.

(6) Changes in the formulations of products requiring eggs were made only after egg prices had made long-term permanent changes.
(7) National and local independent egg processors were the most important suppliers of egg products to the food manufacturers. Other suppliers included farmers, brokers, wholesalers, and jobbers. The firms were generally satisfied with the services offered, such as commodity and price information, price-supply protection, delivery, and handling. However, except for a few large suppliers, the manufacturers felt that their suppliers of eggs were not performing as well as other ingredient suppliers in the areas of product service, research and development, and institutional advertising.

(8) A variety of purchase arrangements was used by the firms, such as spot purchases, firm contracts, and buying ahead and storing. Contracting at a fixed price and hedging in the future's market were used to stabilize egg product cost. The purchase of egg products by specification was reported as growing in importance. General satisfaction with purchasing arrangements was reported.

From this study, Enochian and Saunders have predicted that the use of dried egg products and premixes containing eggs will increase substantially in the future at the expense of liquid and frozen eggs. The resistance to the use of egg solids and premixes is rapidly disappearing except in the small retail bakery area, and the convenience aspect of egg solids and premixes has a strong appeal to food manufacturers. There is an increasing demand for egg products with unique characteristics and properties. There may be a tendency toward establishing special arrangements to assure the users of an adequate supply of these products.
Enochian and Saunders also reported that users are reluctant to change formulations. Assuming this reluctance is prevalent in the industry, and the price and functional suitability of eggs remains highly competitive with egg substitutes, then probably no rapid changes will be made to the substitutes. However, once egg substitutes have replaced eggs in the food manufacturing industry and are found to be adequate from the standpoint of price, quality, and functional aspects, then it would be difficult for egg products to regain their former market.

Grubb and Baker reported in their Williamsport-Johnstown, Pennsylvania, study\(^1\) that 20.1 percent of the total volume used in Williamsport and 5.1 percent of the Johnstown movement were utilized by the area's bakeries. (A regional bakery was located in Williamsport which partially explains the high percentage of the movement being utilized by the bakeries.) Sixty-two percent of the Williamsport and 89 percent of the Johnstown bakeries used frozen eggs in preference to other forms. Egg solids were utilized by 37 percent and 11 percent of the bakeries in the respective cities.

A majority of all the bakeries studied did not consider egg solids a good substitute for shell eggs because of an end product of inferior quality. Convenience and satisfaction with the end product were the two main reasons for preferring frozen eggs.

The main sources of shell eggs used by the Williamsport bakeries were the wholesaler, producer, huckster, and dairy in the order of

\(^1\)Grubb and Baker, \textit{loc. cit.}
their use. The volume of eggs purchased was about evenly distributed among those sources. In Johnstown, the main sources of shell eggs were the producers and city wholesalers, each supplying 50 percent of the outlets and handling about 50 percent of the volume.\(^1\)

**Movement of Eggs Into Primary and Secondary Retail Outlets**

The primary and secondary retail outlets for eggs are defined as those commercial firms which retail eggs to the consumer in both the shell and prepared or cooked form. The types of outlets usually operating in the primary sector are grocery stores, specialty stores, egg and dairy products routemen, and producer-direct sales. In the area of secondary outlets, there are the governmental institutions which have food service operations, and the privately-owned food service operations which service the public, such as restaurants and other eating places. Sales to retail outlets must, by definition, be wholesale sales, thus leading into another area of the market structure—the wholesale distributors of eggs and egg products.

Wholesale egg firms can generally be classified into three groups: independent, national egg processors and distributors, or chain retail food store firms. Most of the operations are independent and include wholesalers, brokers, food service operation supply houses, dairies, truckers, hucksters, and producers selling at wholesale.\(^2\)

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\(^1\) Grubb and Baker, *loc. cit.*

The selling activities of all three groups are similar, but they may vary in their methods of procurement and distribution.

The national processor-distributors have generally located their assembly and processing plants at or near major points of production on a nationwide basis and maintain refrigerated warehouses for the storage of seasonal surpluses. Also, these concerns have established branch outlets in areas where there is a substantial outlet for their products. The branch houses may use several methods of distribution, depending mainly upon their volume of trade within an area. Some operate their own fleet of trucks and maintain storage facilities. Others only act as brokers for a distant branch house or processing plant and effect either a direct to buyer delivery of products, or they utilize an independent cold storage area and sell only from the storage area.

The food chains generally have product warehouses located in or near cities which are centers of sizeable market areas. In the past, some chain store warehouses have operated their own shell egg processing facilities. Others purchased their supplies from local wholesalers of eggs or from the parent organization's own processing plant. The size of the chain store system and the market area in which the warehouses are located substantially affect the operations of chain store warehouses in their purchase and distribution of eggs.¹

¹Ibid.
These functions may also be affected by the organization's need for programs to help solve quality, supply, and cost problems.¹

There is some type of independent egg wholesaling firm located in or near every market area. These firms may be classified into several general types: egg wholesalers, poultry and egg wholesalers, brokers, dairies, cooperatives, truckers, hucksters, or producers. These firms may be either highly diversified—buy and sell a variety of products and commodities—or they may be highly specialized and buy and sell only eggs and egg products.

Egg wholesalers handle primarily eggs and egg products. Their eggs may be procured from other wholesalers, producers, or assembler-distributors and distribute to various retail outlets, depending upon the type of trade to which they cater. The hotel and restaurant supply houses are specialized commodity wholesale concerns which cater mainly to the food service operations. Dairies often distribute eggs on their regular milk routes—both the wholesale-retail outlet routes and the consumer milk routes.

Cooperatives have been developed by producers to assemble, process, and market their members' eggs. Some cooperatives maintain their own branch sales outlets within large cities, ship directly to retail outlets, or sell through other wholesale establishments within large market areas.

The producers quite often perform all of the production-marketing functions. Many producers process, pack, and deliver their own eggs to either the wholesale distributor, retailer, or retail user, and on routes to consumers.

As an indication of the movement of eggs to the retail establishments in Columbus, several papers have been reviewed with regard to the sources of supply and methods of distribution found elsewhere. Several of the later studies have been summarized.

From a 1950 study, Jasper and Cray (1953) estimated that 41.7 percent of the consumer sample purchased eggs from the producer, either at the farm or on egg routes from people whom they thought were farmers. Most of these consumers purchased from producers with the expectation of receiving fresher, higher quality eggs and possibly lower prices than were obtainable elsewhere. About 2.7 percent of the consumers purchased from hucksters.1

In 1959, Smith and Cravens (1962) made a comprehensive survey of the East Cleveland Farmers' Market in Cleveland, Ohio. The membership in this market was limited to growers. Eggs were only one of the many items sold. In 1959, about 188,570 dozens or 6,286 30-dozen cases of eggs were sold through the market, representing a weekly movement of about 121 cases.2

1Jasper and Cray, loc. cit.

2M. G. Smith and M. E. Cravens, Retail Farmers Market as a Means of Direct Sales to Consumers (Ohio Agricultural Experiment Station, Unnumbered Publication, June 1962).
In New England, according to Manchester (1954), 58 percent of the egg supply passed through wholesale channels. Producers sold 20 percent of the eggs directly to households, 3 percent to institutional users, and 17 percent to retail handlers. The chain store and dairy warehouses handled 26 percent of all eggs; cooperatives and wholesalers, 13 percent each; collectors, 12 percent; and meat packers and jobbers, 7 percent each. The collectors and cooperatives bought almost all of their eggs from producers and sold the largest amounts to retailer warehouses and chain and independent retail stores, with smaller amounts to other types of handlers.¹

The meat packers and wholesalers purchased mainly from outside the New England area and from cold storage suppliers and sold mostly to the independent retail stores. Jobbers purchased their supplies mostly from other wholesale handlers and sold almost all of them to independent retail stores and institutional users.²

The chain stores obtained most of their eggs from their own warehouses, but some were obtained from cooperatives, directly from producers, and from other wholesale handlers. The independent stores obtained most of their egg supply from producers. The dairy routes and stores received most of their eggs from their own warehouses, and hucksters bought most of their supplies from producers. Institutional

¹Manchester, op. cit., p. 76.
²Ibid.
users purchased one-third of their eggs from producers and the remainder from all types of wholesale handlers.¹

In the North Central Region during the spring of 1951, the sales from producers to the retail stores amounted to 16.5 percent of their production; to hatcheries, 11.4 percent; to institutions, 1.0 percent; directly to consumers, 5.1 percent; and the remaining 66.0 percent to local produce stations, truck routes from assembly plants, hucksters, and other outlets.²

Pedersen (1963) reported that in five eastern markets—New York, Philadelphia, Boston, Pittsburgh, and Baltimore—the wholesale distributors supplied the majority of the eggs used by the retail outlets. The percentages of one month's total egg movement to retail outlets handled by the wholesale distributors were: New York, 61.5; Pittsburgh, 63.3; Philadelphia, 66.5; Boston, 44.7; and Baltimore, 67.4. The remaining net sales into retail outlets were primarily direct purchases by corporate food store chains from country assemblers and shippers. A minor portion of the total movement was direct purchases by milk distribution companies, voluntary and cooperative food store chains, and small retail outlets from country producers, assemblers, and shippers.³

In New York, over 79 percent of the total eggs handled (1,404,009 cases) by the surveyed firms were purchased from country shippers.

¹Ibid., p. 77.
²Broadbent and Zawadzki, op. cit., p. 38.
³Pedersen, op. cit., p. 2.
(908,739 cases) and producers (212,291 cases). The remainder of their total volume (18,718 cases) was from either their own production units or purchased from other local metropolitan area firms. In Philadelphia, over 76 percent of the total eggs handled by the firms surveyed were from country shippers and producers. The percentage of horizontal egg movement between wholesalers was greater in Philadelphia than in New York. The major egg marketing channels for Boston, Pittsburgh, and Baltimore were similar to those of New York and Philadelphia, except the wholesale distributors in Baltimore handled a greater percentage of the total egg movement.  

More than 70 percent of the total net sales through retail outlets in the five market areas were shell eggs in cartons. In New York, 72.8 percent of the eggs sold to retail outlets were in cartons, compared with 70.8 percent in Philadelphia, 73.4 percent in Boston, 80.3 percent in Pittsburgh, and 72.9 percent in Baltimore. 

The percentages of the net movement of shell eggs into retail channels for New York, Philadelphia, Boston, Pittsburgh, and Baltimore are given in Table 1.

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1Ibid., p. 4.
2Ibid., p. vi.
Table 1.—Percent of net movement of shell eggs into retail channels, five metropolitan areas, 1960

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Movement Into Retail Channels</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food store chains %</td>
<td>Independent retail stores %</td>
</tr>
<tr>
<td>New York (1959)</td>
<td>56.9</td>
<td>20.7</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>45.8</td>
<td>18.5</td>
</tr>
<tr>
<td>Boston</td>
<td>60.0</td>
<td>14.8</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>51.2</td>
<td>32.1</td>
</tr>
<tr>
<td>Baltimore</td>
<td>46.3</td>
<td>29.3</td>
</tr>
</tbody>
</table>

aPublic association, such as a hospital, school, or home for the aged.

bIndividually owned eating establishment, such as a hotel, restaurant, or cafeteria.

cDistributors own retail outlets, such as retail stores, stands, egg routes, etc.

Source: Pedersen, op. cit., pp. 3, 12, 19, 26, 33.

In Williamsport, Pennsylvania, Grubb and Baker (1963) found of the total volume distributed by the market outlets, about 32 percent were handled by the chain and independent retail stores, 7 percent by the commercial food service operations, 2 percent by the schools and hospitals, and 20 percent by the bakeries for business purposes. The remainder of the movement was from producer to consumer—37 percent—and about 1 percent through friends, neighbors, and relatives. A similar movement was reported in the Johnstown, Pennsylvania, area.

Of the total movement, 41 percent were handled by the independent and chain retail stores, 8 percent by the eating places, 3 percent by the
hospitals and schools, and about 5 percent by the bakeries. About 43 percent of the movement were directly from the producer to the consumer.¹

The sources of supply for these outlets were: (1) in Williamsport, 24 percent from assembler-distributor, 23 percent from hucksters, 4 percent from city wholesalers, 2 percent from dairies, and 1 percent from retailers; and (2) in Johnstown, 65 percent from producers, 24 percent from city wholesalers, 7 percent from assembler-distributors, 3 percent from retailers, and 1 percent from hucksters.² In both Williamsport and Johnstown, the retail grocery stores obtained most of their eggs directly from the producers. Hucksters were the primary sources of eggs for restaurants in Williamsport; whereas producers supplied a majority of the Johnstown restaurants. The bakeries in Williamsport obtained most of their eggs from hucksters and city wholesalers, in equal amounts. In Johnstown, the producers and city wholesalers supplied all of the eggs used by the bakeries and in about equal amounts.³

Grubb and Baker (1963) also found little importance being placed upon the extra services offered by the suppliers, such as cartoning, replacing old eggs, and advertising at the supplier's expense. They also found evidence that quality was the major factor determining the buyer's satisfaction. Procurement policies of the independent retail

¹Grubb and Baker, op. cit., p. 6.
²Ibid.
³Ibid., p. 8.
grocery stores, restaurants, and institutions were predicted to change very little during the next 10 years.1

Pedersen and Mitchell (1961) surveyed the movement of shell eggs into four west coast cities during 1959. They concluded that about 80 percent of the total consumption of eggs were handled by 159 firms in Los Angeles, 83 in San Francisco, 36 in Seattle, and 69 in Portland-Vancouver. The markets were dominated by three distinct types of firms: ranchers (producers), assembler-processor-distributors, and corporate food chains. Over 1,000 cases of eggs per week were moved into retail outlets by 14 firms in Los Angeles, 9 in San Francisco, 4 in Seattle, and 3 in Portland-Vancouver. Direct deliveries from the farm to retail stores were rapidly increasing in all four cities.2

The percentage of net movement of eggs into specified retail channels in the four west coast cities is reported in Table 2.

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1 Ibid., p. 16.

Table 2.--Net movement of eggs into 5 retail channels, 4 west coast metropolitan areas for one month, 1959

<table>
<thead>
<tr>
<th>Retail Channel</th>
<th>Metropolitan Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Los Angeles</td>
</tr>
<tr>
<td>Food store chains</td>
<td>41.0</td>
</tr>
<tr>
<td>Independent food stores</td>
<td>33.4</td>
</tr>
<tr>
<td>Milk distribution companies</td>
<td>11.0</td>
</tr>
<tr>
<td>Institutions</td>
<td>4.1</td>
</tr>
<tr>
<td>Non-institutional eating places</td>
<td>10.5</td>
</tr>
</tbody>
</table>


In Chicago, as reported by Pritchard and Hester (1957), the wholesale market consisted of more than 200 dealers, excluding a large, but unknown number, of hucksters and similar distributors. However, the 19 corporate food chains were retailing from 35 to 40 percent of the area's egg requirements in 1955. The second most important group of distributors was the large dairy companies, general food distributors, and meat packers. The third largest distributors were the independent receiver-distributors.¹

Since retail grocery stores probably represent the major retail outlet for shell eggs, three studies on nearby localities have been summarized to develop an indication of the local stores' activities.

Cray studied the retail distribution of eggs through grocery stores, confectioneries, dairy stores, and other retail establishments in Cleveland, Ohio, during 1950. The sale of eggs through 57.2 percent of the chain food stores averaged from 2.0 to 2.9 percent of the total sales. In the other 42.8 percent of the chain stores, egg sales averaged from 3.0 to 3.9 percent of the total sales. In the group of independent stores, the egg and poultry markets, dairy stores, and complete food stores, in the order named, had the highest percent of stores in which egg sales amounted to over 4.0 percent of total sales.\(^1\)

The food chains which operated 75 percent of the chain stores purchased eggs from a single source. The other 24.8 percent of the chain stores used more than four sources. Of the independent stores, 87.6 percent purchased eggs from only one source, 10.2 percent from two sources, and 2.0 percent from three or four sources. A majority (87.6 percent) of the independent stores had only one supplier. All of the chain stores purchased eggs from assembler-distributors, and the same type of dealers supplier 69.6 percent of the independent retailers. Truckers and farmers were the source of supply for 13.2 percent and 9.6 percent, respectively, for the independent stores. Most of the culling, sizing, and packaging was performed by the suppliers. Only

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25.8 percent of the independent stores purchased bulk eggs and cartoned them at the store.¹

The average weekly sales of eggs by the stores in the chain organizations were estimated by Cray to be over 240 dozen. Of the independent stores, less than 4.0 percent sold more than 240 dozen per week; 13.5 percent sold an average of from 91 to 240 dozen; 40.0 percent sold from 31 to 90 dozen; and 43.0 percent of the stores sold less than 30 dozen per week. Cray found little apparent relationship between the average weekly volume of eggs sold and whether or not the store operated on a cash or credit basis among the independent stores.²

One hundred percent of the chain stores sold grade A large white and brown eggs, 58 percent sold grade A medium white, 55 percent sold grade B large, and none of the chain stores sold grade A extra large, grade A small, or assorted grades of eggs of either color. Of the independent stores, 78 percent sold grade A large white eggs; 28.5 percent, grade A medium white; and 15 percent sold grade A large brown eggs. White eggs of at least one of four different grades were sold by 1,382 independent stores, while brown eggs of one of two grades were sold by only 258 different independent stores.³

The ranges of mark-up on price by the independent stores ranged from less than seven cents to more than nine cents. About 21.3 percent of the independent stores had a mark-up in price from wholesale

¹Ibid., p. 14-16.
²Ibid., p. 26
³Ibid., p. 20
cost of less than seven cents per dozen; 34.8 percent from seven cents to nine cents; and 43.9 percent had a mark-up of over nine cents per dozen.  

Becker (1953) found that Pennsylvania independent stores, in most instances, purchased eggs at prices set by the supplier, and that use of a flat cents per dozen was the most common method of mark-up used. The average margin was 9.1 cents per dozen but was higher in larger cities. Chain store egg prices more closely followed the trend of wholesale market price than did those of independent stores.  

An approximation of the percentage of total retail store sales from various sources of supply in Pennsylvania was: farmer, 36; country dealer, 12; city wholesaler, 21; chain warehouse, 29; and other sources, 2 percent.  

EXPECTED FINDINGS  

Because of the Columbus Metropolitan Area's importance as the major central Ohio marketplace, a major Ohio industrial and service center, and an area of deficit egg production-consumption balance, the following findings (drawn from patterns of structure existing in other urban areas) are expected:

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1Ibid., p. 41.  
2C. A. Becker, Egg Marketing by Retail Stores in Pennsylvania (Pennsylvania Agricultural Experiment Station Bulletin 561, January 1953), p. 49.  
3Ibid.
(1) The major sources of shell eggs supply for the primary and secondary retail outlets are expected to be either functional or agent middlemen, such as wholesalers, brokers, assembler-distributors, or producer-distributors.

(a) There are a relatively large number of small production units located distant to the local market, and the local and contiguous areas are deficit areas of production, thus extending the line of supply.

(b) Because of economies of size and location, it should be more efficient to concentrate supplies and distribute to the market rather than for each small production unit to distribute his own supplies to the retail or consumer market.

(2) Because of the potential economies of size and specialization in combination with locational advantages, such as a more perfect knowledge of the market and shorter delivery routes, coupled with a desire by retail outlets for a uniform, high-quality product, there may tend to be large vertically integrated production units located in or near the market. It is presumed that such units could produce and market eggs at a lower total cost and exercise greater product control than widely scattered, small production units.

(3) Since there are no terminal or auction markets in the local market area where buyers and sellers can meet and determine the price of eggs, it is expected that some form of market news report either directly sets or is used as a basis for setting the sale price of eggs.
(4) Whether or not egg purchases are made under contract is expected to depend upon the volume required and the stability of the conditions of availability of supply. The desire of the buyer to stabilize product price may also be a factor affecting the decision to contract.

(5) Based upon previous studies, the retail outlets handling the largest volume of eggs are expected to be the food store chains, independent grocery stores, and food service operations, in that order. The major suppliers of the large volume users are expected to be large volume wholesale distributors that can assure the retailers of a dependable, uniform, and high-quality supply of eggs. In turn, these sources of supply are expected to purchase mostly from large producers who can offer the same conditions of supply. In contrast, the small volume retailers are expected to purchase eggs from small volume wholesale distributors where dependability of a large volume of supply is less important to the retailer. In turn, the small wholesale distributors are expected to purchase mainly from small volume producers, because of the inability of the respective concerns to purchase all or a large majority of a large producer's supply, or of the producer to sell in small amounts to large volume wholesale handlers.\footnote{This, of course, does not apply to a farmers' egg marketing cooperative which acts as an assembler-processor-distributor.}

(6) Food product manufacturers are expected to constitute a major outlet for eggs and egg products. Since on a national scale
food manufacturers primarily use egg products for convenience, ease of handling, and ease of storage, the local firms are also assumed to be utilizing primarily egg products. Because the area is one of deficit egg production, and there are no known processors of egg products in the immediate area, these users are expected to receive their egg supplies from processors located outside the area. These supplies may be transferred through either local wholesalers or brokers, or by direct delivery from brokers, wholesalers, or processors located outside the area.

(7) When determining a source of supply, it is expected that the quality of product and the dependability of supply will be of greater importance to the manufacturing users than either the short-run price or additional services offered by the supplier.
CHARACTERISTICS OF THE AREA STUDIED

Area Selected

The area selected for study was the Standard Metropolitan Statistical Area of Columbus, Ohio, as determined by the United States Bureau of the Census.¹ Such a metropolitan area is defined on the basis of its density of population and social-economic integration. It must be a county or a group of contiguous counties which contain at least one city of 50,000 inhabitants or more or "twin cities" with a combined population of at least 50,000. Contiguous counties are only in a metropolitan area if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city.

Columbus and other metropolitan areas are market places in the sense that they are spheres within which price-making forces operate and in which exchanges of title tend to be accompanied by the actual movement of the goods affected. These areas form and represent the largest concentrations of effective demand for all consumer products, except possibly for a strictly "localized" demand for some unusual product.

In our Nation's metropolitan areas, the majority of the population lives within the urbanized area, which includes both the city proper and its suburbs. Most large urbanized areas are primarily

engaged in secondary and tertiary production or employed in the physical manufacturing of goods and providing services. Most of the metropolitan area's population is wholly dependent upon the market system for consumer goods. Based upon the assumption that the metropolitan area is a major source of consumer demand, and that it is unrealistic to expect most consumers to obtain their product directly from the producer, the goods to satisfy these wants will be supplied from an outside area by means of complex market mechanisms combined into a marketing system.

The movement of these goods from the production units to consumers may take more channels and involve a greater number of marketing institutions than in smaller consumption areas, or perhaps less than in larger areas. However, as long as the freedom of movement and competition, and similar supply conditions exist, the most used channels of distribution within market entities should not differ greatly.

Use of Data

It is not the purpose of this paper to measure and analyze the economic growth or development of the metropolitan area. However, to more accurately analyze the marketing system, it is necessary to view some of the recent changes in the economy of the area. In addition, locational characteristics and certain sociological characteristics of the population are necessary as background material. For more intense studies, these characteristics will become an absolute necessity, especially for consumer studies.
The economic growth of an area can be roughly measured through such variables as population, income or output per capita, income, employment and unemployment, changes in total output and in the composition of output, and the development of new industries. Total population and changes in population are significant for estimating both consumption and production. As the population of an area increases, along with income and the proportion of income spent upon consumption, the quantity of production in the area-serving activities\(^1\) should increase. Consequently, more resources will be devoted to these activities. A change in population may also be translated into a corresponding change in the available labor supply, assuming no change in the participation of the labor force. At best, it serves as a rough measure of total consumption in the absence of absolute information and as an indirect measure of production.

In addition to change in population, the income or output per capita, for all of its limitations, is probably the most used and all-inclusive measure of growth. Briefly, the limitations of this measure concern: (1) It does not indicate the cause or causes of the increased incomes and their value toward reaching the desired goals; (2) It fails to show changes in the distribution and composition of income and output. For example, income per capita may rise but be distributed either to one or a few people. From a welfare viewpoint, this may not constitute economic growth; and (3) It does not measure

\(^1\)Light industry such as bakeries, restaurants, retailing, and skilled or professional services.
any of the qualitative aspects of economic growth, such as improved health, increased recreation, and less servile working conditions.

Location

The Columbus Metropolitan Area's boundary is identical to that for Franklin County, Ohio. Within Franklin County is located the city of Columbus and the contiguous or nearby municipalities of Bexley, Grandview Heights, Grove City, Hilliard, Reynoldsburg, Upper Arlington, Westerville, Whitehall, Worthington, and 14 smaller village areas. Four of these incorporated areas are, for most practical purposes, located within the city of Columbus.

Franklin County, hereafter termed either Columbus or the metropolitan area, has a land area of 537 square miles, 92.7 square miles of which comprises the city of Columbus. An estimated additional 45 square miles are taken up by the remaining 23 urbanized areas. The density of population in January 1963 was 1,372 persons per square mile—ranking fourth in density for Ohio counties.¹

Population

The Columbus Metropolitan Area's population has been growing at a rapid rate, increasing by approximately 11,138 people each year by virtue of net migration and natural increases of births over deaths. The estimated population for January 1, 1963, was 737,062 people, a 233,652 increase over the 1950 population.

¹Ohio, Data Series, EDS P-4.1, April 1960, p. 1.
Table 3.—Estimated population by municipalities, January 1, 1963

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Franklin County</td>
<td>737,062</td>
</tr>
<tr>
<td>Bexley</td>
<td>14,726</td>
</tr>
<tr>
<td>Columbus</td>
<td>501,432</td>
</tr>
<tr>
<td>Grandview Heights</td>
<td>8,463</td>
</tr>
<tr>
<td>Grove City</td>
<td>9,935</td>
</tr>
<tr>
<td>Hilliard</td>
<td>7,313</td>
</tr>
<tr>
<td>Reynoldsburg</td>
<td>10,268</td>
</tr>
<tr>
<td>Upper Arlington</td>
<td>33,981</td>
</tr>
<tr>
<td>Westerville</td>
<td>7,810</td>
</tr>
<tr>
<td>Whitehall</td>
<td>24,653</td>
</tr>
<tr>
<td>Worthington</td>
<td>11,310</td>
</tr>
<tr>
<td>Balance of County</td>
<td>107,171</td>
</tr>
</tbody>
</table>

Source: Ohio, Data Series, P-63.1, July 1963, pp. 1, 2.

For the decade 1950 to 1960, the area's population increased 179,552 or 35.7 percent, from 503,410 to 682,962. Of the 179,552 population increase, 75,573 or 42.1 percent were the result of net migration, and the remaining 57.9 percent were a natural increase. This growth rate for the decade has been greater than that for any

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1 Ohio, Data Series, P-63.1, July 1963, pp. 1, 2.

Ohio metropolitan area. It also represents one of the highest growth rates in the United States for similar areas. Columbus maintained its position as the third largest metropolitan area in Ohio with a 1963 population of about 737,062. According to the latest projections, the area's population will continue to grow at a rapid rate and reach the 1,000,000 mark by 1980.¹

The 35.7 percent growth rate for the Columbus area was unevenly distributed. Ninety-two percent of the population resided in the technically urban area of the county and 8 percent lived in the rural area, ranking the area 85th of 88 counties in the percentage of rural population. The urban area experienced a 42.5 percent increase in inhabitants between 1950 and 1960, and the rural population decreased by 13.0 percent.² The population of the central city increased, however, the fringe area around the central city was the main area of growth (66.0 percent).³

The Columbus Metropolitan Area's growth pattern seems fairly typical of other urbanized areas in Ohio. "In 1960, the 19 Ohio counties in 15 Standard Metropolitan Statistical Areas contained 6,748,362 people or 69.5 percent of the State's population."⁴ For the

⁴Ibid., p. 1.
decade 1950 to 1960, there was a 12.3 percent growth in the central cities of the metropolitan areas and a corresponding growth of 89.4 percent for the urban fringes.\(^1\) A similar pattern was reported for the remaining urban areas with smaller populations. According to Mitchell, the present trends indicate continued growth in the metropolitan areas, an increase in the percent of the State's total population in these counties, and continued growth and movement toward the urban fringe areas.

**Social Characteristics**

In 1960, Columbus had the youngest population, the greatest percentage of people within the "productive" age group, and the lowest percentage of persons within the "dependent" age group of the eight Ohio major metropolitan area counties.\(^2\) Columbus' population's median age of 27.8 years was 1.7 years less than the Ohio median and 2.7 years less than the eight county median. Of Columbus' total population, 57.1 percent were 18 to 64 years, representing the greatest percentage within the "productive" age of all eight Ohio metropolitan counties. As might be expected, Columbus had a higher percentage of population under 18 years of age and a lower percentage 65 years old and over than most of the eight counties. The number of persons 65

\(^1\)Ibid., p. 1.

\(^2\)Eight counties in which the central cities of the major metropolitan areas are located. (i.e., Cuyahoga, Franklin, Hamilton, Lucas, Mahoning, Montgomery, Stark, Summit)
and over increased about 25.3 percent between 1950 and 1960, but this increase was less than the average for the eight major counties.¹

Columbus' unusually large percentage of population within the productive age group can be partially explained by the presence of more than 28,000 students enrolled in the colleges and universities.

Even though the mention of racial differences is often considered ill-mannered, as long as there are wide income and educational differences between the white and non-white races, there will be differences in consumption patterns.

In 1960, Columbus had a slightly larger non-white population than the average for the eight county area and a much greater proportion than that for Ohio. The Columbus non-white population in 1960 represented 11.9 percent of the total inhabitants.² Two and two-tenths percent of the population were foreign born.³

For the school year 1958-1959, there were 120,930 children enrolled in the area's elementary and secondary schools, 62,158 of whom were boys and 58,772 girls. Four thousand and eighty-three teachers participated in this program.⁴

In April 1962, the Columbus Chamber of Commerce reported for the area: (1) 228 public elementary and secondary schools with an enrollment of 140,176; (2) 60 parochial and independent elementary and secondary schools with a combined enrollment of 22,418 students; and (3) 7 colleges and universities with a total enrollment of 28,518.¹

Columbus had the greatest number and highest percentage of people living in group quarters among the eight metropolitan counties. In 1960, 29,331 people or 4.3 percent of the total population resided in either lodging houses, military barracks, institutions, college dormitories, or in other quarters which were not divided into household units.²

On the other hand, the number of household units occupied has increased at a rate second to none in Ohio. Between 1950 and 1960, the number of households increased 38.1 percent, from 145,381 to 200,763, averaging 3.25 persons per household.³

Much of the population living in group quarters can be attributed to the State institutions located in Columbus, such as the penitentiary, hospitals, and state schools. Cuyahoga, Hamilton, and Montgomery counties are the only other areas which contain large state institutions. The surge in number of households is explained mainly by the


³Ibid.
increase in non-institutional population and the corresponding rapid
development of apartments and houses in the area.

Economic Characteristics

As previously mentioned, income per capita is a reasonably valid
indicator of growth in an area, at least for the past. Predicting
future growth is much more complex.

In 1959, the average weekly earnings by employees was the lowest
among the eight major metropolitan counties. For this period the
average weekly earning was $95.08 as compared with a State average of
$99.81 and the eight county average of $102.12. Cuyahoga County had
the highest wage rate with weekly earnings of $107.75.¹

Columbus' weekly wage increased, however, by 61.3 percent for the
period 1950 to 1959. This increase ranked third among the percentage
increase for the eight major counties but increased at a rate of about
7.5 percent greater than the State average.

Total estimated personal income for Columbus was approximately
1.8 billion dollars in 1960, representing an increase of 97.6 percent
over 1950.² The personal income per capita increased 46.1 percent from
its 1950 base of 1,789 dollars to 2,613 dollars per person in 1960.³
The 1960 average of 2,613 dollars per capita was about 37 dollars
above the eight county average of 2,576 dollars and 215 dollars greater

¹Ohio, Data Series, E-3.1, February 1961, p. 1
²Ohio, Data Series, I-1.1, March 1961, pp. 1, 2.
³Ohio, Data Series, I-2.1, March 1961, pp. 1, 2.
than the State average. The growth rate of 46.1 percent ranked third among the eight county area but increased at a slower rate than the average State increase of 48.3 percent. However, most of the major metropolitan counties whose growth rate was less than Columbus' also had a larger base period of income per capita during 1950 which tends to distort the relative rates. In contrast, the State had a lower per capita income than Columbus during 1950, and even though the rate of growth was higher, the actual dollar volume of income growth was less than for Columbus.

Approximately 37.8 percent of the total population were employed during 1960. This figure (256,684) represents 95.6 percent of the total labor force but still leaves 4.6 percent or 12,325 people unemployed within the area. Of the total labor force, 64.7 percent were males and 35.3 percent females.¹ A general distribution of employment and the changes from 1950 to 1961 are given in Table 4.

Between 1950 and 1961, the number employed increased about 64,915, an increase of 32.03 percent. This percentage was less than the increase in population during this period.

During 1961, manufacturing represented the most important source of employment in terms of numbers employed, wholesale and retail trade second, service third, and government fourth. The greatest percentage increases for the 11 years were recorded for government, service, construction, and manufacturing, respectively.

Table 4.--Distribution of employment and percentage changes, 1950-61

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Government (all)</td>
<td>22,266</td>
<td>33,852</td>
<td>12.7</td>
<td>52.03</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>52,743</td>
<td>69,401</td>
<td>25.9</td>
<td>31.40</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>43,373</td>
<td>50,338</td>
<td>18.8</td>
<td>16.06</td>
</tr>
<tr>
<td>Public utilities&lt;sup&gt;a&lt;/sup&gt;</td>
<td>19,428</td>
<td>24,222</td>
<td>9.1</td>
<td>24.68</td>
</tr>
<tr>
<td>Construction</td>
<td>11,687</td>
<td>15,716</td>
<td>5.9</td>
<td>34.47</td>
</tr>
<tr>
<td>Finance, insurance, real estate</td>
<td>10,369</td>
<td>12,933</td>
<td>4.8</td>
<td>24.73</td>
</tr>
<tr>
<td>Service</td>
<td>33,818</td>
<td>49,260</td>
<td>18.4</td>
<td>45.66</td>
</tr>
<tr>
<td>Other&lt;sup&gt;b&lt;/sup&gt;</td>
<td>8,989</td>
<td>11,868</td>
<td>4.4</td>
<td>31.04</td>
</tr>
<tr>
<td>Totals</td>
<td>202,673</td>
<td>267,590</td>
<td>100.0</td>
<td>32.03</td>
</tr>
</tbody>
</table>

<sup>a</sup>Transportation, communication, and public utilities.

<sup>b</sup>Agriculture and miscellaneous.


Since 1954, Columbus' volume of wholesale trade has increased, but its volume relative to the total Ohio wholesale sales has declined. The wholesale trade of Columbus amounted to about 1.1 billion dollars or 7.6 percent of the total sales in Ohio during 1958. This percentage of total distribution was decreased from the 1954 percentage of 7.8. The percentage increase in wholesale sales between 1954 and 1958 was 10.7 percent, something less than the State average increase of
14.0 percent and also less than the average growth rate of 19.75 percent for the eight metropolitan area counties.¹

Wholesale sales continued to increase from 1958 to a total of 1.2 billion in 1961. Between 1950 and 1961, the number of wholesale outlets increased from 725 to 938, a rate of 31.2 percent. During the same period, sales increased 70.9 percent or from about 0.7 billion to 1.2 billion.²

Recent changes in Columbus' volume of retail sales and its relative position have been significantly different from the other major trading areas of Ohio.

In 1960, the volume of retail sales in Columbus was 904.4 million dollars, representing the third largest retail trading area within the State. The volume represented 7.2 percent of the State's total retail sales, and a 6.1 percent increase over the 1958 sales volume of 852.7 million. Columbus' relative percentage of the State's total retail sales declined from 7.9 percent in 1958, to 7.6 percent in 1959, and to 7.2 percent in 1960. The 6.1 percent increase in total retail sales for Columbus represented the smallest improvement shown by either the State as a whole or the eight counties in the major metropolitan areas. These counties had an average increase in retail sales of 14.85 percent --a 142.5 percent greater growth rate than Columbus' 6.1 percent.³

¹Ohio, Data Series, T-6, December 1960, p. 1.
²Chamber of Commerce, Statistical Summary, p. 1.
³Ohio, Data Series, T-4.1, August 1961, p. 1.
The retail sales per capita for Columbus increased also but at a rate considerably lower than either the State or the seven other major metropolitan counties. Between 1958 and 1960 Columbus' per capita retail sales increased 2.2 percent or from 1,290 to 1,319 dollars. The 1960 figure of 1,319 dollars represented the lowest per capita figure for the eight major metropolitan counties which ranged from 1,319 to 1,435 dollars per person. Columbus' 2.2 percent rate of growth in retail sales compared unfavorably with the state average of 11.7 percent and the eight county average of 11.8 percent.¹

Retail sales continued to increase from 1960 to a total of 940.5 million dollars for 1961.² Between 1950 and 1961, the number of retail outlets decreased from 6,468 to 5,373, a rate of 16.9 percent.³ During the same period, sales increased 80.4 percent or from about 521.2 million to 940.5 million dollars.

Between 1954 and 1958, Columbus increased the total receipts from selected services by 50 percent and increased in importance as a service area relative to the 88 county state area. The receipts from services amounted to about 132.4 million dollars in 1958, representing

¹Ohio, Data Series, T-5.1, October 1961, pp. 1, 2.

²Chamber of Commerce, Statistical Summary, p. 1.

³A change in the method of reporting retail outlets may discredit the figure of number of outlets. i.e., stores with sales less than 2,500 dollars were excluded in the 1961 estimate, but for the 1950 estimate, only stores with sales less than 500 dollars were excluded.
8.6 percent of the total Ohio receipts for this year, compared to 7.7 percent in 1954.¹

Columbus ranks third in Ohio in terms of receipts from services, following not too closely Cuyahoga and Hamilton Counties. The increase of 50 percent between 1954 and 1958 was the second highest increase recorded by any of the eight metropolitan area counties. Only Montgomery County increased at a more rapid rate of 52.2 percent.

Comparable data have not been made available for any period since 1958. However, State employment data indicate there has been a substantial increase in numbers of people employed in the service areas.²

The manufacturing industries employ a substantial percentage of the community's labor force. In 1958, 68,231 people were working in some area of manufacturing.³ This number had increased by 1961 to 69,401 or to 25.9 percent of the total employed labor force.⁴ Overall, however, Columbus experienced a net reduction in manufacturing employment between 1954 and 1958 of about 3,500 people.

The types of manufacturing industries are widely diversified and are generally "light" industries. The six leading industries in terms of the greatest number of employees are the manufacturers of transportation equipment, fabricated metals, non-electrical machinery, non-electrical equipment, fabricated metals, and food products.

¹Ohio, Data Series, T-7, December 1960, pp. 1, 3.
²Chamber of Commerce, Statistical Summary, p. 2.
⁴Chamber of Commerce, Statistical Summary, p. 2.
electrical machinery, food, and printing-publishing. These six industries employ about 47,662 persons or 69.9 percent of the total manufacturing labor force.\(^1\)

The total value added by manufacturing in 1958 was 622.7 million dollars, representing 5.43 percent of the total value added by manufacturing in Ohio. The value added per employee was 9,126 dollars, considerably lower than that per employee for the other seven Ohio metropolitan center counties and 745 dollars per employee less than the State average. New capital expenditures in 1958 were 48.3 million dollars which was 6.16 percent of the State total. The capital expenditure of 708.34 dollars per employee was slightly higher than the State average but ranked fifth among the State's eight major industrial center counties.\(^2\)

It should be pointed out, however, that: (1) the Columbus area relies less on manufacturing as a source of employment than other major industrial centers in the State, and (2) the data do not show changes of the last 5 years.

\(^1\)Ohio, \textit{Manufacturing}, p. 86.
\(^2\)\textit{Ibid.}, p. 82.
**METHODOLOGY**

**Determination of Universe**

The determination of potential outlets and channels of distribution of eggs was not difficult. Winter, Benjamin, Enochian, Pedersen, Grubb, and others have supplied pertinent information on the uses of eggs in various parts of the country. The general classification of the establishments could be determined as producers, assemblers, processors, wholesalers, retailers, business users, institutions, and various combinations of businesses using this functional classification. These industry segments can be further delineated into specific types of establishments. The logical retail outlets for shell eggs are grocery stores, dairy company milk routes, dairy specialty stores, confectioneries, beer and wine "carry-outs," other specialty stores, farmers' market, and door-to-door egg routemen. Secondary retail outlets, or those establishments which retail eggs

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to the ultimate consumer in the prepared form, can be determined as food service operations. Such operations in the Columbus area are the restaurants, inplant cafeterias, food counters in drug, variety, and department stores, catering firms, bars and taverns, grills, cafes, and other miscellaneous food service operations.

The non-commercial institutional users of eggs can also be outlined according to the presence of inplant food service operations. Potential institutional users of eggs are the state, county, city, and parochial elementary and secondary schools, universities, hospitals, nursing homes, old-age homes, sanitariums, detention establishments, and other penal establishments. Since Columbus is the capital of Ohio, it is presumed to have a greater number of special schools, hospitals, and penal establishments than a non-capital city of similar size.

Based on the use of eggs as a food product, the potential business users of eggs within the area are the food manufacturers. Such establishments as may be operating within the area are outlined as bakeries; confectioneries; premix manufacturers; noodles, macaroni, and ravioli makers; dressing and mayonnaise makers; baby food manufacturers; and the makers of specialty products.

On the wholesale level of distribution, the wholesaler may be of the traditional type or selling eggs horizontally to other egg wholesalers. More likely they function in a more complex manner. In such a case, they may or may not be vertically integrated with the producer.

\(^1\)See definitions, Appendix.
and retail outlets. They may purchase eggs from independent producers and process the eggs to be sold to other wholesale distributors, to retail outlets, to business users, institutions, and to consumers on a retail route.

The area's potential distributors of eggs on the wholesale level are egg producers, assemblers, processors, and distributors. Other wholesale outlets not primarily concerned with the movement of eggs, such as corporate, cooperative, and voluntary food store chains; milk distribution companies; and other food supply companies may be distributing eggs within Columbus.

It was much more difficult to determine the total universe and the names, addresses, and pertinent characteristics of the actual outlets and their suppliers than to determine the potential. These data were needed before any stratifications could be made and samples drawn. This part of the study was one of the most frustrating and time consuming because of following false leads and determining the validity of informational sources.

The problem of determining a classified universe of establishments was discussed with representatives from various city, county, and state offices; research bureaus and associations; and business associations. Examples of additional problems were: (1) A public research bureau had certain tax data from which a very large segment of the total industry could have been classified and stratified. These data were unavailable because they were confidential but available by definition; (2) Business associations kept membership lists of actual and potential members. But, these lists were only a
partial enumeration of the respective industry's total number of establishments. Also, pertinent characteristic data were available only as estimates by the respondent; and (3) Where data were available, there were problems of comparing and validating the sources and explaining and compromising the differences established through definition.

Several excellent sources of data were obtained and used for the enumeration, classification, and stratification of the universe. The respective city departments of health, the County Department of Health, and the State Department of Health opened their records of mandatory licenses issued for use in this project. These licenses concerned all food service operations, such as restaurants; all food establishments, such as grocery stores, food manufacturing establishments, and other food operations. Names, addresses, and characteristics of the enterprise, such as seating capacity and whether or not liquor was sold were obtained from these sources. The licensing of these operations is annual and mandatory according to state law.

A second source of valuable information was the Directory of Ohio Manufacturers. This source permitted a stratification of the business users, such as bakeries, confectioneries, and noodle manufacturers. The type of food produced and the characteristics of employment were reported in this directory.

A third source of data used was the Dispatch Printing Company's Route Lists. These lists reported the names, addresses, and certain characteristics of the universe of retail grocery stores, confectioneries, drug, and variety stores within the area. The Company's
classification of the outlets was not as detailed as was desired, but this was the only available source for such information. The subsequent enumeration proved this source to be fairly accurate.

A fourth major source of data was the local telephone directory. It was assumed that most of the commercial firms would have telephones, and the numbers would be listed in the directory as well as the names, addresses, and general type of business.

For the most part the latter statement was true, but several problems were encountered when using this source: (1) Businesses were listed that were no longer in operation; (2) A single firm may be listed under more than one business heading; (3) Wholesalers of eggs whose primary business was that of another nature were listed according to their primary business; and (4) The characteristics of the enterprise, except for type of business, were not available.

General Method of Study

The guiding objective of this study was to determine major outlets and channels of supply in terms of the volume of eggs handled. The second purpose was to describe these channels and to analyze the marketing services performed.

As a logistical technique, all firms thought to be moving eggs on either the retail, business user, or non-commercial institutional level were surveyed. These firms were surveyed for information pertaining to the volume and use of eggs handled, the marketing activities performed, and the source and conditions of supply. Secondly, the sources of supply for the above-mentioned outlets were surveyed if
they had a base of operation—either a main plant or branch sales office—in the Columbus Metropolitan Area. These sources of supply were for the most part major wholesale egg handlers and producer-distributors. The dairy specialty stores' supply sources whose main offices were situated outside of the area were also interviewed. No local source of information was feasibly available on these outlets.

The sources of data used for enumerating these establishments varied with the general type of outlet. The universe of businesses on the retail level was determined using the local telephone directory, Directory of Supermarket and Grocery Chains, Columbus Dispatch Route Lists, and the City of Columbus and State Departments of Health records. The universe of public institutions was primarily obtained from the telephone book, the boards of education of the city and county, the purchasing agents for each of these governments, and the aforementioned boards of health. An enumeration of the business users was made using the telephone directory, Directory of Ohio Manufacturers, the respective departments of health records, and by seeking information on other manufacturing users of eggs from those operations being interviewed.

The sources of supply for these outlets were made by using the interview of the outlets as a check and by using the telephone book for the names and addresses of potential egg handlers, such as commercial poultry firms, milk distributing companies, grocery wholesalers, meat wholesalers, and chain store warehouses. Additional information was obtained when interviewing the respective egg distributors as to competitive enterprises.
All of the commercial operations were classified, insofar as data were available, according to either their volume handled, seating capacity, completeness of line of goods, number of employees, or other pertinent characteristics. The classification was made in order to stratify the outlets into more easily handled samples and sample sizes. The details on classification and sampling immediately precede the discussion on each of the respective segments.

Universe of Establishments

Using the aforementioned survey techniques and the various outlined sources of information, the universe of actual and/or potential egg-distributing or egg-using establishments was enumerated as being in operation during 1961 and presumed operative in 1962. There were four corporate food store chains, one cooperative chain, five voluntary chains, and two dairy specialty store chains operating within the area during 1962. The chain stores and other primary outlets operated approximately 584 retail establishments. The secondary retail outlets included about 2,229 institutional and commercial food service operations. The potential manufacturing users of eggs included 78 bakeries, 12 confectioneries, 10 dairy product companies, and 5 other manufacturers of food products, such as salad dressing, macaroni, and noodles. Initially, 74 potential egg wholesalers could be established as in operation during 1962. This group does not include several door-to-door egg routemen who do not sell to retail outlets.
Table 5.--Number of actual and/or potential outlets for eggs, by type of establishment, in Columbus, Ohio, Metropolitan Area, 1962

<table>
<thead>
<tr>
<th>Type of Operation</th>
<th>Number of Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Retail Channel: (primary)</strong></td>
<td></td>
</tr>
<tr>
<td>Corporate, cooperative, voluntary, and dairy specialty food chain stores</td>
<td>191</td>
</tr>
<tr>
<td>Independent food stores</td>
<td>314</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>63</td>
</tr>
<tr>
<td>Milk distribution companies</td>
<td>15</td>
</tr>
<tr>
<td>Farmers' Market</td>
<td>1</td>
</tr>
<tr>
<td><strong>Retail Channel: (secondary)</strong></td>
<td>2,229</td>
</tr>
<tr>
<td>Non-commercial institutions</td>
<td>408</td>
</tr>
<tr>
<td>Commercial food service operations</td>
<td>1,821</td>
</tr>
<tr>
<td><strong>Manufacturing Users</strong></td>
<td>116</td>
</tr>
<tr>
<td>Bakeries</td>
<td>78</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>12</td>
</tr>
<tr>
<td>Dairy product companies</td>
<td>18</td>
</tr>
<tr>
<td>Other$^a$</td>
<td>8</td>
</tr>
<tr>
<td><strong>Wholesale Channel</strong></td>
<td>74</td>
</tr>
<tr>
<td>Egg handlers</td>
<td>30</td>
</tr>
<tr>
<td>Grocery wholesalers</td>
<td>14</td>
</tr>
<tr>
<td>Meat wholesalers</td>
<td>30</td>
</tr>
</tbody>
</table>

$^a$Manufacturers of sauces, salad dressing, macaroni, noodles, etc.
Sampling Technique

The rationale guiding the selection of the sample was the following: (1) Because of limited resources the universe of establishments could not be interviewed; (2) Therefore, a randomly selected sample of the universe was necessary which would be representative of the universe and would allow an expansion of the sample to a reasonably accurate estimate of the total universe; and (3) Stratification of certain groups of similar outlets was necessary because of the extremes of the universe in terms of the volume of eggs handled. Thus, certain groupings of outlets were interviewed in their entirety.

Using these guidelines, the sample of the universe included the following steps:

(1) Interviewing the headquarters of all of the food store chains, or 191 outlets. Where no centralized purchasing agency was maintained, the respective chain's stores were included in the independent group.

(2) Stratifying the independent food stores and confectioneries according to commonly held characteristics, and randomly selecting 100 or more stores to be interviewed, but placing the most emphasis on the larger stores.

(3) Interviewing the universe of milk distribution companies or 15 outlets.

(4) Interviewing the manager of the farmers' market and at least two of its major suppliers in order to estimate its characteristics.
(5) Enumerating the total universe of non-commercial institutions (408) by interviewing the purchasing agents or food service operators of the city, county, state, school districts, colleges, universities, and hospitals. A total of 47 purchasing agents or food service operators were to be interviewed.

(6) Stratifying the universe of commercial food service operations according to type, seating capacity, and liquor license holdings and interviewing approximately 135 operations.

(7) Stratifying the bakeries according to number of employees and interviewing all operations with more than 50 employees and a sample of 14 establishments with less than 50 employees.

(8) Interviewing the universe of confectioneries, dairy product companies, and "other" manufacturing users, or 27 outlets.

(9) Stratifying the egg wholesalers according to volume handled and interviewing all of the establishments which handled more than 50 cases of eggs per week—a total of 30 firms.

(10) Determining the movement of eggs through the meat and grocery wholesalers and interviewing those firms which handled more than 50 cases of eggs per week—a total of 44 firms.

A total of approximately 971 firms or establishments were covered by the sampling technique, representing 32.3 percent of the 3,003 total potential outlets for eggs.

Method of Data Collection

The data were collected from the various establishments comprising the wholesale distributors, primary, and secondary retail outlets
by means of personal interview and using a prepared schedule for each industry segment. A copy of each of these schedules is located in the Ohio State University's Department of Poultry Science.

In total, seven schedules were used. The wholesaler schedule consisted of questions concerning a general description of the business, products handled, the sale of eggs, egg procurement, prices and price determination, and the types of services both rendered and received. These schedules were used for interviewing the operators of those establishments which were distributing eggs primarily on a wholesale basis. A majority of these establishments were primarily egg wholesalers, but a few were milk companies and producer-distributors.

The questions on the retail grocery store schedule covered the types of poultry products handled by the stores, their methods of procurement, sale, pricing, the services performed for and by them, and questions concerning the business enterprise. These schedules were used for interviewing chain grocery store headquarters, other grocery stores, "carry-outs," confectioneries, and special stores, such as dairy stores.

A restaurant schedule, covering product use, procurement practices, price establishment, and business classification was used when collecting data from the retail food service operations. These operations included the area's restaurants, drug and variety stores with food service, caterers, bars and taverns, and other miscellaneous operations which served eggs as a dish.
The bakery schedule was composed of questions concerning the manufacturing use for eggs and egg products and their procurement practices. This schedule was used when interviewing the area's bakeries and other manufacturing users of eggs, such as noodle and salad dressing manufacturers.

A composite of the restaurant schedule was used for interviewing the hospitals and other similar non-commercial institutions. This schedule contained more questions concerning product use than did the restaurant schedule.

The institutional purchasing agent schedule was used when interviewing governmental purchasing agents, such as the state, county, city, and university food directors.

A confectionery schedule was used when interviewing the area's confectioneries. This schedule was an extension of the restaurant schedule.

Method of Analysis

This study is basically one of describing the institutions and their functions within the market structure. Therefore, the most used statistical tools are the simpler ones of ranges and averages. Mean deviations are calculated when their use aids in understanding the structure. Distributions are used in some cases to prevent loss of information.
Enumeration Difficulties

Several problems were encountered during the course of this study. As previously mentioned, one of the most frustrating and difficult was the determination and classification of the universe of egg-using or handling establishments according to commonly held characteristics. Partial information was available from a variety of sources, but differences in definition, periods of collection, and types of characteristics obtained made the task of combining and validating the information a difficult one. This task could have been simplified had certain confidential tax information been made available.

Most of the problems were typical of social and economic field research enumeration. Others, however, were brought about by the nature of the project.

Processed eggs were utilized in a large variety of food products. This study involved businesses which made many types of candy, bakery products, and used eggs in an assortment of other edible food products. As a non-homemaker, the author was insufficiently schooled as to the intricacies of using eggs in many of the manufactured end products. Yet, the interview was with a person who made his living manufacturing such products. Consequently, in order to establish a reasonable degree of rapport and to gain certain points of pertinent information, it was necessary to become hurriedly but reasonably well informed on a number of areas of cookery. The lack of self-confidence when discussing a subject, while at the same time trying to establish rapport,
obtain information, and guard against subjecting a bias into the answers, resulted in a trying task.

The grocery store segment of the retail industry presented a slightly different problem. Many salesmen call upon grocery stores during Monday, Tuesday, and Wednesday of each week. The established salesmen rarely bother the store manager, but the "new" salesmen are very persistent in their efforts to sell their merchandise. Also, these three days are major shelf re-stocking periods. As a consequence, according to most apologies, the managers of grocery stores try to avoid (and are ingenious in doing so) salesmen-like strangers coming into their store. It takes time, energy, and a respectable degree of ingenuity to develop methods of off-setting this problem.

Initially, an attempt was made to call for an appointment to avoid the sometimes frustrating task of "catching" the manager. This method did not prove either successful or acceptable. It was too convenient for the manager to refuse. However, for the chain store headquarter interviews, as well as for other large organizations, an appointment by telephone was an almost absolute necessity. Such organizations normally operate using this procedure.

Friday and Saturday grocery store interviews also presented difficulties. The heaviest consumer sales are usually made during these two days. There seems to be a greater degree of anxiety and apprehension displayed by the managers during this period than shown on the previous three days. The anxiety is notably greater if sales
have been "off" during the first part of the week. Consequently, this period is not conducive to "good" interviews.
Chapter II

THE USE OF EGGS BY COMMERCIAL BAKING FIRMS, CONFECTIONERIES, AND MANUFACTURERS OF OTHER FOOD PRODUCTS

PROCEDURE

Commercial Baking Firms

The universe of commercial baking establishments was determined from the 1962 Directory of Ohio Manufacturers\(^1\) and the 1962-63 Ohio Bell "Columbus and Vicinity" Telephone Directory.\(^2\) A check was made of all the chain organizations which had retail grocery stores operating locally to determine if their sources of bakery goods were included in the directories.

The directory of manufacturers was presumed to have listed all of the establishments which were primarily concerned with manufacturing bread and other bakery products for wholesale distribution. The directory did not state this distinction as having been made between wholesale and retail establishments. It simply defined a manufacturing establishment as an:


"... economic unit which produces goods or services --for example: a mine, a farm, a factory, a store. In most instances, the establishment is at a single physical location; and it is engaged in only one, or predominately one, type of economic activity . . ."¹

However, the directory's list of baking establishments corresponded closely to the telephone directory's list of wholesale bakers. After having researched the operational methods of all of the businesses listed, it could be concluded that all of the bakeries with 51 or more employees, except Donaldson, were primarily producer-wholesalers. Donaldson retailed their products through store outlets and truck routes. Four of the eight companies listed in the directory as having 50 or less employees were found to be primarily producer-retailers of bakery goods. Included in the directory list was a breakdown of the total number of employees, by sex, for each concern for a normal week of operation.

The telephone book was used to determine the numbers, names, and addresses of those baking establishments not listed in the manufacturers' directory. For the purpose of stratification and random sampling, these businesses were assumed to be small operations, relative to the firms listed in the manufacturers' directory, and producing bakery goods primarily for sale through their own retail outlet(s) or for retail distribution. This seemed to be a reasonably valid assumption based upon observations of the author and several correspondents within the local baking industry.

¹Ohio, Directory of Ohio Manufacturers, op. cit., p. ix.
According to the aforementioned sources of information, there was a total of 78 bakeries operating within the metropolitan area at some time during 1962. Nineteen of these bakeries were listed in the directory of manufacturers, 15 of which were concluded to be primarily wholesale concerns. Fifty-nine were listed in the telephone book and assumed to be primarily producer-retail establishments.

Table 6.—Number of employees in bakeries, by number of establishments, Columbus metropolitan area, 1962a

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>Number of establishments</th>
<th>Range of employment per plant</th>
<th>Average employment per plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 50</td>
<td>8</td>
<td>4-36</td>
<td>15.5</td>
</tr>
<tr>
<td>50 or more</td>
<td>11</td>
<td>51-1,044</td>
<td>250.2b</td>
</tr>
<tr>
<td>Unknown</td>
<td>59</td>
<td>3-25d</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>78</strong></td>
<td><strong>3-1,044</strong></td>
<td>xxxxxx</td>
</tr>
</tbody>
</table>

aOhio, Ohio Manufacturers, loc. cit.
bWith largest plant - 250.2; without largest plant - 170.8.
cOhio Bell, Telephone Directory, loc. cit.
dDerived from sample of all firms which were presumed to have less than 50 employees.

Eleven of the baking companies listed in the directory of manufacturers employed more than 50 people (range 51 to 1,044; average 250), and eight companies employed less than 50 persons (range 4 to 36; average 16). The number of employees for each of the companies
whose identity was extracted from the telephone book remained unknown. Except for the sample which was interviewed, there was no readily available source for obtaining these characteristics.

The universe of baking companies with a working force of 50 employees or more was personally interviewed using a prepared schedule. Eleven companies constituted this group. Only one company, with a number of employees located at the lower end of the range, refused to answer the complete list of questions. The total universe of bakeries with 50 or more employees was interviewed because: (1) It was assumed the larger baking companies would logically use a greater volume of eggs and egg products; (2) Assuming no change in quality, these plants would more quickly adopt new egg products or substitutes for eggs if the efficiency of the manufacturing process could be increased; and (3) Because of their relative size and importance in the local industrial area, these companies would be better informed and more conscious of the most modern operational methods and other changes taking place within the industry. In addition, mainly because of their size of operation, it is assumed that these plants will provide either inadvertently or inadvertently some degree of leadership and/or an effect on the operations of the smaller bakeries in the metropolitan area. This effect may come as a direct or indirect passage of information on operational or marketing procedures to the smaller firms; or, otherwise cause changes within the smaller firms through their relationships with the suppliers of egg products.
A random sample of 13 bakeries was personally interviewed from that group of 67 businesses having either less than 50 employees or an unknown number of employees. The sample represented 18 percent of the total universe of small bakeries.

An attempt was made to interview the metropolitan area's entire census of commercial confectioners. It had been noted that confectioners, especially candy manufacturers, utilized a substantial quantity of egg products. Enochian, et al, reporting on a national study of confectioners, found that 34 candy manufacturers, distributing on a national basis, used a total of nearly six million pounds of egg albumen and egg substitutes during 1960. From this, it could be concluded that the area's confectioners represented a potentially high-volume outlet for the distribution of egg solids and other egg products.

**Confectioneries**

The area's universe of confectioneries was determined using as sources of census: (1) the Directory of Ohio Manufacturers; (2) the Ohio Bell Telephone Directory; and (3) the Columbus and State Departments of Health records. The directory of manufacturers listed 10 confectionery firms operating in the area during 1961, giving the

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characteristics of employment by the number and sex of employees. The telephone directory substantiated this list, except two additional confectionery establishments were recorded as operating during 1962. A check of the aforementioned Health Departments' records turned up an additional establishment.

In total, 13 confectioneries were operating on a commercial basis during 1963. Ten of the 13 confectioneries were interviewed using one of two prepared schedules depending upon whether or not eggs per se were purchased and utilized in their end products. Three of the 13 firms either did not respond or were not personally visited because of enumeration difficulties.

Miscellaneous Food Products

The area's universe of the miscellaneous manufacturing users of eggs or egg products was determined by using the Directory of Ohio Manufacturers\textsuperscript{1} and the Ohio Bell Telephone Directory\textsuperscript{2} as sources of census. The directory of manufacturers listed 16 firms classified under product group headings which suggested the potential use of eggs as a product ingredient. These firms, which were in operation in 1961, were manufacturers of dairy products, sauces, seasonings, salad dressings, mayonnaise, vermicelli, or noodles. The telephone directory was used to corroborate this list. Eight additional potential manufacturing users were listed in the telephone directory.

\textsuperscript{1} Ohio, Directory of Ohio Manufacturers, \textit{loc. cit.}

\textsuperscript{2} Ohio Bell, \textit{Telephone Directory}, \textit{loc. cit.}
A telephone call was made to either the manager or purchasing agent of each potential user of eggs to determine their actual use. If eggs or egg products were being used in the inplant manufacturing process, an appointment was subsequently made for a personal interview. A prepared schedule was used for these interviews.
USE OF EGGS BY BAKING ESTABLISHMENTS
EMPLOYING FIFTY OR MORE PEOPLE

**Procedure**

In the case of each interview, either the owner, manager, production manager, purchasing agent, or plant superintendent was the respondent. Initially either the owner or plant manager was contacted in quest of an interview. In many cases referral was made to a department head and, in some cases, a committee was set up as respondents.

The 11 baking companies, with 50 or more employees as listed in the directory of manufacturers, were contacted and interviewed where applicable. Three of these manufacturing establishments had operations which were not applicable to the complete schedule. A fourth company did not respond. One company, the Ward Baking Company, had moved its manufacturing plant to another location during the early part of 1962. They had maintained a distribution point in Columbus. A second company, the General Baking Company, baked in Canton, Ohio, and maintained only a distribution point in Columbus. A third company, the Continental Baking Company, baked only bread in the Columbus plant and used no egg products in its operation. The fourth company, the Seymour Baking Company, regretfully refused an enumeration because of the state of its business.

The seven corporate and voluntary chain grocery organizations which operated locally were contacted to determine the source of their suppliers. These organizations were: the A & P Company, Colonial Stores (Albers), Big Bear Company, Kroger Company, Food Town Stores,
IGA Stores, and the Super Duper Stores. The A & P, Albers, and Kroger chains received most of their bakery goods from company-owned plants. The Kroger and A & P baking plants were located in Columbus, whereas the plant supplying the local Albers Stores was located in Cincinnati, Ohio. The Big Bear Company did little baking. Three of its stores had small bakeries located within their retail buildings. Two of these bakeries were in operation at the time of interview and the third was discontinued during 1962. These bakeries supplied mainly simple pastries and cakes for the stores in which they were located. Some items were sold through other Big Bear Stores. The major portion of the company's baked goods were produced under contract with a major non-affiliated baking company, or were supplied by other competing firms. The remaining three chains--Food Town, IGA, and Super Duper--did not operate a central baking plant.

Two other well-known baking companies which operated locally, but which were not listed in the directory of manufacturers, were contacted. The Blue Bird Baking Company baked in Dayton, Ohio, and maintained only a distribution point in Columbus. The Pennington Bread Company baked in Lima and Washington Court House, Ohio, and also maintained only a point of distribution in Columbus.

Seven local companies with 50 or more employees were interviewed and complete schedules obtained during the Spring of 1963. These companies were: the A & P Baking Company, American Baking Company, Donaldson Baking Company, Farm Crest Baking Company, Omar Baking Company, Kroger Baking Company, and the Quality Baking Company. This
group represented seven of the eight major commercial, wholesale bakeries located in the Columbus metropolitan area.

**Classification and Affiliation**

All seven of the establishments interviewed were corporate enterprises, six of which were affiliated with some type of chain organization. One company was an independently owned enterprise, two plants were owned by national retail grocery chain organizations, and four were either owned by or closely affiliated with national bakery chain organizations.

A total of about 2,400 people was employed by these seven firms during 1963. The independent company had the smallest number of employees at 60. The remaining six plants had more than 100 employees each, ranging from 106 to 1,100 employees. The two plants owned by national retail grocery chains averaged 377 employees each, and the four plants owned by or associated with national bakery chains averaged 399 employees each.

These facts are irrelevant, except, they point out that baking concerns affiliated with national wholesale or retail chain organizations may have a tendency to be larger than independently owned and operated bakeries of the same type.
Table 7.--Affiliation of bakeries interviewed, classified by number of employees, 1963a

<table>
<thead>
<tr>
<th>Affiliation of firms</th>
<th>Number of bakeries</th>
<th>Number of employees</th>
<th>Average number of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>1</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Owned by retail grocery chain</td>
<td>2</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>Affiliated with national bakery chain</td>
<td>4</td>
<td>1,100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>151</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>230</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>7</td>
<td>2,401</td>
<td>xxx</td>
</tr>
</tbody>
</table>

aOne-hundred and nine more employees were reported during the interview (1963) than were listed in the 1962 directory of manufacturers. This probably represents an actual increase in employment judging from the over-all trend of the answers and the general economic growth of the area.

Source: Ohio, Ohio Manufacturers, loc. cit.

Four of the seven bakeries produced a full line of bakery goods; for example, bread, rolls, cakes, pies, cookies, doughnuts, pastries, and coffeecakes. The Kroger plant produced crackers and otherwise a full line of goods except for pies. One company, Farm Crest, produced only cookies, and a second company, the American Baking Company, produced only bread and rolls. Eggs, however, were used by all of the plants in the manufacturing process.

Egg Products Used

Significantly, none of the seven companies used or had used shell eggs in their baking process in the last 20 years. Frozen and dried egg products were used for all of the production requiring eggs.
Shell eggs were replaced by frozen and dried egg products because of the function and economic advantages of the latter. Some of the disadvantages of using shell eggs were: (1) the lack of uniformity in overall weight, proportion of yolk to albumen, color of yolk, and interior quality of the eggs; (2) the handling and storage problems caused when eggs are separated for use in products requiring non-natural proportions of either yolk or albumen; (3) the hazard of shell particles being mixed into the batch; (4) the hazard of mixing an off-color or spoiled egg into a batch and ruining an entire "run"; and (5) the general labor and storage problems of handling bulk cases and maintaining quality.

Six of the seven firms reporting were dependent upon frozen eggs as their main source of the product. The cookie company was using neither frozen nor shell eggs. Its entire operation was based on formulae using dried eggs (egg solids) exclusively.

The reported advantages of frozen eggs for the manufacture of bakery goods were in direct contrast to the disadvantages mentioned for shell eggs. Frozen eggs were reported: (1) convenient to handle and store; (2) uniform in texture, color, and quality; (3) available either as whole egg or separated into yolk and albumen. Also, mixtures of various proportions or according to specification, including certain desired additives, were readily available commercially; (4) easily mixed into batters; (5) to allow confidence in end product uniformity and quality could be controlled easier; (6) to reduce the possibility of error in human judgment since the ingredients were
mixed by weight using a predetermined formula; and (7) they could be purchased in advance, in exact amounts, and according to individual industry specifications for delayed or staggered delivery throughout the year or contract period.

In general, the chief advantages of frozen eggs were that they functioned adequately in the baking process and drastically reduced the problems associated with the use of shell eggs. Most of the respondents were of the opinion that "possibly" the basic cost of using frozen eggs was greater than for shell eggs. However, because of the actual and potential labor and storage problems associated with the use of shell eggs, this "possibly" greater initial cost of frozen eggs was considered to be more than offset by the definite lack of production problems and labor saving advantages.

Dried egg products, or "egg solids", were used to some extent by the two larger bakeries and by the cookie manufacturer. The other four companies were not using egg solids in their dough mixing process. However, one plant was baking a substantial part of its output from a commercially prepared premix in which dried eggs were used.

The respondents' reactions concerning the use of dried egg products in the manufacturing process were mixed. Two plants used premixes containing dried eggs; one for certain cakes only, and the second for doughnut, roll, sweet bread, and sweet yeast dough. The

end products obtained were judged to be satisfactory with the opinion that greater amounts of premixes would be used in the future. Three plants used dried eggs in cookie doughs where inplant mixing was performed. The general comments were: (1) The quality of the end product was equal to that product using frozen eggs; (2) Dried eggs were easily stored, and cans could be partially used and re-stored without fear of excess bacterial contamination; (3) The product was easier to handle, solubility presented no problem, and it mixed better than frozen eggs; (4) The overall cost was the same or perhaps less than frozen eggs; and (5) In general, less problems were encountered when using dried eggs for cookie production.

One concern was mixing dried eggs in certain cake doughs. The respondent considered the end product to be less desirable in taste and texture than when using frozen eggs. However, because of the labor saving factors involved, a return to frozen eggs was not planned for this particular product. Another plant was experimenting and changing production formulae to replace frozen eggs with dried eggs for certain bread, roll, doughnut, and pastry doughs. There were few comments made concerning the problems encountered or the acceptability of the end product. Several favorable comments, such as ease of handling, mixing, transportation, and refrigeration unnecessary, were made concerning the dried product. Experiments were also being conducted using egg solids in angel food cake mixes. Textural problems and excessive costs were encountered, thus disallowing any changes in basic formulation. The respondent preferred changing to egg solids if
the product quality could be improved and the cost lowered. Two other large companies, neither of which used dried eggs in the inplant mixing process, reported: (1) The dried product was easily mixed and handled, but the end product was less desirable than with the frozen eggs and (2) The frozen product allowed better quality control, was more convenient to use, and cost less than either the dried or shell egg.

Generally, in the opinion of those manufacturers using dried eggs for a limited number of products, the product was a satisfactory substitute in certain products for both shell and frozen eggs and would be used to a greater extent in the future. The increased use would depend upon the comparative quality of the end product, the cost reduction possible, and the comparative production problems. However, there seemed to be a subjective preference for frozen eggs or a dislike of dried eggs by most of the people closely associated with the manufacture of the products, irrespective of the alleviation of certain handling and storage problems.

The five major types of frozen eggs used by the bakers were whole egg, plain yolk, sugared yolk, albumen, and fortified whole egg.\(^1\) Of the five plants baking a full line of goods, five were using albumen, four were using whole eggs, three were using yolk and sugared yolk, and one plant was using a fortified whole egg. The only type of dried egg reportedly used was the whole egg. Other than in cookies, egg

\(^1\) Whole eggs to which extra yolks and sugar, salt, or syrup have been added. Made according to packers' own formulae.
solids were used in a limited number of types of cakes, rolls, breads, and doughnuts by two plants, excluding the dried eggs incorporated into premixes. On the other hand, frozen eggs were used by four of the five full-line plants in all of their products which required eggs, such as rolls, cakes, pies, cookies, doughnuts, pastries, and some breads.

Table 8.—Use of various forms of egg products in specific end product groups, by number of bakeries

<table>
<thead>
<tr>
<th>End product</th>
<th>Number of plants baking each product^a</th>
<th>Form of egg product used</th>
<th>Number of bakeries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breads</td>
<td>5</td>
<td>Shell: 0 Frozen: 4 Dried: 1 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Rolls</td>
<td>6</td>
<td>Shell: 0 Frozen: 4 Dried: 1 Premix^b: 1 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Cakes</td>
<td>5</td>
<td>Shell: 0 Frozen: 5 Dried: 1 Premix^b: 1 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Coffeecakes</td>
<td>5</td>
<td>Shell: 0 Frozen: 4 Dried: 1 Premix^b: 1 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Cookies</td>
<td>4</td>
<td>Shell: 0 Frozen: 2 Dried: 3 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Pies</td>
<td>4</td>
<td>Shell: 0 Frozen: 4 Dried: 0 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Doughnuts</td>
<td>5</td>
<td>Shell: 0 Frozen: 3 Dried: 1 Premix^b: 1 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Crackers</td>
<td>1</td>
<td>Shell: 0 Frozen: 0 Dried: 1 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Fillings</td>
<td>5</td>
<td>Shell: 0 Frozen: 5 Dried: 0 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
<tr>
<td>Icings and toppings</td>
<td>5</td>
<td>Shell: 0 Frozen: 5 Dried: 0 Premix^b: 0 Substitute^c: 0</td>
<td>0</td>
</tr>
</tbody>
</table>

^aSome plants use more than one type of egg product for different types of bakery products grouped under one heading (e.g. cakes), thus plant totals do not always agree.

^bContaining some eggs.

^cReplacement for eggs in baking.
Five of the seven plants reported no changes in the products used during the last 5 years. The other two companies made substantial changes. The plant manufacturing cookies exclusively changed completely from the use of frozen eggs to dried eggs during 1961. In the past they had some trouble with excess bacterial contamination of frozen eggs. This was thought due to partial usage and re-storage of the 110-pound cans of eggs. The change to dried eggs simplified the handling procedures and at the same time reduced contamination. Another reason for changing was the lessening of general labor problems in handling and storage. There was no loss in the quality of the end product and the cost of the output was either the same or less than that when using frozen eggs. The second company had been cautiously changing from frozen to dried eggs for the production of several products during the past 5 years. The changes occurred in the semi-perishable products such as breads, rolls, cookies, and doughnuts, except where the formulae called for egg albumen. If albumen was needed, then frozen eggs were used. The reasons reported for changing were the easier handling and the ability to store at room temperatures.

All seven respondents reported having no problems with the egg products they were using at the time of interview. The dominant potential problem was possible contamination and consequent spoilage of frozen eggs and, if mixed, subsequent ruin of the batch. The functional properties were considered to be satisfactory. In contrast
to Enochian's national survey made during 1961, there were no problems mentioned or improvements suggested concerning yolk color or the solubility of dried eggs.

Substitutes for eggs per se were reportedly not being used in the inplant mixing process nor had they been used in past production. However, various additives were used in combination with either frozen or dried eggs. Some of these products were: mono and diglycerides; lecithin; fat derivatives; dough conditioners; emulsifiers; soy flour; cottonseed flour; yellow, orange, and honey coloring; other artificial colors; unnamed gums and proteins; and leavening and cornstarch. Premixes, however, were used by two plants for cakes, doughnuts, sweet rolls, and sweet yeast doughs. The end product was considered satisfactory from both an aesthetic and economic standpoint. Because of the potential economies involved, the production managers predicted an increase in the future use of premixes even though they found this method of baking somewhat reprehensible because the practices used were alien to their customary methods of baking.

All of the bakeries, except the plant relying most heavily on premixes, reported using a greater volume of eggs than in former years. This volume increase was attributed to increased business rather than a greater percentage input of eggs in any of the end products.

Volume Used

In 1962, the seven plants purchased and used in their end products approximately 3.05 million pounds of frozen eggs and 38.5 thousand

1Enochian and Saunders, op. cit., p. iii.
pounds of dried eggs. Of the total poundage of frozen eggs used, 1,325.3 thousand pounds were whole, 120,356 pounds were yolk, and 1,603.7 thousand pounds were albumen. These figures respectively represent 43.5 percent, 3.9 percent, and 52.6 percent of the total usages of frozen eggs by the seven plants. Some of the frozen whole eggs and yolks were fortified with sugar and other additives. However, no attempt was made to separate the fortified frozen from the natural or standard frozen eggs. Approximately 38.5 thousand pounds of egg solids were used, all of which were whole dried eggs.

Four of the seven plants reporting used only frozen eggs in their products, whereas two plants used both frozen and dried eggs, and one plant used only dried eggs. The total number of firms using specific types of frozen eggs were: six--frozen albumen, four--whole frozen eggs, and three--frozen yolks. One of the frozen-dried egg combination plants used only frozen albumen in conjunction with dried whole eggs, whereas the second firm used all three types of frozen eggs in addition to the egg solids.

The average total volume of all forms of frozen eggs used weekly by each plant was 9,770 pounds comprised of 6,372 pounds of whole, 772 pounds of yolk, and 5,137 pounds of frozen albumen for each plant using the respective products. The three firms utilizing dried whole eggs utilized about 247 pounds per week. On a liquid egg equivalent basis, this amount averaged to about 987 pounds per plant per week.

Egg usage was also figured on the basis of weight used per person employed. The seven firms employed about 2,400 people during 1963, averaging about 343 employees per plant. Based on the average number
Table 9.--Estimated volume of eggs used by seven largest Columbus bakeries, by form and type of eggs, 1962\textsuperscript{a,b}

<table>
<thead>
<tr>
<th>Factor</th>
<th>Types of eggs used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Total actual weight (lbs.)</td>
<td>3,048,320</td>
</tr>
<tr>
<td>Percentage distribution</td>
<td>100.00</td>
</tr>
<tr>
<td>Total liquid weight equivalent (lbs.)</td>
<td>3,202,320</td>
</tr>
<tr>
<td>Percentage distribution</td>
<td>100.00</td>
</tr>
<tr>
<td>Number of plants using</td>
<td>6</td>
</tr>
<tr>
<td>Average pounds/plant/week</td>
<td>9,770</td>
</tr>
<tr>
<td>Average number of employees per plant using each</td>
<td>383</td>
</tr>
<tr>
<td>Average pounds/employee/plant/week</td>
<td>25.50</td>
</tr>
<tr>
<td>Range in pounds</td>
<td>.09-33.3</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Based on estimates by respondents or actual records of plants when made available.
\textsuperscript{b}Largest in terms of number of employees.
\textsuperscript{c}Reconstituted using 4:1 ratio.
of employees for those plants which were using the various types of egg products, the following average weekly amounts were used per employee: 25.5 total pounds of frozen eggs; and, for the plants using, comprised of 16.5 pounds of frozen whole, 1.8 pounds of frozen yolk, and 13.4 pounds of frozen albumen. The three firms using egg solids utilized an average of .41 pounds per employee per week.

Two of these seven plants did not produce a full line of bakery goods and a third produced a relatively small volume of products requiring eggs. As a consequence, the data concerning these operations significantly lowered the usage data for the large, full-line baking firms.

Four plants used a total of 3.17 million pounds of liquid egg equivalent during 1962. The total poundage was comprised of 1,323,582 pounds of frozen whole eggs, 120,356 pounds of frozen yolks, 1,600,862 pounds of frozen albumen, and 33,300 pounds of dried whole egg. Calculating from a liquid egg basis, the use of dried eggs ranged from 0.0 to 7.3 percent of the total weight of eggs utilized per plant.

All four of these operations were using one or more types of frozen eggs, whereas only two were using dried eggs. Of the four plants using frozen eggs, three used frozen whole and yolk, while all four used frozen albumen. The proportionate use of each type of frozen egg of the total ranged per plant from: whole--7.7 to 74.5 percent of total frozen; yolk--4.1 to 26.4 percent of total frozen; albumen--21.4 to 100.0 percent of total frozen eggs used. The average
Table 10.—Volume of eggs used by four major full-line bakeries, by form and type of eggs, 1962

<table>
<thead>
<tr>
<th>Item</th>
<th>Types of eggs used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Volume used(^a) (lbs.)</td>
<td>3,044,800</td>
</tr>
<tr>
<td>Percent distribution</td>
<td>100.00</td>
</tr>
<tr>
<td>Range of percentages each is of plants' total(^b)</td>
<td>7.7-74.5</td>
</tr>
<tr>
<td>Number of plants using</td>
<td>4</td>
</tr>
<tr>
<td>Average used per plant per year (lbs.)</td>
<td>761,200</td>
</tr>
<tr>
<td>Average used per plant per week (lbs.)</td>
<td>14,638</td>
</tr>
<tr>
<td>Total liquid equivalent of all eggs used(^c) (lbs.)</td>
<td>3,178,000</td>
</tr>
<tr>
<td>Percentage distribution</td>
<td>100.00</td>
</tr>
</tbody>
</table>

\(^a\)Range could not be published without divulging exact data of two operations; the extremes are so varied that specific operations can easily be associated with volume.

\(^b\)Ranges and averages include only those plants using the respective types of eggs.

\(^c\)Calculations based on liquid equivalent of dried eggs using formula: 1 unit dried whole egg plus 3 units H\(_2\)O equivalent to 4 units of liquid whole egg; courtesy of Anheuser-Busch.
volume of each type of egg used weekly per plant was: 14,638 pounds of total frozen eggs, 8,485 pounds of frozen whole, 772 pounds of frozen yolk, 7,697 pounds of frozen albumen, and 320 pounds of dried whole egg. On a liquid equivalent basis, these four plants averaged using about 15,919 pounds of eggs weekly throughout the year. The limits of the range of the total eggs used were extreme. The difference between the extremes of the range amounted to more than 1.7 million pounds.

The average volume of eggs used per employee was much more useful. There was considerably less difference between the extremes of the range based on this characteristic. The four plants average use of frozen eggs was 1,591 pounds per employee for the year. The average volume used per employee ranged from 870 to 1,733 pounds, a difference between the limits of 863 pounds per person. The figures, reduced to a weekly basis, averaged 30.6 pounds used per employee, ranging from 16.7 pounds to 33.3 pounds per employee. In the case of this survey, the plants with the largest number of employees utilized more eggs per employee than did those plants located in the lower limits of the range of employees. The plant with the largest number of employees used about 100 percent more frozen eggs per person employed than the plant with the smallest working force.

Based on the annual average number of employees for those firms which were using the various types of egg products, the average weekly volumes used per capita were 30.6 pounds of frozen eggs, comprised of 19.4 pounds of whole, 1.76 pounds of yolk, and 16.1 pounds of albumen.
Table 11.--Volume of eggs used per employee by four major full-line bakeries, by form and type of eggs, 1962

<table>
<thead>
<tr>
<th>Item</th>
<th>Types of eggs used</th>
<th>Frozen</th>
<th></th>
<th></th>
<th>Dried</th>
<th>Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Whole</td>
<td>Yolk</td>
<td>Albumen</td>
<td>Whole</td>
</tr>
<tr>
<td>Volume used (lbs.)</td>
<td></td>
<td>3,044,800</td>
<td>1,323,582</td>
<td>120,350</td>
<td>1,600,862</td>
<td>33,300</td>
</tr>
<tr>
<td>Number of plants</td>
<td></td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Total employees for plants using&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>1,914</td>
<td>1,314</td>
<td>1,314</td>
<td>1,914</td>
<td>1,700</td>
</tr>
<tr>
<td>Average number of employees per plant using</td>
<td></td>
<td>478.5</td>
<td>438.0</td>
<td>438.0</td>
<td>478.5</td>
<td>850.0</td>
</tr>
<tr>
<td>Average pounds used per employee per year</td>
<td></td>
<td>1,591</td>
<td>1,077</td>
<td>913</td>
<td>836</td>
<td>19.6</td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td>870-1,733</td>
<td>118.3-1,162</td>
<td>48.4-405.6</td>
<td>339.3-1,733.3</td>
<td></td>
</tr>
<tr>
<td>Average pounds used per employee per week</td>
<td></td>
<td>30.59</td>
<td>19.40</td>
<td>1.76</td>
<td>16.10</td>
<td>.38</td>
</tr>
<tr>
<td>Range&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>16.7-33.3</td>
<td>2.3-22.3</td>
<td>0.9-7.8</td>
<td>6.5-33.3</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Ranges and averages include only those plants using the respective types of eggs.

<sup>b</sup>All weighted averages.
All of the seven bakeries reported a gradual increase in the volume of eggs used over previous years. This increase, however, was attributed to greater sales volume rather than an increase in the amount of egg used in any particular product. Even though all of the firms reported an increase in the amount of eggs used over previous years, the use of premixes had reduced the potential increase to some degree. The extent of this reduction is unknown. However, two of the larger companies were using substantial amounts of premix for products which had eggs as a basic ingredient. The premixes were not prepared locally.

The four full-line baking companies reported similar fluctuations occurring in the volume of frozen eggs used during 1962. The 1962 fluctuations in volume of eggs used were considered a typical year. The general responses were: (1) very little overall fluctuation, (2) volume used goes up during winter months, and (3) down during the summer months. However, it was further pointed out by the bakeries that: (1) A gradual increase up to 10 percent over the average weekly volume of frozen eggs used could be expected, starting during September and extending through the fall and winter months. The holiday periods of Christmas and New Year's were the heaviest production periods, especially for cakes, pies, and pastries. Consequently, a 100 percent increase over the average weekly volume of eggs used frequently occurs for a short period of about 2 weeks; (2) After the winter holiday period there could be expected a gradual decline to a low point of about 10 percent of the yearly average amount of eggs.
used weekly. A low point is usually reached during July and August. During this period there is generally a reduction in the amount of perishable goods produced. This reduction occurs in products, such as cakes, cream pies, puff pastries, and other goods in which substantial amounts of eggs are used.

The seasonal rise and fall in perishable goods production and the resulting fluctuation in the volume of frozen eggs used was directly related to the consumers' purchasing habits, according to the respondents. The increase in perishable sales which occurred during the fall and winter was generally attributed to four factors: (1) The children starting back to school and carrying cakes and pastries in their lunches; (2) The inclement weather prohibiting outdoor meals and, as a consequence, probably causing more complete course meals to be eaten; (3) The number of holidays and the customary festive meals associated with them; (4) The vacation period has been completed and most people are settled into their routine homelife.

The general decline in consumer purchases of perishables during the spring and summer was somewhat more difficult to explain. Some of the factors believed to contribute to reduced sales were: (1) a change in attitude of the adults, disfavoring their use and, perhaps, a lessening of desire by the children for cakes and pastries in their lunches; (2) favorable weather permitting outdoor meals, thereby probably reducing the number of full course meals eaten;\(^1\) (3) not as

\(^1\)It was generally believed that less cake and cake-like products were consumed at outdoor meals.
many festive holidays during the spring and summer periods; (4) vacations are beginning and the home routine has been disrupted, thereby probably lessening the amount of perishables eaten; (5) the weather during the summer, especially during July and August, probably lessens the consumption of "heavier" cakes, pies, and pastries; (6) the local health departments have very stringent production and handling regulations concerning custard and cream pies. Because of these regulations and the high incidence of spoilage, many of the plants do not manufacture cream and custard products during the summer.

The seasonal fluctuations in the volume of dried eggs used were similar to those for frozen eggs, except where dried eggs were used in cookies and other "light", semi-perishable products. Two plants reported the volume of sales of semi-perishables to be greatest during the summer season and least during the winter season. As a consequence, the demand for dried eggs was above average during the summer and below average during winter months. There was little or no definite fluctuations of consumer purchases during the remaining two seasons.

**Procurement Practices**

All of the eggs used by the seven plants, both frozen and dried eggs, were purchased from egg breaking-processing-distributing firms operating on a national scope. The supplying firms from which eggs had been purchased were: Henningsen Foods, Standard Brands, Armour, Anheuser-Busch, Kraft, Frigid Foods, Swift, Wilson, and Ballas. Five of the suppliers--Standard Brands, Swift, Anheuser-Busch, Armour,
and Frigid Foods—have branch sales offices and distribution points located in Columbus.

One of the seven operations had purchased on the basis of a mutual, verbal agreement from only one major company for more than 5 years. This plant was the fourth largest user of eggs among the seven. The terms of this agreement were simple: (1) the supplier agreed to supply all of the firm's needs for eggs, according to specified needs, at a locally competitive price; (2) the firm agreed to purchase from the said supplier indefinitely as long as these conditions were met by the supplier; (3) either party could terminate the agreement at any time. The arrangement had been satisfactory for the firms involved. There had been no change in the firm's source or supply for over 5 years.

The remaining six firms purchased their egg products using a written contract with all but occasional fill-in suppliers. These firms were all members of either a wholesale bakery chain or retail grocery store chain organization. The contracts under which they operated were negotiated by either the regional or divisional office of the respective organization. The plant's role was mainly limited to the determination of its own specifications for the eggs to be contracted. In each case, from three to ten companies whose egg samples met the respective organization's specifications were issued a contract by the prospective buyer upon which bids were made. Four of the six local bakery firms each held a contract with a single supplier which had submitted the lowest price bid for that particular
plant's product and delivery specifications. Two of the larger plants, however, received eggs throughout the year from more than one contracted source. One plant received eggs from more than five major egg handlers. In this case, the parent company's negotiators had purchased eggs from most of the major midwestern egg handlers and had made contractual arrangements for an adequate supply of these eggs to be stored locally in the federal cold storage locker.

In general the same methods were used in buying eggs from any supplier. The potential egg supplier must meet the technical specifications of the using plant. If this qualification is met, based either on favorable past dealings or by test samples, and there is reasonable assurance that the supplier can meet both the technical and delivery specifications for the duration of the proposed contract, the potential seller is invited to submit a price bid for the contract. The qualified egg supplier which submits the lowest price bid receives the contract. The largest user of eggs deviated from this pattern of letting contracts. The chain organization's negotiators make purchases from several egg suppliers during the spring. As a result of the contractual methods used, as many as five major egg companies may be moving the same type of egg into the local storage area to be picked up as needed by the plant. As a consequence, the plant which uses these eggs may have several companies' products in its plant storage area at any one given time. There was no practical reason given for this practice. However, it is significant to note that there were no problems in the production process caused by this practice.
Since the six major baking firms required the egg suppliers to meet certain technical volume and delivery specifications under written contract, it can be concluded that the factors of product quality, service, and dependable supply are very important. Their relative importance is not as easily determined. According to the respondents, their respective company could not competitively operate if these product and service specifications were not consistently met. Yet, there could be considerable variance in the uniformity and other technical properties of the eggs and slight changes could be easily made at the time of manufacture using egg substitutes to maintain the products' appearance and taste. Highly contaminated eggs could, on the other hand, cause considerable production problems. The service of adequate and specific supply of products could be more important in the long run. For short-run deficiencies in supply, the plant can revert to its own excess stores which are kept on hand to prevent an immediate shortage, or purchase its needed supplies from one of the five local distributors which keep adequate supplies on hand.

When asked specifically why their respective companies purchased eggs from each of their suppliers, quality was the first response by six of the seven firms. The middle-sized firm, in terms of volume of eggs used, ranked service first. Service was the second response by four firms (three largest users and one small volume plant). The two medium volume plants ranked price second, and the smallest user did not respond. Price was the third response by the four large volume users. Three plants did not make a third response. These responses
would indicate that quality was of the utmost importance, service second, and price least important, at least in the opinion of the respondents.

The operating positions of the six interviewees, whose first response to the previous question was quality were two purchasing agents, three production managers, and one plant manager. The respondent who ranked service first was the independent plant owner. Because of the position of the respondents in relation to the overall plant operation, it is entirely possible that their answers were esthetically biased toward the immediate production aspect and resulting end product rather than toward the financial and long-run operational aspects. In all six cases, the actual negotiations and final decisions were made either by someone in the organization other than the respondent or the respondent's decisionmaking role was limited. The very nature of the conditions of the contract, purchasing according to technical and delivery specification, lend credence to the postulate that quality and service are, in the long run, more important to the business than the price. Moreover, it can be concluded that assuming the same quality and service, price is the major factor when determining a source of supply for frozen or dried eggs.

Five of the seven plants had changed major suppliers during the past 5 years. The two remaining plants had made no changes during this period. The changes in suppliers occurred only during the contract negotiation periods. The only reason given was that the contract was let to the lowest bidder during each negotiation period.
The frequency of the negotiation periods, or length of contract, varied from 90 days to one calendar year. Each company varied the length of its contract depending upon the present supply-demand situation and future expectations. Each of the five companies had purchased supplies from two to five different egg suppliers during the preceding 5 years. Most of the supplies received during the period of interview were purchased from suppliers who maintained branch outlets in the Columbus area. The two exceptions were: one firm purchased its total requirement through a national supplier's branch outlet located in Detroit, Michigan; another received part of its supply from several firms which had no local branch office.

Four different methods of delivery were used by the seven plants. These methods were: (1) total amount contracted and delivered to plant in amounts as ordered—when ordered; (2) total amount contracted and delivered to local cold storage warehouse and picked up as needed by the respective plants; (3) total amount contracted with specified delivery periods in the amounts currently ordered; and (4) no written contractual arrangement but mutual agreement to make deliveries twice per week and keep a rotating stock of a certain number of cans on hand at all times with extra amounts to be supplied as ordered. The first and second methods outlined were used by those bakeries which purchased more than 200,000 pounds of frozen eggs per year. The latter two methods were used by those plants with less than a 55,000 pound volume.
The contractual arrangements between the parties were not reviewed in depth. However, there seemed to be a congenial working relationship between each of the plants and its respective suppliers, and that the amount and delivery specifications of the contract were constantly being adjusted in a "give and take" manner. The most often unsolicited expression was that they had no problems with either their eggs or their egg suppliers. It was often pointed out that eggs were about the only thing with which there was no problem.

All of the bakeries reported that their main sources of supply never "ran out" of eggs insofar as their requirements were concerned. If their main source of supply went out of business, the respondents all stated they would purchase from one of the other major egg suppliers which operated in the area.

All of the bakeries reported that they never had a shortage of eggs serious enough to slow down or stop production. In response to the question concerning what they would do if they "ran out" of eggs, three types of immediate action were proposed: (1) Those plants buying from distant suppliers would call on the local branch suppliers to fill in their shortages. If, however, the shortage was serious enough to warrant the extra transportation and handling costs involved, the plants could and would order eggs from their suppliers and receive delivery within 12 hours; (2) Those firms purchasing eggs from a supplier which operated a branch office locally would call the branch and expect immediate delivery; (3) The third method proposed was to borrow from one of the parent organization's warehouses, or
another baker. Even though these methods for obtaining an immediate supply of eggs had not been used recently, the respondents were confident their respective procedures would alleviate any possible immediate shortages.

Price Determination

Little detailed information was available on the methods used for purchase price determination by the seven firms. Still, two basic methods were used: (1) One firm, the fourth largest in terms of volume of eggs used, permitted the supplier to set his own prices without benefit of bargaining or bidding. There was an agreement by the supplier to keep the prices competitive. The bakery checks both the local prices and Chicago market prices occasionally and has been satisfied with this method for over 5 years; and (2) The remaining six firms purchased on a contractual basis and their purchase prices were primarily contingent on the lowest bids submitted. None of these firms were independently owned or operated, and for the most part, major policy decisions and contract negotiations were handled by a higher authority within the parent organization.

Because of the overall size, purchasing power and consequent potential bargaining power of these organizations, it was suggested that competitive bidding in the normal sense was not the only means by which contract prices were set. Bargaining was not mentioned as a part of the method of contract price determination, although the buying organizations were in a relatively favorable bargaining position. However, the operating methods of the breakers tend to
countervail this potential position. The processors tend to break
and process the larger quantities of eggs either according to order
or to the amounts needed for reasonably assured sales. Thus, storage
holdings are kept at an operational level which will disallow unequal
bargaining power by buyers.

The terms of payment were reported by five of the respondents--
the other two had no knowledge concerning prices or payments. Each
plant made payments according to agreement with their respective
suppliers. The terms varied from payment on pickup from storage to
once a month. One firm paid for its eggs on pickup; one, once per
week; one, net 10 days; and two plants made payments once per month.
A total of 13 bakeries was randomly selected from the 67 establishments each of which presumably employed less than 50 people. In each case, either the owner or the manager of the sample firm was contacted in quest of an interview and subsequently interviewed using a prepared schedule. One firm was a member of an interstate retail bakery chain. The organization's local plants were not preparing their doughnut and other doughs on the premises. All of their goods were baked from premixes which were purchased by the company's headquarters from a premix manufacturer in North Carolina.

Classification and Affiliation

The remaining 12 firms from which complete schedules were obtained were operated independently of either national or local bakery chains, grocery store chains, or other similar multi-unit organizations. Two of the bakeries were owned by a local restaurant and catering firm, respectively. The baking plants were physically separated from their affiliated establishments.

Nine of the 12 firms were operated primarily as retail bakeries, although many of them sold small but varying amounts of goods through retail outlets other than their own, such as grocery stores and restaurants. The remaining three firms operated primarily as producer-wholesalers, distributing the major portion of their products through unaffiliated retail outlets.
The number of persons employed by the firms ranged from 3 to 25. The number of full-time employees per bakery averaged slightly more than seven. Most of the firms were family-owned but depended upon hired labor for the continuous operation of the firm. Other than the operator, the family members worked only part-time and even then only intermittently.

Three-fourths of the firms interviewed produced a full line of bakery goods except biscuits, crackers and cracker-like goods. Of the remaining three bakeries, two produced pies exclusively and the third plant baked a full line of goods except for pies and cookies.

**Egg Products Used**

Shell, frozen, and solid eggs were being used by one or more of the firms reporting. Shell eggs in combination with frozen eggs were consistently used by one-fourth of the plants. The only firm dependent upon shell eggs as its primary form of egg was one of the two firms specializing in the production of pies. Otherwise, the volume of shell eggs used was negligible in the full-line bakeries.

Frozen eggs were used by all of the firms reporting. Eight of the plants used frozen eggs exclusively, three used a combination of frozen and shell eggs, and only one bakery was using egg solids in conjunction with frozen eggs. Four of the companies had experimented with premixes as a replacement for the inplant mixing process, but only two had found them successful. One firm was regularly preparing
yellow cakes from a premix, and the second was using a premix to substitute for the cream filling in pies manufactured during the summer months.

Two sizes of shell eggs, the three major forms of frozen eggs, and one form of egg solids were used by the responding bakeries. Large, grade A, shell eggs were utilized by two of the three firms reporting a consistent use of shell eggs. The third plant used only medium, grade A eggs. Size was not considered an important factor affecting the end product since eggs were added according to a formulated weight. Two other factors concerning size were important to the efficiency of production. The consistent use of only one size was desirable in order to eliminate any confusion which might occur from changing the habitual methods of operation. For example, in order to save labor and reduce tediousness, there may be a tendency to dispense with weighing and to break a predetermined number of shell eggs into the batches. Erratic changes in the sizes of eggs used for similar batches would necessitate a deviation from the normal operating procedure, and, depending upon the capabilities of the laborer, possibly result in a reduction in the labor output. If a smaller size of egg was to be used, especially "small" eggs, this would require a greater number of eggs to be handled and an increased amount of labor would be used as a consequence. Even though any increase in man-hours used might be more than offset by a reduction in unit egg cost, the tendency was to be more concerned about the use of labor than comparative egg prices.
Grades of shell eggs lower in quality than grade A were not desired because of the potential reduction in performance. No performance problems were reported. The shell eggs were used primarily for pie crusts, pie fillings, some cakes, and cookies. In most instances, meringues and other goods requiring the separation of yolk and albumen were made with frozen eggs.

Table 12.--Form, grade, and size of eggs used in small bakeries by number of firms, 1963

<table>
<thead>
<tr>
<th>Type and form of eggs used</th>
<th>Shell</th>
<th>Frozen</th>
<th>Egg Solids</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A-large</td>
<td>A-medium</td>
<td>Whole</td>
</tr>
<tr>
<td>Number of firms using</td>
<td>2</td>
<td>1</td>
<td>11</td>
</tr>
</tbody>
</table>

Of the plants reporting the use of frozen eggs, 11 used whole eggs, 6 used frozen yolks, and all 12 were using frozen albumen in their baking process. Fortified whole eggs, sugared and fortified sugared yolks were used to some extent by most of the bakeries. Whole egg solids were utilized by only one of the 12 plants.

At least one form of frozen eggs was used by all of the reporting plants, and five-sixths of the plants based almost all of their production on formulae using this type of egg. Major reasons, in order of importance, expressed for using frozen eggs in preference to other products were: (1) convenience, (2) uniform quality, (3) best all-around egg product, and (4) better dough. Convenience was
interpreted to mean labor-saving aspects of frozen eggs as opposed to shell eggs.

In some instances, more than one form of egg products was used for a particular end product. Usually they were used in separate parts of the sections of the particular good. In most instances, though, the bakers were utilizing only one form of egg for all of their output. For example, 67 percent of the firms used frozen eggs in all of their products and 33 percent used frozen eggs in most of their products. Shell eggs were used by one firm in its angel food,

Table 13.--Goods produced in small bakeries and the form of egg used, by number of bakeries using

<table>
<thead>
<tr>
<th>Product Produced</th>
<th>Total Plants Baking</th>
<th>Form of egg used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frozen</td>
<td>Shell</td>
</tr>
<tr>
<td>Breads</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Rolls</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Cakes</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Coffee cakes</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Cookies</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Pies</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Doughnuts</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Fillings</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Fillings</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Icings and toppings</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Meringue</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Other, misc.</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

aOne firm baked bread but used no egg product therein.
sponge, and layer cakes, and by two plants in their pies, pie fillings, toppings, and meringues. Two reasons were given for the use of shell eggs—the respondents felt that the goods "turned out" better, and that shell eggs were more convenient than frozen eggs when making small batches. The use of egg solids was even more limited than shell eggs. Only one firm used solids which were restricted to roll dough mixtures.

Ninety-two percent of the bakeries reported experiencing no problems with their egg products. One complaining firm reported difficulty in obtaining a uniform degree of rise in its end products from frozen eggs. One-third of the firms had experimented with egg solids in the past and had found them to be an unsatisfactory substitute for frozen eggs. Three-fourths of the experimenting firms stated simply that they "didn't work out," and one-fourth felt that their use reduced the moisture content of the end product to an unacceptable degree.

Ninety-two percent of the firms had made no changes in the types of eggs used during the 5-year period preceding 1963. One firm, which had been using shell eggs and experimenting with egg solids, had changed entirely from shell to frozen eggs. The plant owner considered the frozen product to be a cheaper source and equally as functional as shell eggs.
Volume Used

An estimated liquid weight of 103.3 thousand pounds of eggs was used by the eleven bakeries reporting their volumes during 1962. This amount was estimated to represent about 17.9 percent of the total egg consumption, excluding eggs in premixes, of the bakeries with less than 50 employees located in the metropolitan area.

Based on actual weights, the eleven plants purchased and used in their bakery goods about 11,409 pounds of shell eggs, 87,884 pounds of frozen eggs, and 1,300 pounds of whole egg solids during the year. These figures, respectively, represented 9.9 percent, 85.0 percent, and 5.0 percent of the total liquid weight of eggs used.

Only partial data were obtained on the breakdown of the total amount of frozen eggs used into the forms of whole, yolk, and albumen. Therefore, neither the total liquid egg equivalent nor the percentages of each form used could be accurately determined. However, those firms supplying a complete breakdown used considerably more of both frozen albumen and whole eggs than the total amount of plain, sugared, and fortified yolks. In most cases, whole frozen eggs were used to a greater extent than frozen albumen. The volume of egg solids used was entirely limited to whole egg solids.

The average liquid weight of eggs used amounted to 9,396 pounds per firm for the year. This average represented a range of annual use.

\[ \text{Liquid weight} = \text{whole-egg solids reconstituted using a 4:1 unit ratio, a 10 percent reduction of shell egg weight to exclude shell weight, and frozen egg weight based upon total of all components reported.} \]
Table 14.--Estimated annual volume of eggs used by 11 Columbus bakeries--each employing less than 50 persons--by form of egg used, 1962

<table>
<thead>
<tr>
<th>Annual use</th>
<th>Total liquid weight</th>
<th>Type of eggs used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shell</td>
<td>Frozen</td>
</tr>
<tr>
<td>Total used, by all plants (lbs.)</td>
<td>103,352</td>
<td>11,409</td>
</tr>
<tr>
<td>Number of firms using</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Average weekly use; all plants (lbs.)</td>
<td>1,988</td>
<td>219</td>
</tr>
<tr>
<td>Percentage of total egg weight</td>
<td>100.00</td>
<td>9.93</td>
</tr>
<tr>
<td>Average used per firm per year (lbs.)</td>
<td>9,396</td>
<td>1,037</td>
</tr>
<tr>
<td>Average used per firm per week</td>
<td>180.3</td>
<td>19.9</td>
</tr>
<tr>
<td>Range</td>
<td>60-750</td>
<td>0-135</td>
</tr>
<tr>
<td>Average annual use per employee (lbs.)</td>
<td>1,282</td>
<td>142</td>
</tr>
<tr>
<td>Average weekly use per employee</td>
<td>24.66</td>
<td>2.73</td>
</tr>
<tr>
<td>Range</td>
<td>10.40-50.0</td>
<td>0.19-28</td>
</tr>
</tbody>
</table>

\*Estimation based upon either annual, monthly, or weekly data as supplied by the respondent. In most cases average use was reported; in other cases the reported fluctuations were considered in the estimate.

\*Liquid weight: Dried whole eggs; 1 unit of dried plus 3 units of water = 4 units of liquid egg. Formula for reconstitution obtained from supplier of egg solids. Shell eggs; total weight less 10 percent deduction for shell and inner membrane.

\*Shell egg weight based on: 1 dozen large = 24 ounces; 1 dozen medium = 21 ounces.
with a lower plant limit of 3,120 pounds to an upper limit of 39,000 pounds. The average weekly use per bakery was 180.3 pounds. Slightly less than 81 full-time employees were employed by the eleven firms, thus the average annual weight used per employee was 1,282 pounds, ranging from 541 pounds to 2,600 pounds.¹ The weekly average weight used per employee amounted to 24.7 pounds, ranging from 10.4 to 50.0 pounds per employee.

On an actual weight-by-type of egg, the bakeries annual use averaged 1,037 pounds of shell eggs, 7,989 pounds of frozen eggs, and 118 pounds of egg solids per plant. The weekly utilization of eggs per plant averaged 19.9 pounds of shell eggs, ranging from 0 to 135 pounds; 153.6 pounds of frozen eggs, ranging from 40 to 750 pounds; and 2.27 pounds of dried eggs, ranging from 0 to 25 pounds per plant. The average amount of eggs used weekly per employee was 2.73 pounds of shell, ranging from 0 to 19.28 pounds; 20.96 pounds of frozen eggs, ranging from 6.43 to 30.0 pounds; and 0.3 pounds of dried eggs, ranging from 0 to 8.33 pounds per employee.

All of the bakeries reporting volume data produced a relatively full line of goods with two exceptions. The two excepted firms were specializing in the production of pies. Their volume of eggs used was slightly greater than those firms producing a full line of goods. Only three firms purchased shell eggs for baking. Their volume ranged from one to three 30-dozen cases per week, averaging 1.7 cases per

¹The upper limit of the range is represented by the firm using a two to one proportion of dried to frozen eggs.
plant per week. Egg solids were used by only one of the reporting firms at a rate of one can or 25 pounds per week. Frozen eggs were utilized at a rate of about 5.1 30-pound cans per plant per week.

Only one-fourth of the firms reported an increase in the amount of eggs presently being used in comparison to the previous 5 years of production. On the other hand, no decreases were reported. In one case where the volume of eggs used remained unchanged, and there had been an increase in production and sales of egg-containing products, the firm had resorted to the substitution of premixes for about 15 percent of its output. These premixes had an undetermined amount of dried eggs in them.

A large majority of the firms experienced seasonal fluctuations in the amount of eggs used. Less than 17 percent of the plants reported no occurrence of seasonal fluctuations. (The latter firms did, however, experience weekly fluctuations in sales, especially during the holiday periods, summer months, and between payday and non-payday weeks. This suggests seasonal fluctuations in sales, production and, consequently, egg use.) The days prior to and during the holiday periods are expected by all of the firms to be an increased sales period. Some weeks during the summer months, especially non-payday weeks, the sales of goods were expected to be below normal. No reasons were given for these expected reductions except the lack of extra money and climatic conditions.

Over 83 percent of the firms reported decreases in the volume of eggs used during the summer and increases occurring during the fall
and winter months. The summer decreases ranged from "very little" to a substantial reduction of from 20 to 30 percent. In most cases, the answers were relative to the period during which they were interviewed. In no case was there actual volume data presented. Customer vacations and heat were the expressed opinions for the reductions of consumption during the summer months. And the lack of vacations, colder weather, school lunches, and festive occasions were the reasons for increased consumption during the fall and winter months.

Procurement Practices

Four types of suppliers were servicing the bakeries, each differing in their basic methods of operation. These sources were grocery store, huckster, farmer, and processor-distributors of frozen and dried eggs.

They seemed not to know—and not too concerned about knowing. It is suggested that their methods of purchasing and receiving supplies rendered such knowledge of volume data unimportant. Suppliers serviced the establishments from one to two times a week, especially catered to their expected needs just prior to periods of increased production, and remained capable and willing to supply immediate on-call orders.
Table 15.--Source of egg supply for small bakeries, by type of eggs supplied, agreement used, and number of bakeries using

<table>
<thead>
<tr>
<th>Source</th>
<th>Type of eggs used</th>
<th>Type of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shell  Frozen</td>
<td>Dried</td>
</tr>
<tr>
<td>Grocery store</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Farmer</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Huckster</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Processor-distributor</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>(branch outlet)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Shell eggs were purchased from three types of distributors--a grocery, a huckster, and a farmer. Sixty percent of the shell eggs used were supplied by a huckster (jobber) because his eggs were comparable in quality with competing firms and his price was generally lower. Twenty percent of the shell eggs were supplied by a farmer because the respondent felt that he supplied an egg of "excellent quality" and at an "excellent price." The remaining 20 percent of shell eggs were purchased from a nearby grocery store. The latter source was patronized because the baker "knew" the eggs were purchased directly from a farmer and consequently, they were the "freshest eggs available."

One hundred percent of the frozen and solid eggs purchased were supplied by the local branch outlets of the major egg-breakers. These outlets are frozen food sales branches owned by nationally operating food processors. All of the bakeries purchased and received supplies
directly from the branch outlets; whereas, several of the larger wholesale bakeries previously mentioned were buying directly from the outlet's parent organization's sales headquarters.

When asked why they bought frozen eggs from their suppliers, 78 percent mentioned some factor pertaining to quality as their first remark. Such responses as excellent, good, uniform quality or product, no problem with product, and product does the job were the phrases used and assumed to pertain to the quality of the product. The other 22 percent quite explicitly pointed out that price was the main reason they purchased from their present supplier. The latter respondents reasoned that all of the competing companies' products were equal in quality and could be interchanged with complete confidence. Price was mentioned as a second response by 22 percent and service by 11 percent.

Sixty-seven percent of the respondents issued a second response which was still primarily concerned with the physical properties of the egg and their functioning. All of the bakeries purchased frozen goods other than frozen eggs from their respective suppliers; therefore, the satisfaction received from these goods would probably have some bearing on a particular firm's selection of a source of supply.

Written agreements were not extensively used by the baking firms. One-fourth of the firms consistently negotiated contracts with the processor's branch outlets for their frozen egg supply. These contracts ranged in duration from 90 days to one year. The remaining firms, all of which purchased frozen eggs and four bought either shell or dried eggs, had no written agreement with their suppliers. Even
though some of these plants had used a contract in the past, they reasoned that a contract was not needed. Alternate suppliers could easily be obtained if their present supplier's prices became unreasonable or there were any serious quality or service problems.

The contracting firms purchased an average weekly volume which was about 12 percent lower than the average volume of eggs used by all plants. Yet, the reasons for contracting were: (1) to obtain the best available price by soliciting competitive bids and (2) to be assured of an adequate and constant supply. These contractors had not changed suppliers during the past 3 to 5 years, which may indicate either: (1) no significant price difference among suppliers, (2) a lessening of the relative importance of price to dependable quality and service on either eggs or other frozen goods, or (3) a reluctance of suppliers to issue contracts on such small volumes.

In over 91 percent of the cases, eggs were being delivered to the bakeries at least once a week. Over 58 percent of the firms received frozen eggs twice a week, 33 percent once a week, and 9 percent received delivery once a month. The lack of adequate inplant storage for larger amounts of supplies and the frequency of orders for other frozen foods from the suppliers were responsible for the frequency of delivery. Shell eggs were also either delivered or picked up from once to twice a week depending upon the available storage space.

Changes in the sources of supply did not frequently occur among the bakeries. Ninety-three percent of the plants had not changed
suppliers during the 3 years prior to the interview. Thirty-four percent of the total establishments had remained constantly with their respective suppliers for over 5 years. The reasons for the occurrences of change varied from no response and don't know to offensively odorous eggs. In most cases, the primary reasons for changing suppliers were associated either with price considerations, dissatisfaction with the product, or both. Since all of the firms purchase other frozen foods in addition to eggs from their suppliers, the satisfaction received from these goods would probably be taken into account when contemplating a change of suppliers.

No other particular problems were mentioned by the respondents pertaining to their sources of supply. The suppliers maintained a reliable delivery service and never ran out of eggs. Practically all of the firms were confident of being able to call their respective suppliers and receive an immediate delivery in the even they ran short of eggs. In every case, assuming a change in a source of supply was necessitated, the firms would continue to purchase their eggs from a distributor of the same type.

Price Determination

In three-fourths of the cases, purchase prices were established without benefit of an agreement by the supplying firm. One-fourth of the firms were using contracts, issued presumably on a competitive price basis. Most of the firms occasionally checked with egg sources which were in competition with their own supplier to determine the "fairness" of their purchase price. There was an indication of
occasional bargaining between the buyer and seller, especially during periods when the present supplier's prices were higher than one of his competitors. However, in general, the firms' buying prices were determined by the supplying firms with no bargaining taking place.

Most of the payments for supplies were made on delivery of the product. One-third of the firms rendered payment on a calendar period, ranging from once per week to once per month. In case the eggs were delivered to a third firm storage area, they were paid for net-10 days.

The information received concerning the prices paid for particular types of egg products was inadequate for detailed analysis. A variety of responses was received, varying from an unknown price to an average price for all types of frozen eggs contracted. Several responses were more general. For example, two firms reported frozen whole egg prices paid to be less than 31 cents per pound, a third reported about 31 cents, and a fourth stated that he never worried about prices since they were all about the same.
USE OF EGGS IN THE CONFECTIONERY INDUSTRY

Respondents from 10 of the 13 confectionery firms were inter­viewed. In general, the persons interviewed were not very responsive to the interview. Many were more interested in the operations of their competitors, which sometimes made the going quite "sticky."
The lack of responsiveness was in direct contrast to the other types of industries interviewed. However, some indication of a similar experience was reported by Enochian's national study of confectioners.  

Description of Firms

According to the previously mentioned sources of information, as supplemented by the interviews, a majority of the confectioneries were relatively small operations based upon the number of people employed. Twelve of the 13 plants employed approximately 183 people, ranging from 3 to 73 per plant, and averaging about 15.3 per plant. The work force consisted of both men and women. The work force was comprised of about 73 percent women and 27 percent men. Female employees outnumbered male employees in each of the plants.

A majority of the firms employed less than the average number of people. Ten of the 12 firms had a range of from 3 to 14 employees, averaging about 6.8 persons per plant. Still, the female employees comprised about 75 percent of the total and were predominate in each plant. The two large firms each averaged 57.5 employees.

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Table 16.--Employment characteristics of 12 of the Columbus area's 13 confectionery establishments

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ALL PLANTS:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of establishments</td>
<td>--</td>
<td>--</td>
<td>12</td>
</tr>
<tr>
<td>Number of employees</td>
<td>49</td>
<td>134</td>
<td>183</td>
</tr>
<tr>
<td>Percentage by sex</td>
<td>26.8</td>
<td>73.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Average per plant</td>
<td>4.08</td>
<td>11.2</td>
<td>15.3</td>
</tr>
<tr>
<td>Range by plant</td>
<td>1-23</td>
<td>2-50</td>
<td>3-73</td>
</tr>
<tr>
<td><strong>EXCLUDING LARGEST PLANTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of establishments</td>
<td>--</td>
<td>--</td>
<td>10</td>
</tr>
<tr>
<td>Number of employees</td>
<td>16</td>
<td>52</td>
<td>68</td>
</tr>
<tr>
<td>Percentage by sex</td>
<td>25.0</td>
<td>75.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Average per plant</td>
<td>1.6</td>
<td>5.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Range by plant</td>
<td>1-3</td>
<td>2-11</td>
<td>3-14</td>
</tr>
</tbody>
</table>

*Recourse made to directory of manufacturers where data from interview was not available.

*No data on one establishment.

*Excluding the two largest confectioneries in terms of number of employees.
All of the firms interviewed were producing candies; however, one company was producing only caramel candy for its popcorn products, and a second company was in the ice cream manufacturing business. With the exception of the caramel candy producer, all of the firms were making chocolate and chocolate-coated products as well as cream products, all of which utilized egg or egg substitutes. A majority of the plants produced a wide variety of other candies, such as caramels, hard candies, jellies, and similar products.

**Egg Products Used**

Only four of the ten firms interviewed used egg products in their inplant mixing process. Five of the remaining six plants reported using no egg products; instead, they relied upon premixes to substitute for their own mixes. The caramel plant used no egg products.

Egg albumen was the only type of egg product used by the four firms mixing their own ingredients. One firm utilized shell egg albumen while the other three relied upon solid egg albumen. The shell egg albumen was utilized mainly in creams and nougats. The only reason given for using shell eggs in preference to other forms was that they had never tried any other forms of eggs or egg substitutes and were quite satisfied with the performance of shell eggs. The reasons given by the remaining three companies for using solid albumen were: (1) It was more convenient to handle and store than either frozen or shell eggs, (2) It was cheaper in the long run, and (3) An excellent product was obtained from the dried product. None of the firms reported experiencing any problems with egg solids.
A variety of reasons was given by the five plants for using ready-mixed products for manufacturing candies. The three main reasons given were: (1) The mixes were easier to handle, store, and had good keeping qualities, (2) A "good" and uniform product was obtained from their use, and (3) The mixes were cheaper than inplant mixing.

All of these companies produced relatively small amounts of candies. Larger than normal amounts were produced only intermittently before holidays. Although it could not be concluded from the responses given, probably the convenience in handling, storing, and mixing were the main reasons for using premixes by the small candy producers.

No estimates could be drawn from the responses concerning the volumes of egg-containing premixes being used. Most of the confectioners did not know whether or not eggs were being used in the premixes.

All of the companies reported wide fluctuations in the amounts of premixes used from season to season and from year to year. Generally, from 200 to 250 pounds of premix were ordered at one time and kept on hand until used before additional amounts were ordered. With only one exception, all of the premixes were purchased from out-of-town suppliers, primarily from Chicago, Illinois. One local supply house was occasionally used as a source of supply, depending upon its prices in comparison with other suppliers.
Volume Used

An equivalent of approximately 83,000 pounds of liquid albumen was used during 1962 by four firms requiring egg products in their inplant mixing process.\(^1\) About 20.8 thousand pounds were utilized per plant, equaling almost 640 pounds per employee. Slightly less than 1.5 percent of the albumen was separated from shell eggs, and the remainder, 98.5 percent, was reconstituted from the dried albumen or albumen solids.

Procurement Practices

The single firm using shell egg albumen utilized on an average about 45 pounds of albumen per month. The eggs were separated within the plant and the yolks were utilized by an affiliated restaurant for baking and cooking. The volume of eggs used fluctuated considerably, especially during the holiday periods when the amounts increased by about 50 percent.

The shell eggs were purchased from a local farmer because the respondent considered the eggs to be the "best" and always fresh. The farmer had been utilized as a source of supply for more than 5 years. No problems of any type were reported concerning the source of supply or the supply; therefore, there were no reasons for changing suppliers. Delivery of the eggs was made twice a week, the schedule of delivery being determined by the needs and policies of the

\(^1\) Liquid albumen equivalent is based on the formula: 1 pound of albumen solids plus 6.5 pounds of water = 7.5 pounds of liquid albumen.
affiliated restaurant. Since the restaurant kept a supply of eggs on hand at all times, the candy plant could obtain emergency needs from this source.

The three firms using albumen solids purchased from companies which were in the egg products processing business. Two of the three plants had purchased from the same source for more than 5 years. Their respective supplier's products had been found to be completely satisfactory, and the difference between their prices and those of competing companies was not great enough to warrant a change. The third plant using albumen solids changed suppliers depending upon the lowest price available. The respondent considered the competing products to be of equal quality and the amounts were purchased on an on-call basis; therefore, the price of the product was a very important factor when determining the supplier.

All three firms purchased eggs and had them delivered as they were needed rather than on a scheduled basis. They considered eggs to be an insignificant input relative to their other purchases and, as such, needed no scheduled deliveries.

No particular problems were reported concerning their source of supply. Each firm was confident that upon running out of eggs they could either call their supplier or a competing local supply house and obtain the needed eggs.

**Price Determination**

The prices paid for shell eggs were determined by the supplying firm. The purchase price changed as the local market prices changed.
This was due to the pricing methods of the supplier rather than any agreement between the firms.

Egg solids' prices were also determined by the supplying firms. Two of the respondents accepted the quoted prices at the time of purchase without benefit of either bargaining or an agreement. The firm using the largest volume of egg solids purchased its supply on a bid basis, accepting the lowest bid tendered by the competing suppliers.

Except for the firm soliciting bids on egg solids, written agreements were not used by the local confectioneries. Instead, the plants depended upon a mutual understanding with the supplier concerning the price, quantity, and delivery. Payment also was generally made upon delivery of the product, or net-10 days, mainly because there was no reason for extended credit. The amounts purchased were small and the incidence of purchase infrequent.
USE OF EGGS BY THE MANUFACTURERS OF MISCELLANEOUS FOOD PRODUCTS

A total of 18 dairy product companies and 8 manufacturers of miscellaneous food products were presumed to be potential users of eggs. A telephone call was made to a responsible person within these companies to determine their actual use of egg products. If eggs were used, the companies were subsequently interviewed in person.

Nine of the 18 dairy product companies were manufacturing either eggnog or French ice cream, both of which contained eggs. Seven dairy companies made eggnog for sale during the Thanksgiving and Christmas seasons. However, all of the eggnog makers were using a premix as a substitute for eggs in the inplant mixing process. The use of premixes was generally considered more convenient, to have greater stability and uniformity, and to allow fewer chances of loss in the manufacturing process.

Seven dairy companies manufactured ice cream, but only two large companies manufactured a French ice cream in which either fresh, frozen, or dried eggs were used. Commercial emulsifying and stabilizing agents other than eggs were being used in the regular ice cream. Two of the most often mentioned substitutes were monoglycerides or diglycerides. Frozen custard, French ice cream, and French custard ice cream are required by Ohio Health Department regulations¹ to contain a minimum of egg yolk and be labeled as such. One company used frozen egg yolk, and the second used a premix egg yolk solid

combination in the manufacture of these custards. In both cases, the amounts of eggs used were insignificant.

Five additional firms were interviewed which were producing sauces, salad dressings, mayonnaise, vegetable mixtures, vegetable salads, or noodles which contained either frozen, dried, or shell eggs.

Description of the Firms

The five miscellaneous food product manufacturers were relatively small operations based upon the number of people employed. The total number of employees per plant ranged from 6 to 82 people, totaling 144 persons for all five plants, and averaging about 29 per plant. The work force consisted of both men and women, with the male employees predominating. About 62.5 percent of the work force was comprised of men and the remaining 37.5 percent by women. The male employees outnumbered the female in the manufacturing areas using tins and glassware as a container for products, such as sauces, salad dressing, and mayonnaise. The opposite held true in those firms producing the lighter products, such as noodles and vegetable salads which were packed in paper or cellophane containers.

All of the firms were independently owned and operated by local residents. Four of the firms wholesaled their products in interstate channels. The fifth firm primarily utilized local wholesale and retail outlets in the distribution of their products.
Egg Products Used

Two of the five firms used only shell eggs in their end products. The shell eggs were primarily used as garnishes and fillers in vegetable salads and as binding agents for meat sauces. Of the remaining three plants, two used frozen yolks exclusively, and the third used only egg solids. Egg albumen solids were used as a binding agent, and whole egg solids were used as a primary source of protein and coloring and as a secondary source of flavoring for concentrated vegetable products. The frozen egg products were used as an emulsifying, stabilizing, coloring, and flavoring agent in the manufacture of mayonnaise base products, sauces, and egg noodles.

Each of the firms used a single, specific form of eggs or egg products allowing no deviations except in emergencies. However, the respondents were very conscious of potential product shortages. They, therefore, carefully guarded against such occurrences either by keeping extra egg products on hand or by maintaining an immediate on-call source of supply available.

The users of shell eggs utilized mostly grade B large and ungraded, unclassified eggs. The grade B large eggs were used primarily as garnishes for vegetable salads and were considered to be the best type for such uses. First, the cost of grade B eggs was somewhat less per egg than that for grade A large. Second, in grade B eggs the yolk tended to be spread over a greater area of the egg, thus allowing a greater number of egg slices containing yolk. And third, large egg slices enhanced the overall appearance and value of the salad in terms
of consumer reaction. The ungraded, unclassified shell eggs were used as binding agents because their performance was adequate and they were the cheapest type of fresh shell eggs available.

Frozen eggs were used in preference to either shell eggs or egg solids for two major reasons: (1) The firms involved had experimented with egg solids and had found their emulsifying and color imparting qualities inferior to the frozen product. (2) The frozen product was substituted for shell eggs because they were "convenient," easier to handle, and resulted in an excellent end product.

Where egg solids were used, the reasons given for their preference over frozen eggs were similar to those reasons for preferring frozen to shell eggs: (1) After all of the production factors of unit egg cost, handling, storage, and loss were considered, the dried product was believed to be a cheaper source of egg than either frozen or shell eggs and (2) The functional properties of egg solids were adequate.

None of the firms' respondents reported having any problems with their respective forms of eggs. Those using frozen eggs, however, mentioned the possibility of bacterial contamination as being a serious potential problem. As a consequence, the inplant storage and handling of frozen eggs was kept to a minimum operating and emergency level.

Except for gums in diet dressing, substitutes for eggs were not being used in the products manufactured. In this one instance, gum was considered a necessary substitute in order to keep the caloric content of the diet dressing to a calculated minimum.
Volume Used

A total of approximately 38,305 pounds of shell eggs, 587,000 pounds of frozen eggs, and 64,000 pounds of egg solids was used during 1962 by the five firms manufacturing miscellaneous food products. On an estimated liquid weight basis, about 1,057,000 pounds of eggs were utilized by all plants during 1962. Of the total liquid weight used, 56.4 percent, or 587,000 pounds, were frozen plain yolk; 41.4 percent, or 438,000 pounds, were either albumen or whole egg solids; and 2.2 percent, or 32,000 liquid pounds, were from broken-out shell eggs.

The shell eggs were used mostly for garnishing and as a filler; the frozen plain yolks for salad dressing and mayonnaise base products; and the albumen and whole egg solids for their binding properties and protein content in high protein food mixtures.

Procurement Practices

Four different types of distributors were being consistently used as a source of egg supply by the five firms studied. A shell egg huckster and an assembler-distributor were supplying all of the shell eggs used. More than 94 percent of the shell eggs used were supplied by the latter type of firm. Each of the respondents utilizing shell eggs had taken from these respective suppliers for more than 5 years and reportedly had encountered no problems. The huckster delivered eggs once

\[\text{Liquid weight} = \text{1 case of shell eggs} - 39.5 \text{ pounds}; \text{frozen egg weight} = \text{total of all components reported}; \text{egg solids} = \text{whole egg reconstituted using a 4:1 unit ratio}; \text{albumen reconstituted using 7.5:1 unit ratio.}\]
a week and the assembler-distributor three times a week. Each supplier independently established his own delivery procedure. The suppliers never ran out of eggs and would deliver on-call supplies.

Assuming their supplier either went out of business or otherwise discontinued supplying the respondents, their future source was purported to be other firms of a type similar to their present suppliers. The reasons for patronizing their present suppliers were rather inconclusive—good eggs for one; good service and large supplier by the second.

A liquid weight of slightly more than 1,025,000 pounds of egg products was used by the three manufacturing users during 1962. More than 96 percent of the total volume were supplied by nationally operating egg processor-distributors. A local meat packer-distributor supplied the remaining 4 percent of egg products. All of the respondents had purchased from their present suppliers for more than 5 years. All of the eggs were supplied under contractual arrangements. About 96 percent of the volume used were supplied directly by truck from the egg processor's central warehouses, and 4 percent from a local cold storage depot.

The initial reason given by the respondents for purchasing from their suppliers was that they received an excellent product—a product that no other supplier could equal. The services received from their suppliers were considered satisfactory; and, in general, they had no problems with their suppliers. All of the manufacturing firms were receiving technical information from their suppliers but were not receiving any advertising materials or other advertising assistance.
Price Determination

The prices paid for shell eggs by the manufacturing users were determined solely by the supplying firm. No agreements were in effect between the buyers and sellers. However, the buyers occasionally checked the local wholesale prices and expected their suppliers to stay within the market price. The purchase prices changed in line with the local market prices. This was due, however, to the pricing practices of the supplier rather than by agreement between the firms.

Payments to the huckster for shell eggs were made on delivery; whereas, the assembler-distributor was paid once a month by the buyer.

A different pricing method was used by each of the three egg products users. The largest volume user contracted in January of each year for specific amounts to be delivered in certain volumes on a weekly basis and at an average annual price. Payments for these eggs were made 30 days - net 10 after delivery. The second largest volume user of egg products contracted each month for the following month's supply. This firm alternated the purchases monthly between two suppliers. The suppliers generally set the buying price. However, the offered price was checked against the second supplier's price and against the Chicago market price. When the seller's price was believed to be "out of line," some bargaining resulted between the two parties. Not often were the monthly alternations of purchases between sellers disrupted because their prices were rarely dissimilar. When there were significant differences in prices offered by the supplying firms, the firm located nearest the buyer was given the "buying edge."
was done primarily because the least distant firm was depended upon in case of an emergency in technical problems or a shortage of supplies. Payments to both firms were made on delivery--net 10 days.

The smallest volume user of egg products contracted with only one supplier and for a 90-day period. The price was set by the supplier without benefit of either bargaining or bidding. The eggs were stored in a public cold storage area and the supplier delivered on an on-call basis with a once-a-week maximum. A price was established for the 3-month period which included free storage for the first month. Any eggs remaining in storage after the initial 30-day period accumulated storage charges of one-half cent per pound per month. The terms of payment were on delivery--net 10 days.
Chapter III

DISTRIBUTION OF EGGS THROUGH PRIMARY RETAIL OUTLETS

PROCEDURE

The primary retail outlets were those retail business establish­ments distributing eggs, primarily in their natural form, directly to the ultimate consumer. Such outlets included the corporate, coop­erative, and voluntary chain grocery stores, dairy specialty chain stores, independent grocery stores, confectioneries, retail milk distribution companies, and the farmers' market.

Determination of Outlets

The major sources of data used to determine the universe of primary retail outlets were the Dispatch Printing Company's Route Lists\(^1\) and the local Ohio Bell Telephone Directory.\(^2\) The route list reported the names, addresses, and organizational characteristics of the retail outlets and classified them into four groups.

One unavoidable inadequacy was attributed to the route list. During the period of compilation and publication of the list, changes occurred in the number of businesses in operation and their affiliation and classification. In order to denote the changes in the


136
number of operations, the latest available telephone directory was used. It was assumed that most of the firms would have telephones. The directory lists the names, addresses, type of business, and, in many instances, the affiliation of the operation.¹

Utilizing the aforementioned directories, the universe of potential primary retail outlets was determined to be: (1) 191 corporate, cooperative, voluntary, and dairy specialty chain grocery stores, (2) 314 unaffiliated or independent grocery stores, (3) 63 confectioneries, (4) 15 milk distribution companies, and (5) 1 farmers' market. The total number of potential primary retail egg outlets was approximately 584.

Stratification of Outlets

The group classifications A, B, C, and confectioneries, were based upon the store's relative completeness of stock. For example, the corporate chain grocery stores were assumed to carry complete stocks comprising many lines of goods. All other groceries and confectioneries were classified into groups using the chain store supermarket's stock as a standard. The following categories were determined:²

1. The "A" group were considered to be high-grade stores carrying complete stocks. These stores did not necessarily have to

¹The number of changes were relatively few, and mostly in the chain store operations where affiliation and classification were easily determined.

²Dispatch, Route List, pp. 2, 3.
maintain the volume of stock carried by the supermarket but had to have "some" stock of all lines of goods. The major lines were groceries, meats, and frozen food.

(2) The "B" stores were medium sized carrying limited stocks.

(3) The "C" stores were small stores with a small volume of business.

(4) Confectioneries were small stores with a small line of staple groceries.

The definitions used by the route list were vague. However, based upon the sample interviewed, there were definite differences between the groupings in their completeness of stock and volumes of business. It was concluded, however, that the groupings were reasonably accurate and adequate for sample stratification.

A breakdown of the universe from which the sample was selected is shown in Table 17.
Table 17.—The universe of primary retail outlets for eggs by affiliation and classification, 1962

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Classification</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Confectionery</th>
<th>Specialty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td></td>
<td>39</td>
<td>90</td>
<td>185</td>
<td>63</td>
<td>0</td>
<td>377</td>
</tr>
<tr>
<td>Cooperative and voluntary chain</td>
<td></td>
<td>38</td>
<td>21</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>69</td>
</tr>
<tr>
<td>Corporate chain</td>
<td></td>
<td>73</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>49</td>
<td>122</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>150</td>
<td>111</td>
<td>189</td>
<td>63</td>
<td>49</td>
<td>568</td>
</tr>
</tbody>
</table>

a Independent specialty stores were listed as confectioneries.

b Includes six cooperative chain stores of unknown size.

c Dairy company retail store outlets.

Seven of the 11 cooperative, corporate, voluntary, and dairy specialty food store chains had centralized egg procurement programs in which all of the affiliated stores participated. The four food store chains with nonparticipating affiliated stores were included in the independent and confectionery store sample. The 15 milk distribution companies and the farmers' market were enumerated and included in the discussion on wholesale outlets.

Sample Selection and Survey

Data for all of the 122 corporate chain retail stores were obtained. Seventy-three of these stores were under the ownership of Colonial Stores, Incorporated, The Great Atlantic and Pacific Tea
Company, Kroger Company, and the Big Bear Company. Forty-nine stores were owned by the Isaly and Lawson dairy companies. Data for one voluntary chain store group of 12 stores was also obtained. These seven chain groups operated a total of 134 stores and, as a group, are referred to as chain stores in the discussion.

For the purpose of sample selection, the stores affiliated with the remaining four cooperative and voluntary chains which had no central egg procurement program were included in the independent or unaffiliated category of stores. Using this technique, a total of 434 retail store outlets was estimated to comprise the independent group. The independent stores were further delineated into five classifications: (1) Group A, 65 stores; (2) Group B, 101 stores; (3) Group C, 189 stores; (4) 63 confectioneries; and (5) an unclassified category in which there were 6 stores.

A sample of 101 stores was randomly selected from the census of independent stores and the management personnel interviewed. In accordance with the previously mentioned guidelines, a greater proportion of the larger stores in groups A and B were selected. The sample was comprised of 37 stores from group A, 24 stores from group B, 27 stores from group C, and 13 stores from the confectionery and unclassified group. Respondents of these establishments were personally interviewed during the autumn of 1962 using a prepared schedule.

In summary, the schedules obtained represented 100 percent of the metropolitan area's corporate and voluntary chain organizations
which had centralized egg procurement programs during 1962. Eighty-five supermarkets and 49 dairy specialty stores were represented by this group. Of the remaining 434 independent stores, cooperative and voluntary chain stores and confectionery stores, about 21 percent were represented by the sample. The sample represented about 57 percent of group A, 24 percent of group B, 14 percent of group C, and 19 percent of the confectioneries and unclassified stores.

Except for the sections where it was necessary to condense the quantitative data, the primary retail food outlets were separated into two major categories for the purpose of discussion. The first category, the retail grocery store chains, included one voluntary chain, four corporate food store chains, and two dairy specialty store chains which had central egg procurement programs and in which all of the affiliated stores participated. This group represented 134 stores. The second category, called the independent stores, included the unaffiliated grocery stores and the cooperative and voluntary food store chains which either did not have central egg procurement programs or had affiliated but nonparticipating stores. The independent stores included 314 unaffiliated stores, 27 cooperative stores, 30 voluntary chain stores which represented four chains, and 63 confectioners totaling 434 establishments.

To enumerate each establishment, either the owner or manager was personally contacted within his store and subsequently interviewed. Of the 101 schedules obtained, 89 were considered complete schedules, 3 were incomplete but usable, and 9 schedules were not usable.
OPERATING CHARACTERISTICS OF RETAIL STORES

No attempt was made to determine the legal form of each of the 12 voluntary chain stores which were grouped with the corporate chains for discussion. The six remaining chain groups were each incorporated. Of the 89 independent stores studied, 82 were reportedly proprietorships, 5 partnerships, and 2 stores were corporately owned. Sixty-five stores of this group were unaffiliated and 23 were affiliated with either a voluntary or cooperative chain store group. A majority of the affiliated stores were classified as carrying a complete line of grocery goods. Only seven stores from this group were classified as "B" stores and two "C's".

Employment

The 88 stores from which the number of employees were obtained had a total of 390.5 full-time equivalent employees. A majority of the businesses had part-time employees. These data were converted to full-time equivalents using a 40-hour working week as a standard full-time work week. Table 18 depicts the differences between the four groups of independent stores in number of employees.

Table 18.--Average employment in independent grocery stores, by store class

<table>
<thead>
<tr>
<th>Item</th>
<th>All groups</th>
<th>Store class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Average number of employees</td>
<td>4.44</td>
<td>7.4</td>
</tr>
<tr>
<td>Range of total employees</td>
<td>1-19.5</td>
<td>1-19.5</td>
</tr>
</tbody>
</table>
As might be expected, the larger stores, in terms of completeness of stocks, employed the most people. The number of employees declined as the stores became smaller. However, two employees were the minimum number in a majority of the stores. In each group, at least one store reportedly employed only one person.

Line of Goods Sold

Data were obtained on each store's completeness of line of goods during the interview. Eight major lines of stock (groceries, fresh meats, dairy products, produce, frozen foods, packaged meats, beer and wine, and sundries) were observed and rated as to their presence or absence. For those lines of goods which were being merchandised, the store's completeness of stock relative to a completely stocked grocery store was determined. This was performed both by questioning the proprietor and by personal observation.

Three Columbus food chain supermarkets, the Olentangy River Road A & P and Kroger stores, and the Lane Avenue Super Duper store, were considered to be completely stocked stores and were used as the standard for rating of the independent grocery stores. Each store was enumerated and rated, not according to its volume of stock, but according to whether or not each line of goods contained a majority of the items which comprise a complete line. For example, a particular store would be classified as carrying a complete line of fresh meats if it regularly stocked freshly cut beef, pork, and poultry and miscellaneous processed meat products. Mutton and fish were
available in most of the groceries where the three major meats were handled. However, no attempt was made to determine the availability of these products.

If a complete line of fresh meats was handled, the store was given a numerical rating of five; those handling "most" fresh meats, four; "many" fresh meats, three; "few" fresh meats, two; "very few" fresh meats, one; and a rating of zero if fresh meats were unavailable. These numerical ratings were applied in a similar fashion to each of the six other major lines of food products and sundries handled. By determining the raw scores and means, these ratings provided a method of comparing the operations between the different groups of stores (Table 19).

A large majority of the group A stores carried complete stocks of the seven major lines of food store products. Slightly less than one-third of these stores sold beer and wine. Most of the A group stores kept complete stocks of sundries and packaged meats. The remaining major lines, in order from the highest to lowest score, were groceries, dairy products, fresh meats, produce, and frozen foods.

The group A stores carried more complete stocks of all items, except sundries, than did the remaining three store groupings. The completeness of stocks carried was progressively less for the groups B, C, and confectionery stores. A large proportion of the group C stores and confectioneries carried neither fresh meat, produce,
Table 19.--Score of independent grocery stores according to completeness of line of product, by product line and store class

<table>
<thead>
<tr>
<th>Class and item</th>
<th>Score by line of product handled</th>
<th>Number of stores handling beer and wine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stores surveyed</td>
<td>Grocers</td>
</tr>
<tr>
<td>Group A:</td>
<td>34</td>
<td>x</td>
</tr>
<tr>
<td>Average score</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Range</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Group B:</td>
<td>21</td>
<td>x</td>
</tr>
<tr>
<td>Average score</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Range</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Group C:</td>
<td>25</td>
<td>x</td>
</tr>
<tr>
<td>Average score</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Range</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Confectioneries:</td>
<td>10</td>
<td>x</td>
</tr>
<tr>
<td>Average score</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Range</td>
<td>x</td>
<td>3-5</td>
</tr>
<tr>
<td>Total stores</td>
<td>90</td>
<td>x</td>
</tr>
<tr>
<td>Raw score</td>
<td>x</td>
<td>3.48</td>
</tr>
<tr>
<td>Average score</td>
<td>x</td>
<td>3.48</td>
</tr>
</tbody>
</table>

A score of 5.00 represents a complete line of product; a zero, no product.
nor frozen foods. Except for packaged meats and sundries, the latter stores handled limited stocks of groceries, fresh meats, dairy products, produce, and frozen foods.

In total, 44 percent of the grocery stores surveyed carried beer and wine in stock. The percentages of stores selling beer and wine within each group were as follows: group A, 29; group B, 52; group C, 56; and confectioneries, 50 percent.

**Importance of Goods Sold**

Each respondent estimated his store's product line with the greatest sales. A summary of this information is provided in Table 20.

The grocery and meat lines of products were ranked first and second, respectively, in total sales by a majority of the grocers. Beer and wine, produce, and sundries were ranked third, fourth, and fifth in importance.

Among the A group of stores, only groceries and meats were ranked as being the stores' most important product lines. Each line was ranked first by equal numbers of grocers. Meats, groceries, and produce were considered, in that order, to be the second most important lines of goods handled by the complete-line stores.

For those grocery stores which maintained less than complete lines of products, the grocery and meat lines of products continued to rank as the most important with few exceptions. Produce, sundries, and beer and wine gained importance as sales items among the smaller, less diversified stores. For 36 percent of the group C stores, beer
Table 20.--Relative importance of product lines to independent grocery stores in terms of proportion of total sales, by product line and store class

<table>
<thead>
<tr>
<th>Class of store</th>
<th>Rank of importance as proportion of total sales</th>
<th>Number of stores by line of product</th>
<th>Total stores&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Groceries</td>
<td>Meats</td>
<td>Dairy products</td>
</tr>
<tr>
<td>Group A:</td>
<td>first</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Group B:</td>
<td>first</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Group C:</td>
<td>first</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Confectioneries:</td>
<td>first</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Sub-total</td>
<td>first</td>
<td>38</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>27</td>
<td>30</td>
</tr>
<tr>
<td>Total&lt;sup&gt;a&lt;/sup&gt;</td>
<td>first</td>
<td>65</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>second</td>
<td>180</td>
<td>2</td>
</tr>
</tbody>
</table>

<sup>a</sup>Ninety stores with two degrees of importance.
and wine were considered by the respondents to be the most important store sales items. Among the C group, groceries were ranked first by 32 percent and meats were ranked first by 20 percent.

**Total Sales of Goods**

Estimates of total store sales for the week immediately preceding the interview were obtained for most of the independent stores. These figures were obtained to compare the corresponding week's volume of eggs sold to total sales. They may or may not be accurate estimates of a typical week of sales. For informational purposes, the weekly sales estimates are provided in Table 21.

**Table 21.--Estimated total sales for one week for the independent grocery stores, by store class**

<table>
<thead>
<tr>
<th>Item</th>
<th>Store class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Number of stores reporting</td>
<td>27</td>
</tr>
<tr>
<td>Average total sales</td>
<td>$7,637</td>
</tr>
<tr>
<td>Range of total sales</td>
<td>$2,000 to $20,000</td>
</tr>
<tr>
<td>Mean deviation</td>
<td>4,191</td>
</tr>
</tbody>
</table>

The total sales for one week averaged slightly more than 7,600 dollars for the grocery stores in group A or the complete-line stores. The sales were reduced progressively between the groups of stores with less than a complete line of goods. A wide range of sales
totals were reported within each of the respective groups of stores. Approximately 18,000 dollars in total sales separated the two extreme stores within the complete-line group of stores. The average deviation relative to mean sales was large in all store groups.

Customer Services

Customer services performed by the stores, which were presumed to have some bearing upon the sale of eggs, were determined. The services considered were extension of credit, check cashing, delivery, egg processing, keeping a constant supply of eggs, offering eggs for sale directly from open refrigeration units, and guaranteeing the stated size and quality of eggs sold.

All of the stores reportedly kept a constant supply of eggs, guaranteed the product to meet the consumers' satisfaction, and kept eggs in refrigeration units readily accessible to the customer. A majority, or 84 percent, of the stores maintained check cashing services. In contrast, less than 29 percent of the stores extended credit to their customers, less than 31 percent maintained a delivery service, and less than 28 percent processed eggs within the store. The extension of credit and delivery services were provided mainly by the complete-line independent stores. Egg cartoning was the only processing activity performed within any of the stores. Twenty-five of the 90 independent stores purchased graded eggs in case lots and cartoned them within the store. None of the chain stores performed this activity.
With few exceptions, respondents planned to continue present customer service activities. They generally believed such services to be good business and, in some cases, absolutely necessary to keep their customers. A few respondents were planning to discontinue credit programs. This practice was considered to be more costly than beneficial.

Home delivery of groceries seemed to be limited to areas in which there were several comparable, highly competitive, centrally located grocery stores. Delivery service had been developed to more effectively compete for customers in the area. The practice, according to all respondents, was too costly to continue. Yet, the proprietors reasoned they could not singularly dispense with delivery services without allowing their competitors a selling "edge".

Poultry Products Handled

All of the corporate chain grocery stores maintained reasonably complete stocks of frying chickens, hens, turkeys, ducks, and capons. A few handled specialty items such as game birds. The dairy specialty stores, however, normally did not carry either fresh or frozen poultry. But, on holidays a few of the larger specialty stores either stocked frozen poultry or accepted special orders.

Most of the independent grocery stores either maintained regular stocks of chickens, turkeys, ducks, and capons or handled these poultry meats on weekends, holidays, and on special orders (Table 22). A majority, or 74 percent, of the independent groceries regularly stocked frying chickens. However, considerably less than one-half regularly
Table 22.—Poultry meats handled by independent grocery stores, by meat type and store class

<table>
<thead>
<tr>
<th>Class of store</th>
<th>Total stores</th>
<th>Poultry type by number of stores handling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maintained stock</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chickens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fryers</td>
</tr>
<tr>
<td>Independent:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Group B</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Group C</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>87</td>
<td>64</td>
</tr>
</tbody>
</table>

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handled hens, turkeys, ducks, and capons. All of the larger, group A, independent groceries either regularly handled fryers, hens, and turkeys or stocked them on weekends and holidays. Most group A stores also handled ducks and capons. As the size and completeness of stock of the independent stores declined, the number maintaining regular stocks of poultry meats also declined and the proportion handling poultry meats on holidays or on special order generally increased.

For the most part, the independent stores planned no particular changes in handling poultry meats. A few stores within groups A and B planned to enlarge their frozen food sections to handle more of frozen poultry. Also, a few of the medium-sized stores had recently started handling frozen poultry--primarily turkeys and ducks.

EGG MOVEMENT THROUGH RETAIL STORES

Egg Products Handled

The standard shell egg grades of A, B, and Unclassified were offered by the Columbus grocery stores. Except for one store which handled only grade B eggs, all of the groceries stocked either grade A or Unclassified eggs, or a combination of both. Frozen egg products were carried in only one store, and none sold dried eggs. The standard sizes of eggs stocked by the stores were: extra large, large, medium, small, and mixed (Table 23).

Grade A large eggs were most commonly handled by the retail units surveyed. More than 91 percent, or 205 of the 224 groceries, sold grade A large eggs; 161 stocked A medium, 105 sold A extra large, and
Table 23.--Characteristics of eggs sold through Columbus grocery stores, by type, classification, and grade, by store class

<table>
<thead>
<tr>
<th>Class of Store</th>
<th>Total Stores</th>
<th>Type, size, and grade of eggs sold by number of groceries selling</th>
<th>Egg products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Shell eggs</td>
<td>Frozen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extra Large A B Large A B Medium A B Small A B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>----Unclassified---- Mixed Large Medium Small</td>
<td></td>
</tr>
<tr>
<td>Independent:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>34</td>
<td>15 0 30 0 24 1 14 0 3 2 3 1</td>
<td>1 0</td>
</tr>
<tr>
<td>Group B</td>
<td>21</td>
<td>4 0 16 0 9 0 6 0 0 0 1 2</td>
<td>0 0</td>
</tr>
<tr>
<td>Group C</td>
<td>24</td>
<td>0 0 21 0 7 0 4 0 4 0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>11&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1 0 4 1 2 0 0 0 0 0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>90</td>
<td>20 0 71 1 42 1 24 0 7 2 4 3</td>
<td>1 0</td>
</tr>
<tr>
<td>Chain stores:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All groups</td>
<td>134</td>
<td>85 0 134 0 119 0 67 0 31 0 0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>224</td>
<td>105 0 205 1 161 1 91 0 38 2 4 3</td>
<td>1 0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Three confectioneries handled no eggs.
91 stores sold grade A small eggs. All of the chain stores and almost 80 percent of the independent stores handled grade A large eggs. Predictably, a larger percentage of the chain outlets stocked all standard sizes as compared with the independent group. Eighty-nine percent of the chain stores and 47 percent of the independent stores sold grade A medium eggs and more than 63 percent of the chain stores stocked grade A extra large eggs, whereas only 22 percent of the independents sold this size.

Except for a chain store group which kept a constant supply of Unclassified eggs, an insignificant number of establishments sold either grade B or Unclassified shell eggs, or frozen and dried egg products.

A majority, or about 51 percent, of the Columbus stores merchandised three or more sizes of eggs in one-dozen cartons. Slightly less than 42 percent handled four or more sizes comprised mainly of extra large, large, medium, and small.

Excluding the dairy specialty outlets, almost 65 percent of the chain stores, representing all of the corporate chains, stocked four or more sizes of eggs. Only 20 of the 34 largest independents maintained three or more sizes for sale. The medium-to-small independents and dairy specialty outlets usually stocked less than three sizes. In fact, among all independent stores, about 45 percent stocked only one size, 22 percent handled two and three sizes respectively, and less than 12 percent carried four or more sizes.
Table 24.--Frequency of egg sizes stocked by grocery stores, by store class

| Class of stores | Total stores | Number of sizes stocked | | | |
|-----------------|--------------|-------------------------|---|---|---|---|---|
|                 |              | One size                | Two sizes | Three sizes | Four or more sizes | Number of stores |
| Independent:    |              |                         |           |             |                |               |
| Group A         | 34           | 3                       | 11        | 12          | 8               | 87             |
| Group B         | 21           | 10                      | 5         | 5           | 1               | 34             |
| Group C         | 24           | 20                      | 2         | 1           | 1               | 19             |
| Confectionery   | 8            | 6                       | 1         | 1           | 0               | 8              |
| TOTAL           | 87           | 39                      | 19        | 19          | 10              |               |
| Chain stores:   |              |                         |           |             |                |               |
| All groups      | 134          | 15                      | 34        | 0           | 85              |               |
| TOTAL           | 221          | 54                      | 53        | 19          | 95              |               |

Egg Procurement

For most of the Columbus grocery stores, scheduled weekly purchases equaled the weekly volume sold. Eggs were purchased according to an established schedule and store inventories were limited to (1) the volume kept in the sales cooler space allotted to shell eggs, plus (2) a number of cases kept in storage coolers to maintain replenishment of the sales cooler until the next scheduled delivery. The wholesale egg supplier was expected to maintain an inventory adequate for meeting the store's normal scheduled demand and delivering eggs
to supply an unusually heavy customer demand. Although order size varied, the stores rarely ran out of eggs for sale; neither did they often have a large surplus; thus indicating a rather stable egg movement pattern between the wholesale supplier, retailer, and consumer.

Delivery schedules were primarily responsible for the smooth flow of eggs between wholesaler and retailer. Although deliveries varied from once per week for small groceries to three or more times per week for large stores, they were adequate to meet the supply needs of retail groceries.

Most of the respondents representing the independent stores reported they purchased eggs from their present primary and secondary suppliers because they were confident of receiving high quality eggs, from adequate-to-excellent service, and a price that was fair or competitive. Amazingly, 90 percent of the respondents' first responses concerned good quality when asked, "Why do you buy eggs from your present supplier(s)"

First remarks, concerning responses to the above question, ranged from "best eggs in town," "high and consistent quality," to simply "darn good eggs." The few first responses which did not concern quality primarily concerned the importance of service. Invariably, however, high egg quality was the second response in the latter instances.

Differences between the importance of egg quality, price, and services, such as delivery and constant as well as adequate volume, were not as easily determined for the chain stores. Actually, the
chain stores demanded and received eggs of consistent high quality supplied without fail in desired quantities, on a scheduled basis, and at a reasonable or competitive price. Chain store respondents felt that their store operations could not afford slip-ups in either quantity, quality, or delivery schedules. And, although such problems were rare, most of the chains maintained relatively close contact with local egg wholesalers on whom they could depend as fill-in suppliers.

A large majority of the Columbus retail grocers purchased cartoned, shell eggs and from only one medium-to-large egg wholesaler (Tables 25 and 26). Seventy-four percent of the grocers regularly purchased eggs from only one supplier, 11 percent purchased from two, and about 15 percent purchased from three suppliers. In most cases, the suppliers considered by grocers as their primary source of eggs normally wholesaled over 300 thirty-dozen cases of eggs per week. The larger suppliers were also utilized as secondary or fill-in suppliers by most of the complete line stores and by even a few of the group C and confectionery stores. However, thirty-four independent stores purchased eggs primarily from the small-medium sized wholesalers, or suppliers handling up to 300 thirty-dozen cases of eggs per week.

Forty-nine of the chain supermarkets purchased cartoned eggs directly from local, privately owned, commercial egg wholesalers. These stores bought only from the largest egg suppliers in the area. One chain's stores consistently purchased from only one supplier, but the remaining grocers bought eggs from three or more suppliers. In
Table 25.--Number of egg suppliers used by grocery stores, by extent of packaging and store class

<table>
<thead>
<tr>
<th>Class of stores</th>
<th>Total stores</th>
<th>Stores buying from:</th>
<th>Stores receiving eggs from primary supplier</th>
<th>Stores receiving eggs from secondary supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One supplier</td>
<td>Two suppliers</td>
<td>In carton</td>
</tr>
<tr>
<td>Independent:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>34</td>
<td>19</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>Group B</td>
<td>21</td>
<td>15</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Group C</td>
<td>24</td>
<td>20</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>8</td>
<td>8</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Sub-total</td>
<td>87</td>
<td>62</td>
<td>25&lt;sup&gt;a&lt;/sup&gt;</td>
<td>62</td>
</tr>
<tr>
<td>Chain stores:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All groups</td>
<td>134</td>
<td>101&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0&lt;sup&gt;c&lt;/sup&gt;</td>
<td>134</td>
</tr>
<tr>
<td>TOTAL</td>
<td>221</td>
<td>163</td>
<td>25</td>
<td>196</td>
</tr>
</tbody>
</table>

<sup>a</sup>None of the independents received eggs from three or more suppliers.

<sup>b</sup>All but 16 stores obtained their eggs from a centralized source where the final wholesale activity was performed by a corporation-owned agency. These 16 stores had only one commercial supplier.

<sup>c</sup>Thirty-three chain grocery stores received eggs from three or more suppliers.
Table 26.--Size of wholesale firms supplying eggs to grocery stores, by store class

<table>
<thead>
<tr>
<th>Size of supplier (volume)</th>
<th>Number of stores purchasing by class</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total all stores</td>
<td>Chain stores all groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>301 or more cases weekly</td>
<td>212&lt;sup&gt;b&lt;/sup&gt;</td>
<td>134</td>
</tr>
<tr>
<td>300 or less cases weekly</td>
<td>34&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Volume expressed in 30-dozen cases.

<sup>b</sup>Total is greater than number of stores interviewed because 25 groceries used 2 suppliers.

most cases these purchases were divided evenly among the suppliers in proportion to their annual volume.

Except in rare instances, the independent grocers did not purchase eggs from more than two suppliers. Occasionally, during periods of strong demand and an inadequate supply, a few stores would purchase eggs from a third or fill-in supplier. A majority of the independent grocers regularly purchased eggs from only one supplier. But, about 29 percent of the stores had a secondary source of supply which was regularly utilized. A greater proportion of the larger independent grocery stores purchased cartoned eggs from the medium-to-large suppliers and purchased from more than one supplier than did the smaller stores.
Cartoning eggs was performed only by the independent groceries and was limited primarily to the smaller stores. Slightly less than 29 percent of the independent stores purchased uncartoned eggs from their primary supplier. One-half of the group C grocers purchased uncartoned eggs, as did about one-third of the group B, one-third of the confectionery, and one-seventeenth of the group A stores.

Few respondents seemed concerned about a source of eggs if their present primary supplier stopped serving them. However, if such a situation arose, 60 percent of the independent grocers maintained they would buy only from another egg wholesaler. Three-fourths of this group knew of a particular wholesaler from whom they could buy eggs if their present supplier discontinued his services. About 32 percent of the independent grocery respondents did not know from whom they would purchase eggs under such circumstances. Their second response, however, indicated a preference for a full-time egg wholesaler in contrast to a farmer with a part-time egg business. The remaining 8 percent specifically stated they would look for another farmer for their egg supplies.

Although there had been some changes in their egg purchasing system, all of the chain stores had purchased eggs from their present primary suppliers for more than 5 years. In contrast, 43 percent of the independent groceries had switched primary suppliers during this period. Reasons given for these changes were either problems or differences of opinion concerning quality, delivery, and price in that order. Over one-third, however, gave other reasons ranging from
"don't know" or "can't remember" to "the supplier quit selling eggs to me".

For all independent groceries, the present primary supplier had been retained for an average of about 6 years. The lengths of time during which the independent grocers had purchased eggs from their present primary supplier are shown in Table 27.

Table 27.--Tenure of current primary egg supplier of independent grocery stores, by store class

<table>
<thead>
<tr>
<th>Item</th>
<th>Independent Store Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Average</td>
<td>6.8</td>
</tr>
<tr>
<td>Range</td>
<td>.5 - 16</td>
</tr>
</tbody>
</table>

Except for the group B or medium-sized independent stores, the period a particular supplier was retained as a primary source increased with the size of grocery, as one might expect. No explanation was available for the more frequent turnover of suppliers by medium-sized stores.

Customers' Expectations

Practically all of the grocery store managers emphasized that their customers both wanted and demanded clean, fresh eggs.

1Clean eggs were defined as eggs free from dirt, cracks, and had, in general, a "healthy" appearance. Fresh eggs were expected by the customer and store owner to "stand up" and remain firm in the frying pan, or to not spread out in the pan.
Conversely, customers definitely wanted no inedible eggs, especially eggs with bloodspots. The store managers, in turn, wanted clean, fresh, and 100 percent edible eggs from their supplier. Their ability to obtain clean, fresh eggs, which was synonymous with high quality, was the dominant factor affecting their determination of a supplier. Other factors, such as delivery, constant supply, price, and uniform size were very important considerations in their determination of a supplier but only if competitive suppliers were considered equally able to consistently supply high quality shell eggs.

It was interesting to note that while store managers were discussing such customer complaints as only eleven eggs in a carton, or cracked eggs in a carton, their expression was one of relative calm. But when discussing a complaint concerning a badly dirtied or discolored egg, or an egg with a bloodspot and considered inedible, their expression changed to one of excitement and serious concern. Invariably, the manager's conversation changed to expressing a determination to change suppliers if such a thing were to happen very often. In effect, the grocery store managers were definitely concerned that their customers receive only clean, fresh, or high-quality shell eggs.

Few customer complaints concerning shell eggs were received by the grocers surveyed. The store managers took pride in this and emphasized that any complaint received was quickly settled to the customer's satisfaction. Only one store had changed suppliers following customer complaints during the past year. The store's customers complained of low-quality eggs. These complaints were judged to be
legitimate by the store manager who asked his supplier to correct the situation. After a third approach to the supplier, the problems of quality remained and the store changed suppliers.

Sale of Eggs

An estimated 276,220, 30-dozen cases of shell eggs were sold by Columbus' groceries, confectioneries, and dairy specialty stores during 1962. Slightly less than 61 percent of the eggs were moved to the consumer through the corporate chain grocery stores; the remainder were handled by the independent groceries, confectioneries, and two dairy specialty chains as shown in Table 28.

The independent stores were responsible for over 39 percent of the total shell egg movement through retail groceries. Based on the total volume handled by independents, the larger, group A groceries sold 37 percent, the smaller, group C (which included dairy specialty stores) sold 35 percent, and the medium-sized, group B groceries sold 24 percent. The remaining 4 percent were moved through the confectioneries. Although the smaller, group C groceries sold fewer dozen per store, a larger number of total stores--189--caused their total egg movement to be greater than the medium-sized, group B stores--even when subtracting the total volume handled by the dairy specialty stores. (The average number of eggs sold per store per year was similar for group C and dairy specialty stores--only a 26-egg variation or mean difference.)

As expected, the corporate chain groceries sold more eggs per store, and the range of eggs sold per store was less than among the
Table 28.--Reported estimated volume of shell eggs sold through grocery stores, by store class, 1962

<table>
<thead>
<tr>
<th>Classification of stores</th>
<th>Total stores surveyed</th>
<th>Average annual sales per store (dozens)</th>
<th>Range annual sales per store (dozens)</th>
<th>Volume sold by all respondents (dozens)</th>
<th>Estimated volume sold by all grocery stores in Columbus (30-dozen cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>34</td>
<td>18,093</td>
<td>3,120 - 42,900</td>
<td>615,160</td>
<td>39,202</td>
</tr>
<tr>
<td>Group B</td>
<td>21</td>
<td>6,921</td>
<td>364 - 23,400</td>
<td>138,424</td>
<td>25,607</td>
</tr>
<tr>
<td>Group C(^a)</td>
<td>73</td>
<td>4,598</td>
<td>312 - 31,200</td>
<td>335,668</td>
<td>36,621</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>8</td>
<td>1,884</td>
<td>312 - 6,240</td>
<td>16,952</td>
<td>4,333</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td><strong>136</strong></td>
<td><strong>--</strong></td>
<td><strong>312 - 42,900</strong></td>
<td><strong>1,106,204</strong></td>
<td><strong>105,763</strong></td>
</tr>
<tr>
<td>Chain stores:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grocery stores</td>
<td>85</td>
<td>60,161</td>
<td>41,860 - 88,400</td>
<td>5,113,700</td>
<td>170,457</td>
</tr>
<tr>
<td><strong>TOTAL, ALL STORES</strong></td>
<td><strong>221</strong></td>
<td><strong>--</strong></td>
<td><strong>312 - 88,400</strong></td>
<td><strong>6,219,904</strong></td>
<td><strong>276,220</strong></td>
</tr>
</tbody>
</table>

\(^a\) Dairy specialty chain stores included (1) so the chain grocery store data will not be diluted and (2) so the dairy specialty store data can be accurately reported and remain confidential.
independent stores. The average weekly volume of eggs sold per independent store was 1,157 dozen; this was about 40 percent lower than the average weekly volume handled by the largest independent store. The largest average weekly volume of eggs sold per store by a corporate chain was about 1,700 dozen.

Except for the smaller stores which handled relatively few eggs, most of the groceries had both seasonal and semi-monthly fluctuations in their egg sales. The volume of eggs sold was often reduced as much as 10 to 15 percent during the summer months as compared with normal sales for the rest of the year.

Egg sales increased enough during the fall and winter months to more than offset the summer reductions. Reportedly, as soon as the children started back to school, there were increased egg purchases by housewives. Most retail grocers explained that vacations were over and people remained both at home and indoors more, the weather was considerably cooler and conducive to cooking, and parents became more concerned about the eating habits of their children—all of which tended to increase egg consumption in the home.

Three less subtle factors also had a fluctuating effect on egg sales in retail grocery stores. First, many stores had egg promotional sales during the early fall and winter months. These sales were held for a number of reasons. But one of the most interesting was the probability that the lower sales tended to act as a stimulus for grocery managers to "push" eggs to either regain or increase their former sales volume. Eggs per se apparently received little attention
from the store manager as long as sales were reasonably steady and there were no complaints about quality from the customers. But, even though most managers expected fewer sales during the summer, the movement of eggs received increased thought and planning because of this fluctuation—perhaps even in greater proportion than the importance of eggs relative to the stores' other products.

All grocery stores reported increased egg sales for Easter and other holidays. Sales were up also during payday weeks, especially among the larger stores, and down slightly during the week immediately preceding paydays. And, many of the smaller grocers reported egg sales fluctuating to some degree with the changes in prices.
Buying Prices - Independent Stores

During the interview period, independent retail groceries paid an average of 53.4 cents per dozen for cartoned, grade A-large shell eggs. Prices ranged from 47 to 57 cents for cartoned eggs and from 42 to 57 cents for loose-in-case eggs as shown in Table 29. From all indications, about the same degree of processing had been performed on all cartoned eggs. The carton types were similar and all had been delivered to the stores by vendors. Although the larger stores handling the greatest volume of eggs were logically expected to purchase eggs at the lowest price per dozen, the smaller, group C stores and confectioneries actually paid less for cartoned eggs than either of the larger groups of stores.

The average purchase price per dozen of cartoned eggs varied from 52.3 cents paid by the smallest grocery group to 53.9 cents paid by the group B stores. No adequate explanation is readily available for this seemingly illogical difference. However, perhaps part of the purchase price difference can be explained by variations in carton cost. Although all of the cartons under consideration were 2 x 6's, the smaller stores more often used the plain, molded cartons, whereas the larger stores generally used the more colorful, printed, and collapsible cartons. The latter often cost from 1 to 2 cents more than plain cartons, especially when purchased in small lots.
Table 29.--Average prices paid and margins received from the sale of shell eggs by grocery stores

<table>
<thead>
<tr>
<th>Classification of stores</th>
<th>Grade A Large Shell Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cartoned (^b)</td>
</tr>
<tr>
<td>Independent</td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td>53.7</td>
</tr>
<tr>
<td>Group B</td>
<td>53.9</td>
</tr>
<tr>
<td>Group C and Confectioneries</td>
<td>52.3</td>
</tr>
<tr>
<td>Average - All Groups</td>
<td>53.4</td>
</tr>
<tr>
<td>Range</td>
<td>47-57</td>
</tr>
</tbody>
</table>

\(^a\) All calculations weighted.

\(^b\) 2 x 6 cartons, both moulded and collapsible.

\(^c\) Includes cost of carton and cartoning.

Except for four stores, the prices paid for shell eggs by the independent retailers were established by the wholesale supplier. Price bargaining rarely occurred. Four stores insisted on and received wholesale prices based on publicly printed quotations of local prices—usually newspaper reports. Most stores, however, were quite satisfied to accept the prices set by their suppliers. Although many grocers found fluctuating prices to be an inconvenience, they believed these fluctuations to indicate the changing market situation and were, accordingly, reassured that they were reasonably fair prices.
Selling Prices - Independent Stores

In the absence of mutually accepted guidelines, each independent grocer devised his own pricing method and subsequently established his retail price for eggs. Consequently, both pricing methods and retail prices varied considerably. In every case, retail prices were determined by adding a markup or margin to the delivered egg price. Yet, as indicated in Table 29, the margin for cartoned, A-large, shell eggs ranged from 6 to 21 cents per dozen and averaged 12.1 cents. The margin received for loose-in-case eggs ranged from 9 to 20 cents per dozen and averaged 12.5 cents.

Although markup practices followed a general pattern, they were influenced by a number of personal and business factors. About 90 percent of the respondents maintained a standard margin of at least 10 cents per dozen for all eggs sold. This margin, however, was frequently either increased or decreased, depending upon their competitor's price, purchase price, in-store handling costs, local price reports, customers' demands, volume of eggs moved, and their expectation of customers' reaction to fluctuating prices. Most of the respondents watched either their competitors or the newspaper prices and adjusted their retail price of eggs accordingly—especially if the difference was over 5 cents a dozen. Retail markups and prices were often unilaterally adjusted according to a somewhat nebulous, but practical, give-and-take formula. Some grocers increased their normal markup over wholesale cost if they believed their retail price—during a period of below normal wholesale costs and applying the normal margin—was less than
the amount customers would afford without reducing their volume purchased. In contrast, some retailers reduced their normal markup from cost when they believed the resulting price was becoming high enough to cause a reduction in the total volume sold. This practice, among others, tended to stabilize the retail price of eggs which met with the approval of customers. In fact, a few retailers felt that fluctuating prices confused or frustrated their customers and, as such, was detrimental to their business. Consequently, they established and maintained a set price for each size of egg and changed prices no more than one to four times per year. Several reported sustaining temporary losses to avoid changing prices more often.

The variations in prices paid and prices received for both grade A-medium and small eggs were similar to those for A-large. However, the margins received for grade A-medium eggs were equal to or from 1 to 3 cents higher per dozen than the markup on A-large eggs. A partial explanation may be attributed to the following observations: (1) Approximately 20 percent of the grocers purchased either part or all of their medium-sized eggs loose-in-case. In addition to the normal markup, the retail price included an additional margin over wholesale cost to cover the charge for both carton and cartoning. (2) A few of the group B and C stores had a heavier demand for medium-sized eggs than for either large or small eggs, thus making it possible to increase the profit per dozen on medium eggs. (3) In some cases, medium-sized eggs were purchased at wholesale below average prices and were retailed at average retail price, thus resulting in a larger margin.
Over 83 percent of the independent groceries changed their retail prices following wholesale price changes. Thus, fluctuating wholesale prices and delivery schedules primarily regulated retail price changes of their outlets. About 17 percent of the grocers, however, resisted this practice for the previously mentioned reasons as well as avoiding the extra handling required.

Slightly more than 10 percent of the retailers were dissatisfied with their methods of determining buying and selling prices and the frequency of price changes. The remainder were satisfied. The frequent wholesale and subsequent retail price changes were disliked by a majority of the retailers, yet were accepted as a fact of the commodity business. Significant changes in the methods of purchase and sale price determination were practically nonexistent during the previous 5 years.

**Buying and Selling Prices - Corporate Chain Stores**

Individually, none of the 134 corporate chain stores studied either determined or significantly influenced their wholesale purchase price or retail price of eggs sold. All seven corporate chain groups had centrally controlled egg procurement, distribution, and pricing programs. The individual chain groceries did, however, have a degree of control over retail price in that they could lower the sale price to dispose of surpluses.

All seven of the chains' central procurement offices--representing 134 Columbus supermarkets and about 61 percent of the total volume of eggs sold by retail grocery chains in Columbus--regularly purchased
almost 100 percent of their retail volume of eggs from 1 to 3 large-volume egg wholesalers. Four of the seven procurement centers utilized only one primary supplier; the remaining three groups had three regular suppliers and considered at least two of them as being primary sources of supply. All seven corporations occasionally utilized other local wholesalers as fill-in suppliers.

But only two procurement offices attempted to purchase reasonably constant volumes from their fill-in suppliers on a scheduled basis. This practice was followed for two reasons: (1) to maintain close contact and consequently a business relationship and (2) since the volume of eggs purchased fluctuated and was sometimes quite large, to enable the wholesaler to develop his procurement program and subsequently be able to supply the buyer's on-call needs.

The instruments and logic used for both wholesale and retail price determination varied, but the methods used were basically similar. An example of price determination by a major corporate grocery chain which utilized an integrated and centralized egg procurement and distribution program was described:

1. The commodity division of the corporation's district headquarters, which may represent from 50 to 150 district supermarkets, annually negotiated a base purchase price for eggs with the corporation's divisional egg processing plant. (The egg processing plant was also owned and regulated by the corporation, but operated independently of the district warehouses and retail institutions.)

1Kroger purchases from its own processing plant in Indiana.
2. The wholesale price for eggs to be paid by the Columbus district was based on the Chicago Commodity Market's quotations for specified sizes, grades, and mixtures of sizes, grades, and colors.

3. Thus, the wholesale price paid by the district's procurement center was a sum of the latest Chicago market quotation, the processing plants' average cartoning cost, and transportation charges from plant to warehouse.

4. In turn, the procurement center determined the district's retail stores' buying prices by adding warehouse handling and re-distribution costs to their purchase price.

5. Retail chain store markup or sales margin was also determined by the central warehouse. Retail markups and consequently retail prices changed with fluctuations of wholesale cost and were further adjusted in accordance with competitive supermarket prices.

Although the remaining six corporate chains purchased eggs from independent egg wholesalers, purchases were made primarily by their centralized procurement offices and on the basis of a negotiated price. Buying price differentials from a base were negotiated annually or more frequently with their primary suppliers and were concluded with either a mutual agreement or written contract. All except one used a written contract. Three of the largest chains based their purchase price on the New York, Urner-Barry shell egg market report. Two of these three based their top prices paid on the U-B, Fancy, Heavy Weight quotations. Fill-in suppliers, however, were generally paid the top local market price for eggs. Differences in prices paid the
primary and fill-in suppliers depended upon the current, local market situation as compared to the New York market, seller's inventory, and the urgency of the buyer's needs.

Only two of the chain store egg procurement centers disclosed their wholesale prices paid and retail markups. The few wholesale-retail price margins which were obtained ranged from 14.5 to 18.5 cents per cartoned dozen. This margin was designed to offset warehouse handling and re-distribution costs and provide the retailer with a profitable margin for selling. Most reported their retail price margins to be highly variable due to continuous price adjustments stimulated by changes in market conditions. The majority, however, attempted to limit retail price changes to no more than two per week. The larger chains reportedly decreased retail margins when wholesale prices were considered "high" and increased them when prices were "low". The stated policy, however, was to keep margins large enough to permit the retail stores to maintain profitable egg operations.
Chapter IV

USE OF EGGS BY FOOD SERVICE OPERATIONS

PROCEDURE

1 State laws of Ohio require the licensing of all food service operations within the State on an annual basis. By definition, a food service operation is "...any place which is kept or maintained for the purpose of preparing or serving meals or lunches for a consideration...",2 with minor exceptions such as dining or sleeping cars, homes with non-paying guests, and similar operations. Operations covered under the law include every conceivable type of place dispensing food to the public including vending machines.

Six different health departments issued licenses to food service operations in the Columbus Metropolitan Area. These were the State Department of Health, which issued permits to all operations run by the State government; the city departments of health of Columbus, Bexley, Grandview, and Upper Arlington; and the Franklin County Department of Health which issued permits to operations not included in any of the above jurisdictions.

1 Ohio Revised Code (1961), sections 3732.02 to 3732.08, inclusive.

The respective departments of health opened their records of licenses for use in this project. Licenses contained the names, addresses, and seating capacities of all commercial food service establishments operating within the confines of Franklin County. Included also were the names and addresses of all non-profit food service operations within the area. Descriptive information, however, was not available for these establishments.

The total population of food service operations was determined, stratified according to general type and whether commercial or non-commercial, and sampled using the aforementioned records. A total population of 2,229 food service operations were licensed; 1,821 commercial establishments and 408 non-commercial operations. Twenty percent of the population, or 437 operations, were contacted and their use of eggs determined. Completed schedules were obtained on 12.3 percent of 375 operations. The latter were concentrated among those groups shown by the literature and known by the local industry to be significant outlets for eggs. The population breakdown and interviews made are outlined as follows:

**Non-commercial operations**—408: The issuance of non-commercial licenses was limited to schools, hospitals, churches, non-profit fraternal orders, and government operations. This group was comprised of 182 public and parochial school food service operations, 180 of which were surveyed; 19 hospitals, 17 of which were surveyed; 70 fraternal groups, all of which were surveyed; 8 penal or correctional institutions, 7 of which were surveyed—the Ohio Penitentiary refused
permission; 60 miscellaneous operations, mostly concession stands
sponsored by various governmental agencies, none of which were sur-
veyed; and 69 church-sponsored operations, such as weekend and summer
camps, in-church operations, and Goodwill and the Salvation Army.
Five of these operations were sampled and interviewed but not included
in the discussion of institutions. Except for the non-profit aspect,
there was no similarity between the operations of churches and those
of other institutions.

Commercial operations.--1,821: Commercial food service operations
were grouped into six general classes according to their anticipated
use of eggs—from the most to the fewest. Comprising these groups
were: Class I - 667 restaurants, cafes, drive-ins, hotels, and
businesses with private operations; Class II - 220 pharmacies, variety
stores, bowling lanes, and similar operations with food counters not
otherwise classified; Class III - 60 rest and nursing homes; Class IV
- 120 bars, carry-outs, and lounges not otherwise classified; Class
V - 316 pizza places, dairy queens, night clubs not otherwise classi-
fied, nursery and day schools, and 12 drive-ins; Class VI - 438
miscellaneous operations which were predominantly theater counters,
mobile concessions, concession stands at race tracks, swimming pools,
private clubs, such as the Moose, Elks, and VFW, and other corporations,
such as ice cream carts and private individuals.

Operations in Class I, the restaurants, were personally inter-
viewed using a prepared schedule. A stratified random sample of the
667 operations was made and 63 completed schedules were obtained,
representing over 9.4 percent of the class. These operations are reported as commercial restaurants in the discussion.

Classes II, III, and IV were comprised of 400 operations. These operations were grouped as one, randomly sampled, and personally interviewed using a prepared schedule. Thirty-nine completed schedules were obtained, representing almost 9.8 percent of the population. These operations are reported as other commercial in the discussion.

About 15 percent of the 316 operations listed in Class V were selected at random and telephoned to determine their use of eggs, if any. Of the 30 pizza places and dairy queens called, not one used eggs except as they came in premixes. None of the 5 day nurseries or schools called used eggs. And two chain organizations with 12 drive-ins used no eggs in their operations. Although each of the 10 night clubs—not classed as restaurants—used eggs, in every case their use was 10 dozen or less per week, generally 1 dozen or fewer per day. It was concluded that this group either used no eggs or used so few that their inclusion in the survey would not significantly contribute to the study.

A similar decision was made on the 438 miscellaneous operations in Class VI. About 15 of these operations were either personally visited or contacted by telephone. Three respondents regularly used eggs for making egg solids, seven used eggs occasionally, and the remainder used none. Less than 4 dozen were used by the 15 called, accordingly this group was assumed to use an inconsequential number of eggs.
GENERAL DESCRIPTION

A total of 375 food service operations were surveyed—273 institutional and 102 commercial operations. Day schools, which included all public and parochial grade and high school cafeterias, represented 42.1 percent of the total with 158 separate operations. Other institutions, which included all of the remaining institutions within the metropolitan area except the Ohio Penitentiary, two hospitals, two special schools, and the churches, accounted for 115 or 30.7 percent of the total. The 102 commercial operations represented 27.2 percent of the total surveyed and 9.4 percent and 9.8 percent of their respective classes as delineated in the procedure.

Day school cafeterias served only one meal a day—except on special occasions—and operated 9 months of the year. About 123,450 persons had daily access to school cafeterias, however, in total the cafeterias served only 65,770 meals per day, or about 0.53 meals per person. The latter figure ranged as high as 9.1 for schools relatively isolated from both commercial operations and the students homes to 2.3 meals per person for schools operating under the opposite circumstances.

All of the other institutions listed in Table 30 served three meals a day throughout the year. The colleges and University, however, served considerably fewer meals during the summer. At peak operating periods, the full-time institutions served 91,195 meals per day to 43,184 persons with access to their operations, or an average of 2.11 meals per person.
Table 30.—Types of meals regularly served by food service operations interviewed, by type and size of operation

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Type of meals served by number of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Breakfast</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>0</td>
</tr>
<tr>
<td>Other institutions</td>
<td>115</td>
<td>115</td>
</tr>
<tr>
<td>Sub-total</td>
<td>273</td>
<td>115</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(42.1)</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>100 - 150 + seats</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Sub-total</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(79.4)</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td>23</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(59.0)</td>
</tr>
</tbody>
</table>

*aBoth grade and high schools prepared meals for special groups on occasion. However, the district supervisors could not estimate the number.

Lunch was the meal most frequently served by the restaurants surveyed. All of the restaurants served lunch, but about 92 percent served three meals per day and only 80 percent served breakfast.
Slightly over 68 percent of the remaining commercial operations served three meals per day, and only 59 percent served breakfast. Ten of these served meals only on occasion.

The restaurants ranged in size from operations with 10 seats for customers to one with over 700 seats. Seating capacity averaged, however, between 33 for the smallest restaurants to 241 for the largest.

Table 31.--Operational characteristics of commercial restaurants interviewed, by number of employees and seating capacity²

<table>
<thead>
<tr>
<th>Size of restaurant (seating capacity)</th>
<th>Full-time employees</th>
<th>Seating capacity average number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 59 seats</td>
<td>4.7</td>
<td>32.9</td>
</tr>
<tr>
<td>60 - 99 seats</td>
<td>7.8</td>
<td>75.0</td>
</tr>
<tr>
<td>100 - 149 seats</td>
<td>10.2</td>
<td>104.0</td>
</tr>
<tr>
<td>150+ seats</td>
<td>26.6</td>
<td>241.1</td>
</tr>
<tr>
<td>Total</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

²All data based on interview, except seating capacity ranges which were extracted from health department records.

Employment in restaurants ranged from a 2-man operation to one with 71 employees. Average operations, however, employed between 5 and 27 persons.

PRODUCT USE

Eggs are highly versatile products. Food service operators in Columbus used them in a wide variety of ways. Eggs were prepared as
original dishes, used as appetizers, and served functionally in both cooking and baking as agents of leavening, thickening, emulsifying, coating, binding, and clarifying. Eggs were used for retarding crystallization in candies and icings, and they were used to add color, flavor, and nutrition to prepared foods. Some operators even pickled them to eat while drinking beer.

By groups, the major uses for eggs were in egg dishes, baking, and general cooking (Table 32). This ranking was prevalent in all groups except the grade and high school food service operations. School cooks used a majority of their eggs in baking since they served neither morning nor evening meals.

Omitting the day schools, there was no practical difference in the use of eggs between the commercial and non-commercial operations. Commercial operators reported using fewer eggs in salads and more boiled—which were probably used as garnish—than did non-commercial operators. Also, food service operations serving three meals a day to either customers or patients used about 54 percent of their total egg supply for breakfast, 20 percent for lunch, and 26 percent for dinner.

The shell egg was the predominate type used by food service operations in terms of both volume and number of firms. All of the firms surveyed used shell eggs; although about 52.4 percent or 196 of the 374 firms also used egg products, either frozen or solids. This group was comprised of 158 grade and high schools which received egg solids...
Table 32.--Use of eggs by food service operations, by number and type of establishment using, ranked as to major use

<table>
<thead>
<tr>
<th>Type of operation</th>
<th>Total operations</th>
<th>Use by preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fried a</td>
<td>Boiled</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>48</td>
</tr>
<tr>
<td>(Rank of major use)</td>
<td>(6)</td>
<td>(5)</td>
</tr>
<tr>
<td>Other institutions</td>
<td>115</td>
<td>115</td>
</tr>
<tr>
<td>(Rank of major use)</td>
<td>(1)</td>
<td>(6)</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td>23</td>
</tr>
<tr>
<td>Sub-total</td>
<td>102</td>
<td>73</td>
</tr>
<tr>
<td>(Rank of major use)</td>
<td>(1)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

a All methods.

b Mostly restaurants with liquor licenses.
from the State under a school lunch program, 34 other institutions including hospitals and colleges, and 4 commercial food service operations.

Food service operators reported using all grade A or better eggs in four different sizes—small, medium, large, and extra large. Six operators used unclassified eggs which probably fall within this range. The medium and large eggs were the sizes most used by operators. Most, or 43.9 percent, of the firms purchased either medium or large eggs, .5 percent bought small, and 1.6 percent purchased extra large eggs.

There appeared to be three differences in the use of eggs between the commercial and non-commercial operators. The restaurants seating 100 or more persons tended to use larger sized eggs than any other group. Only 39.2 percent of the commercial operations used any form of egg product, whereas 70.6 percent of the institutions used either frozen or dried eggs. And commercial firms regularly purchased only one size of egg, whereas 69.5 percent of the institutions bought a combination of two sizes. The latter were reportedly less concerned with the size of eggs than with price and quality. And they often found medium eggs to cost less per ounce than large or extra large eggs.

Over 70 percent of the full-time institutions were using shell eggs to the exclusion of egg products. Shell eggs were preferred for reasons of convenience, better results, and personnel management. Most operators felt that shell eggs were more convenient to use than either frozen or dried eggs—especially when preparing a variety of foods in
Table 33.--Characteristics of eggs used by food service operations, by type, form of product, and firms using

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Shell egg sizes</th>
<th>Egg products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Medium and large</td>
<td>Extra large</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>Other institutions</td>
<td>114</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Sub-total</td>
<td>272</td>
<td>0</td>
<td>61</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Sub-total</td>
<td>63</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Other Commercial</td>
<td>39</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Firms</td>
<td>374</td>
<td>2</td>
<td>81</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(.5)</td>
<td>(21.7)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Proportion varied monthly.  <sup>b</sup>Mostly whole egg products; four schools used both types.  <sup>c</sup>Two firms in each group used both products.
relatively small quantities. They considered the necessity to thaw and/or reconstitute egg products an inconvenience. Many operators believed they could achieve better results by using shell eggs rather than egg products. And several operators frankly stated that their cooks either could not or would not use egg products, and that they would not pursue the matter further and chance their loss to the organization.

In rather sharp contrast, 34 full-time institutional operations were using egg products and although most were not doing so entirely by choice, the operators reported highly favorable results from both frozen and dried eggs. They used egg solids only for baking—mostly the relatively dry end products, such as cookies, breads, muffins, breading, doughnuts, and similar items. Frozen eggs were used for both general cooking and all baking. However, they tended to be used in products with greater moisture content than the above. The large volume users of egg products preferred them to shell eggs for cooking and baking. They received what they considered superior end products and encountered fewer storage and handling problems than with shell eggs.

The preferences for shell eggs among commercial establishments were less straightforward. The first responses of operators, as shown in Table 34, indicate a degree of unfamiliarity with egg products, 1

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1Egg solids were made available by the U.S. Department of Agriculture at a fraction of their commercial cost (25 cents per 18-pound case) and food supervisors felt they could not justify their exclusion.
Table 34.--Preferences for shell eggs by commercial food service operators, as indicated by first responses, by type and size of firm

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Reasons for preferring shell eggs to egg products</th>
<th>number of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Never tried products</td>
<td>Want fresh</td>
</tr>
<tr>
<td>Restaurants:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Sub-total</td>
<td>63</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(30.2)</td>
<td>(22.2)</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Total firms</td>
<td>102</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(28.4)</td>
<td>(24.5)</td>
</tr>
</tbody>
</table>

\(^a\)Primarily because of the small amounts used in a variety of products.
especially among the smaller restaurants, and also some very definite opinions.

Over 28 percent of the commercial food service operators had never tried egg products, thus preferring shell eggs. Slightly less than 56 percent of the respondents stated flatly that they "wanted fresh eggs," "must have shell eggs," or that their "use did not permit the purchase of egg products." Many of these responses were further qualified by reasoning that due to the rather small quantity of eggs used at any one time (less than 3 dozen per day on an average for small restaurants) they could not rationally afford to thaw and safely store a 30-pound tin of frozen eggs, or to reconstitute and store a 3-pound tin of egg solids—the latter being equal to 30 pounds of liquid egg when reconstituted. Since egg products were not acceptable substitutes for shell eggs at breakfast, spoilage-free storage would be required for 2 weeks or longer.

These problems alone could very well account for the fact that only four commercial operations in 102 were using egg products. All four purchased both egg solids and frozen eggs but limited their use to baked goods. However, they were quite satisfied with egg products and planned to increase their use as business increased.

All institutional food service operations reported using an increasing volume of eggs, ranging from 5 to 10 percent annually. Increases were due to growth in student enrollment, numbers of patients, and/or inmates, and the fact that premixes for cooking and baking were rarely used by the institutions.
In contrast, almost 20 percent of the restaurants reported a decrease in the volume of eggs used while, at the same time, business had been increasing. In every case, fewer eggs were required because the operator was using premixes for baked products.

EGG PROCUREMENT

The food service operations surveyed in Columbus purchased 14,641 dozens of shell eggs and 4,617 pounds (liquid equivalent) of egg products during the week interviewed. The shell eggs were reportedly all grade A and ranged in size from small to extra large, with some unclassified sizes. The egg products received were comprised of both frozen eggs and egg solids; about 33 percent frozen eggs and 67 percent egg solids (Table 35).

Institutions operating on a full-time basis accounted for 60 percent of the shell eggs and 33 percent of the egg products purchased. Restaurants bought the second largest volume of shell eggs or 34 percent of the total purchased by food service operations. Day schools bought 59 percent of the egg products but ranked as a minor user of shell eggs as shown in Table 35.

Frozen egg products were purchased by both the institutional and commercial food service operations. However, most or 83 percent were purchased by the institutions with the remaining 17 percent bought by restaurants. About 2,888 pounds (liquid equivalent) of egg solids were purchased by institutions, 94 percent of which went to grade and high schools in the area. Only 276 pounds of egg solids were used by other institutions and 104 pounds by the commercial operations surveyed.
Table 35.--Volume of eggs purchased during week of interview by food service operations, by type and number of suppliers and firms buying

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Shell eggs</th>
<th>Egg products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total operations served</td>
<td>Total volume</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>525</td>
</tr>
<tr>
<td>Other institutions</td>
<td>115</td>
<td>8,787</td>
</tr>
<tr>
<td>Sub-total</td>
<td>273</td>
<td>9,312</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(87.3)</td>
</tr>
<tr>
<td>Firms buying</td>
<td>42</td>
<td>29</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>1,275c</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>3,641</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td>413c</td>
</tr>
<tr>
<td>Sub-total</td>
<td>102</td>
<td>5,329</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(72.7)</td>
</tr>
<tr>
<td>Firms buying</td>
<td>102</td>
<td>38</td>
</tr>
<tr>
<td>Total all operations</td>
<td>14,641c</td>
<td>12,006</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(82.0)</td>
</tr>
</tbody>
</table>
Table 35.--Continued

a Wholesale distributors selling 50 or more 30-dozen cases of eggs per week, jobbers sold less.

b Liquid equivalent: egg solids reconstituted using a 4:1 ratio.

c Two restaurants and 13 miscellaneous operations purchased a total of 52 dozens of eggs from groceries and are included in totals but not in breakdown.
Large distributors, or those selling over 50 cases of eggs per week, supplied 82 percent of the total volume of shell eggs and about 35 percent of the egg products purchased by food service operators. The larger distributors also supplied 47 percent of the total firms buying shell eggs but only 20 percent of the operations purchasing egg products. The State supplied egg products to 20 outlets, which accounted for 80 percent of the firms studied that used egg products.

Jobbers were the second most important sources of shell eggs in terms of both volume and firms served. During the week of interview, jobbers had supplied about 13 percent of the total volume purchased and 27 percent of the total outlets buying shell eggs. And in no instances did jobbers handle egg products.

Farmers, on the other hand, supplied 16 percent of the operations studied, but accounted for only 4 percent of the total volume of shell eggs purchased by all firms. Grocery stores also supplied 15, or 10 percent, of the food service operations. However, they sold only 52 dozen or 0.4 percent of the total volume purchased.

**Annual Use of Eggs**

An estimated 93,753, 30-dozen cases of shell eggs and 325,834 pounds (liquid equivalent) of egg products were used by Columbus' food service operations during 1963. These volumes represent the movement through 1,346 food service operations, of which 279 were institutions and 1,067 were commercial restaurants, counters, concessions, and similar places where foods were prepared and sold.
Table 36.--Estimated volume of shell eggs used by food service operations, Columbus, 1963

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total operations surveyed</th>
<th>Volume used during week of interview</th>
<th>Estimated volume used during year</th>
<th>Average annual volume used per operation</th>
<th>Total food service operations in area</th>
<th>Estimated total volume of eggs used by all operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutions:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>17.50</td>
<td>630&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.99</td>
<td>158</td>
<td>630</td>
</tr>
<tr>
<td>Other institutions</td>
<td>115</td>
<td>292.90</td>
<td>13,703&lt;sup&gt;b&lt;/sup&gt;</td>
<td>119.16</td>
<td>121&lt;sup&gt;c&lt;/sup&gt;</td>
<td>14,418</td>
</tr>
<tr>
<td><strong>Commercial:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>37.50</td>
<td>2,354</td>
<td>69.23</td>
<td>505</td>
<td>34,963</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>125.55</td>
<td>6,516</td>
<td>224.70</td>
<td>162</td>
<td>36,401</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td>10.59</td>
<td>716</td>
<td>18.35</td>
<td>400</td>
<td>7,341</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>375</td>
<td>484.04</td>
<td>23,919</td>
<td>--</td>
<td>1,346</td>
<td>93,753</td>
</tr>
</tbody>
</table>

<sup>a</sup>Calculated on 9 month basis, less 3 weeks for vacations.

<sup>b</sup>Reflects 10.1 percent reduction during summer months.

<sup>c</sup>Firms not interviewed were arbitrarily assigned average use.
Table 37.--Estimated volume of egg products used by food service operations, Columbus, 1963

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total operations surveyed</th>
<th>Volume used during week of interview</th>
<th>Estimated volume used during year</th>
<th>Average annual volume used per operation</th>
<th>Total food service operations in area</th>
<th>Estimated total volume of eggs used by all operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>158</td>
<td>2,716</td>
<td>97,776(^a)</td>
<td>618.84</td>
<td>158</td>
<td>97,776</td>
</tr>
<tr>
<td>Other institutions</td>
<td>115</td>
<td>1,541</td>
<td>69,273(^b)</td>
<td>602.47</td>
<td>121(^c)</td>
<td>72,887</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>105</td>
<td>5,460</td>
<td>160.59</td>
<td>505</td>
<td>81,097</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>255</td>
<td>13,260</td>
<td>457.24</td>
<td>162</td>
<td>74,074</td>
</tr>
<tr>
<td>Total</td>
<td>336</td>
<td>4,617</td>
<td>185,769</td>
<td>--</td>
<td>946</td>
<td>325,834</td>
</tr>
</tbody>
</table>

\(^a\)Calculated on 9 month basis, less 3 weeks for vacations.

\(^b\)Reflects 54.7 percent reduction during summer months.

\(^c\)Firms not interviewed were arbitrarily assigned average use.
Of the 93,753, 30-dozen cases of shell eggs, restaurants seating over 100 persons used 39 percent, averaging about 225 cases per firm annually; restaurants seating fewer than 100 used 37 percent, averaging about 69 cases per year; institutions, such as colleges, hospitals, and penal establishments used 15 percent of the total volume and averaged 119 cases per operation. The remaining shell eggs were used by miscellaneous commercial firms, 8 percent; and grade and high schools used 1 percent.

The day schools, grade and high schools used an insignificant volume of shell eggs. About 630, 30-dozen cases of shell eggs were used by day schools which averaged about four cases per year for the 158 food service operations. In contrast, day schools used most or 30 percent of the total volume of egg products purchased by food service operations. Egg products, which were in the form of egg solids, were obtained from the State at a cost of 25 cents plus delivery per 18-pound case.

Commercial restaurants were the second largest users of egg products in terms of volume. This group purchased over 155,000 pounds of frozen eggs and egg solids, which represented about 48 percent of the volume purchased by all food service operations. Excluded from this group, however, were the miscellaneous commercial operations, such as pharmacy and bowling lane counters. None of those firms surveyed purchased egg products.

Restaurants seating fewer than 100 persons used 25 percent of the total volume purchased by all operations, averaging about 161 pounds
per firm annually. The larger restaurants used 23 percent of the total or about 457 pounds per operation. Institutions such as colleges, hospitals, state schools, and penal establishments used 22 percent, averaging 602 pounds per firm.

**Delivery of Eggs**

Suppliers established the frequency of egg deliveries to food service operations. Still, the storage space made available for eggs was limited by operators. And suppliers had to match the weekly volume needed with the storage available. Regular deliveries were made by suppliers ranging from daily to once a week. A majority, or 67 percent of the outlets received eggs either once or twice a week. About 22 percent of the firms made spot orders—or received egg deliveries on call.

All of the food service operators receiving egg deliveries from once to twice a week found these schedules adequate to meet their needs. The outlets using large volumes of eggs—15 to 125 cases a week—required more frequent delivery. They received from three to five deliveries a week but comprised only 11 percent of the operations studied.

A majority, or 51 percent of the food service operators reported that they did not call their regular supplier when they ran out of eggs prior to the next delivery. Instead, they either bought the volume needed from the nearest source or borrowed eggs from some other business or institution. Most felt that it was simply less trouble to both the operator and regular supplier to buy locally.
Table 38.—Frequency of egg deliveries to food service operations, by type and size of buyer

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Frequency of delivery</th>
<th>by number of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily</td>
<td>3/week</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other institutions</td>
<td>24</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Sub-total</td>
<td>42</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>34</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sub-total</td>
<td>63</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Other commercial</td>
<td>29^a</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total of all operations</td>
<td>134</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(2.2)</td>
<td>(9.0)</td>
</tr>
</tbody>
</table>

^a10 firms purchased only occasionally and thus are omitted.

The remaining 49 percent of the operators either did or would call their regular suppliers to cover short-term deficits in supply. The volume required by 50 percent of these operations was large enough to justify receiving special or unscheduled deliveries; the remainder felt they were due this consideration from the supplier because they were regular customers.
Factors of Supply

The quality of eggs received was the predominate reason given by food service operators for preferring their current source of supply. Quality was considered first in importance by 85 or 62 percent of the 139 respondents. Service was ranked first by 31 percent and price first by 7 percent of the respondents.

Table 39.—Reasons for preferring current source of egg supply by food service operators, by type and size of firm

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Reasons for preferring current supplier by number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Other institutions</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Sub-total</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>31</td>
<td>23</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>28</td>
<td>23</td>
</tr>
<tr>
<td>Sub-total</td>
<td>59</td>
<td>46</td>
</tr>
<tr>
<td>Other commercial</td>
<td>38</td>
<td>21</td>
</tr>
<tr>
<td>Total respondents</td>
<td>136</td>
<td>85</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(62.0)</td>
</tr>
</tbody>
</table>
Although neither group appeared particularly price conscious, the institutional buyers showed considerably more concern about prices they paid than did the commercial operators. For example, 18 percent of the institutional respondents ranked price of first importance, whereas only 2 percent of the commercial operations ranked price first. Commercial operators also showed considerably more concern about the quality of eggs than did the institutions. Sixty-nine percent of the commercial operators ranked quality as being of prime importance, whereas only 46 percent of the institutional operators ranked the quality of eggs first. Service, although important to both groups, was considered more important by the institutions than by commercial operators.

Tenure of Suppliers

Food service operations changed suppliers more frequently than grocery stores or manufacturing users of eggs. Of the 91 firms responding, 50 percent had changed egg suppliers during the past 5 years; the remaining 45 firms had not changed during this period. Major reasons for changing suppliers were problems with interior egg quality, price disputes, and inadequate service. Other reasons given by operators were billing problems, new management, and in four cases the managers' relatives needed outlets for eggs. Five operators reported, however, that their suppliers had quit them for unknown reasons, except all reported differences of opinions with their former suppliers.
Table 40.—Tenure of suppliers currently selling eggs to food service operations, by type and size of buyer

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Distributor</th>
<th></th>
<th>Jobber</th>
<th></th>
<th>Farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less than 5 years</td>
<td>Over 5 years</td>
<td>Less than 5 years</td>
<td>Over 5 years</td>
<td>Less than 5 years</td>
</tr>
<tr>
<td>Institutions</td>
<td>36</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 99 seats</td>
<td>25</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>100 - 150+ seats</td>
<td>29</td>
<td>12</td>
<td>11</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total</td>
<td>54</td>
<td>16</td>
<td>18</td>
<td>7</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total response</td>
<td>90</td>
<td>28</td>
<td>30</td>
<td>13</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>(Percentages by supplier)</td>
<td></td>
<td>(48.3)</td>
<td>(51.7)</td>
<td>(65.0)</td>
<td>(35.0)</td>
<td>(33.3)</td>
</tr>
</tbody>
</table>
Changes in suppliers were made less frequently among those operations purchasing eggs from farmers than either jobbers or distributors. And the highest rate of turnover occurred among firms purchasing from jobbers.

All respondents representing both the institutions and commercial restaurants expressed satisfaction with their current sources of supply. However, to quantify this attitude a second question was asked: "If your source of supply went out of business, from whom would you consider buying eggs?"

Results were mixed. For example, 40 of the 42 respondents representing the institutions would attempt to locate a new supplier similar in type to their current one, whereas only two would change or try to locate a farmer (producer) as a source of supply. The latter two respondents stated that the desire for fresh eggs or improved quality was the reason for their hypothetical change. In contrast, 6 of the 60 restaurant operators would change their sources of supply from farmers and jobbers to distributors, primarily for improved quality and service.

Food service operators changed individual egg suppliers more frequently than other outlets. However, they were considered reasonably satisfied with the types of suppliers that were serving as sources of shell eggs and egg products. Large distributors would stand to gain customers from both jobbers and farmers if changes were required in their current sources of supply.
PRICING PRACTICES

With few exceptions, the prices paid for eggs by food service operators were determined by the suppliers. About 82 percent of the operators reported paying the prices that suppliers set without benefit of negotiation, bids, or any type of agreement. About 17 percent of the buyers had verbal agreements with their suppliers to pay formulated prices based on the USDA Federal-State market news report. The price most often used was an average of the mostly-prices paid loose-in-cases to retail stores in major Ohio cities. However, operations buying 20 or more cases paid considerably less than this price.

Table 41.—Determination of prices paid by food service operations, by type and size of buyer

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Prices determined by Supplier</th>
<th>Bids</th>
<th>Agreement</th>
<th>by number of buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>18</td>
<td>17</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other institutions</td>
<td>23</td>
<td>12</td>
<td>2</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td>41</td>
<td>29</td>
<td>2</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td>62</td>
<td>54</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Other commercial</td>
<td>38</td>
<td>32</td>
<td>0</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td>100</td>
<td>86</td>
<td>0</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Total all operations</td>
<td>141</td>
<td>115</td>
<td>2</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td>(81.6)</td>
<td>(1.4)</td>
<td>(17.0)</td>
<td></td>
</tr>
</tbody>
</table>
Only two of the food service operators used competitive bidding to establish the prices paid distributors for eggs. One accepted bids annually for a year-round price on eggs by type, size, and grade to be delivered on a set schedule. A second large volume egg buyer accepted bids on a monthly basis.

The prices operators paid for shell eggs changed with the rather frequent fluctuations of the market quotations—or so operators thought. Food service operators rarely checked the market reports against their invoices for two reasons. First, price reports were not readily available and suppliers did not provide market price information. Second and probably their main reason for unconcern about prices, was that egg costs were a minor proportion of total inputs and operators were more concerned about avoiding problems with quality and supply than with prices.

There had been no appreciable changes in the methods used to determine prices during the previous 5 years. Most operators had been and remained satisfied with their current pricing methods. Variations in prices paid per dozen of eggs among food service operations were extreme ranging from 4 cents to 30 cents per dozen. Prices paid varied as much as 10 cents per dozen for eggs delivered to operations of equal size, buying the same grade and size, and located in the same area—but being supplied by different distributors. Although the data obtained were judged inadequate for generalizations, prices seemed to vary by type, size, and location of outlet; by type and size of supplier; by delivery problems encountered, such as traffic congestion; and, of course, by
the type and size of egg used. And as was learned later when inter-
viewing wholesale egg distributors, prices to food service operations
also varied according to credit standing and whether or not the buyer
was a regular or an off-and-on customer. The latter were relative,
however, to the volume purchased by the operator.

Few, if any, suppliers had well-established criteria for pricing
eggs to restaurants and other food service operations. This, combined
with the general disinterest in prices shown by operators, may partially
account for the wide variety of prices being paid by food service oper-
ations during the week of interview.

Although the entire matter of pricing must be examined more closely
before generalizations can be made, one simple pattern was observed:
Small restaurants, using 1½ or fewer cases of eggs per week, paid 3½
cents more per dozen for medium and 3 cents more for large eggs than
the larger restaurants buying 3 or more cases per week.

Institutions paid for eggs either on delivery or once a month.
Most, or 93 percent of the district food supervisors paid only once a
month; whereas 7 percent paid on delivery. Policy or custom were the
only reasons for this method of payment (Table 42).

In contrast, 67 percent of the commercial food service operators
paid for the eggs they received on delivery; about 20 percent monthly;
11 percent once a week; and 2 percent bi-weekly. Operators reported
that suppliers preferred payment on delivery, and for a majority, this
method was satisfactory.
Table 42.—Frequency of payment for eggs purchased by food service operations, by type and size of buyer

<table>
<thead>
<tr>
<th>Type and size of operation</th>
<th>Total respondents</th>
<th>Frequency of payment</th>
<th>On delivery</th>
<th>Once/week</th>
<th>Twice/month</th>
<th>Once/month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day schools</td>
<td>18</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>Other institutions</td>
<td>23</td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Sub-total</td>
<td>41</td>
<td></td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>38</td>
</tr>
<tr>
<td>Commercial:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restaurants</td>
<td>63</td>
<td></td>
<td>34</td>
<td>7</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Other commercial</td>
<td>39</td>
<td></td>
<td>34</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sub-total</td>
<td>102</td>
<td></td>
<td>68</td>
<td>12</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Total all operations</td>
<td>143</td>
<td></td>
<td>71</td>
<td>12</td>
<td>2</td>
<td>58</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
<td></td>
<td>(49.6)</td>
<td>(8.4)</td>
<td>(1.4)</td>
<td>(40.6)</td>
</tr>
</tbody>
</table>
Chapter V

THE MOVEMENT OF EGGS THROUGH WHOLESALE DISTRIBUTORS

PROCEDURE

An authoritative list of wholesale egg distributors\(^1\) was not available for the Columbus Metropolitan Area. And neither Columbus nor Franklin County maintained operating permits indicating whether or not an establishment sold eggs. Thus, a reasonably valid and complete list of wholesale egg distributors operating within the Columbus area had to be developed.

A tentative list was compiled from the previously completed surveys of grocery stores, bakeries, restaurants, and other food service operations. Since the establishments within most of these groups were randomly selected, a further check was necessary to determine the list's accuracy—whether or not these firms qualified by definition as a wholesale egg distributor. This check was made by direct telephone contact with a responsible officer of each establishment.

Customarily, wholesalers and brokers of meat, dairy, and frozen food products also handle shell eggs and sometimes egg products. There was no assurance, however, that: (1) All of the traditional outlets handled eggs or (2) That other wholesalers distributing general

\(^{1}\)See definitions in Appendix.
grocery or food items did not also handle eggs. Accordingly, a canvas was in order of all of the area's commercial establishments qualifying as potential egg wholesalers.

The yellow pages of the telephone directory again provided what was later judged to be highly accurate information. A list was developed of all the wholesale firms in Columbus, its suburbs, and 53 municipalities within an approximated 20-mile radius that advertised the sale of eggs and/or poultry as well as other foods and food-related products.

As further checks: the State's purchasing agent was questioned regarding their sources of eggs, names were obtained of firms storing eggs and egg products in the city's cold-storage plant during the previous 5 years, a local assembler-wholesaler of eggs submitted a listing of all his known competitors, and the list was then supplemented with unpublished data on file in the University's Department of Poultry Science.

The listed firms were then telephoned to determine: (1) If they were distributors of eggs or egg products; (2) If so, whether they sold eggs within the Columbus Metropolitan Area; (3) If so, whether wholesale to business users or retail to consumers; and (4) Their approximate volume of eggs sold annually.

A total of 103 wholesale distributors of food products was contacted. Only 30 sold eggs; 20 of which sold 50 or more cases of eggs per week in the Columbus metropolitan area on a wholesale basis. The
latter group was assumed to account for the major proportion of eggs wholesaled within Columbus by local or nearby distributors.

Sixteen of the Columbus Metropolitan Area's 18 largest volume\textsuperscript{1} wholesale egg distributors were interviewed using a prepared questionnaire (see Appendix H). Two additional, and somewhat unique, egg distributors—one non-commercial, the other commercial—were also interviewed. Both handled eggs on a qualified wholesale basis in the Columbus area. The non-commercial agency was the State of Ohio's central purchasing department. This agency purchased eggs in wholesale lots for the area's school lunch and welfare programs. The commercial establishment was the Columbus "Farmers' Market," which basically consists of a joined series of city-sponsored retail market stalls and sales stands. Although the sellers inhabiting the "market" are primarily retailers, they frequently wholesale eggs if such an action is considered advantageous.

Data were collected from all 16 wholesale egg distributors by personal interview during a 2-week period. It consisted of information on the firm's type of operation, products handled, procurement and sale of eggs, method of price determination, and services performed. These data are discussed in the following sections.

Data were also collected on the state agency and the farmers' market. But, because of their incomparability with the above operations, these establishments will be discussed separately.

\textsuperscript{1}Arbitrarily established as all firms with a recent history of selling 50 or more 30-dozen cases of eggs per week in wholesale lots.
DESCRIPTION OF FIRMS

All 16 of the operations interviewed were commercial businesses which wholesaled eggs in volume lots, primarily within the Columbus area. Their ownership and affiliation were varied. One operated as a local sales branch office of a federation of farmers' cooperative. Seven were independently owned and operated establishments—three of which also owned egg producing units. Three of the businesses were operated as product sales departments of local dairy product companies. The remaining five wholesalers were branch sales offices of nationally operating food processors; three frozen food distributors and two meat processors.

In essence, eight of the 16 wholesale egg distributors operated as autonomous units—functioning independently of other firms when making decisions. Three were privately owned firms. Also included was the cooperative which, although it did not fit the definition in terms of ownership, had been delegated almost absolute autonomy for making marketing decisions. The remaining eight establishments functioned as branches or departments of larger, more diversified food processors. Accordingly, they were permitted a minimum of independence of action from the parent or divisional organization.

Products Handled

Autonomous firms.--Four of the eight independently operating distributors marketed no commercial product other than shell eggs. All four firms assembled, processed, sold, and delivered eggs to a wide variety of outlets. Included were chain and independent grocery
stores, institutions, jobbers, restaurants, and various other businesses with food service operations. Each sold minor volumes of eggs on retail consumer routes. Their primary outlets, in terms of volume, were corporate chain groceries, independent grocery stores, and restaurants, in that order.

Farmers owned and operated three of these firms and produced their own egg supply. The fourth unit was owned by a nonfarm businessman who assembled his entire egg supply from local producers.

Both poultry meats and shell eggs were handled by the four remaining autonomous firms. All four assembled ungraded eggs from local producers and performed inplant processing—sorting, grading, and packing. Most of the cooperative's supply, however, was received in a processed state from member producers and/or cooperatives. Grocery stores, restaurants, and institutions were the major sales outlets for these firms. Only minor portions of their sales were made to bakeries, jobbers, and small food service operations.

Branch outlets.—Wholesale egg distributors classed as branch outlets comprised locally functioning departments of two meat processors, three dairy product companies, and three general food product companies. The meat and general food product companies operated on a national scale; the dairy companies within the central Ohio area.

Poultry sales departments of the two meat companies sold poultry meats, shell eggs, and frozen egg products. Their primary outlets for eggs were bakeries, restaurants, and institutions such as hospitals and schools. Neither company processed poultry products locally.
Both received their poultry meats and eggs in processed form from company-owned central distribution warehouses.

All three of the dairies wholesaled shell eggs and two retailed eggs on their milk routes. Assembling and processing was done locally. Sales were made to all major types of outlets with a minimum going to chain stores and bakeries.

Local sales branches of the three general food distributors handled egg products as well as various other frozen and dried foods. Two of the three sold both frozen and dried egg products; the third, only frozen eggs. With rare exception, these branches sold eggs only on a wholesale basis to outlets, such as bakeries, restaurants, and institutions. However, their major product movement was to bakeries with minor portions of frozen eggs being sold to restaurants that had bakeries.

Changes in Operation

Only two significant changes in operation during the previous 5 years were reported by the wholesale egg distributors. One branch outlet had closed down its shell egg processing operation and discontinued handling shell eggs on a regular basis. Although this distributor did not encourage orders for shell eggs, they would supply their regular wholesale meat customers on special order.

The second most significant change was the reported trend of all large volume shell egg wholesalers to reduce inplant processing and depend more on processing done by producer-suppliers and collectors. Some wholesalers that owned production facilities tended to hold their
own production relatively stable and assemble more eggs from independent producers as their business increased.

To reduce handling and transportation costs, distributors of frozen egg products were encouraging their customers to increase their minimum-sized orders. One company arbitrarily increased its minimum order for frozen eggs from 100 to 300 pounds. Other distributors were less definitive (authoritative) on minimum-sized orders but were tending in this direction.

EGG PROCUREMENT

Wholesale egg distributors operating in Columbus received eggs from five principal types of suppliers—producers, collectors, company-owned farm production units, assembly-processing plants, and breaking plants.\(^1\) Shell eggs were the only products received from the four types of suppliers first mentioned above. Frozen and dried egg products were all supplied by direct shipment from breaking plants.

About 5,900 30-dozen cases of shell eggs were purchased by wholesale distributors during the week interviewed (Table 43). This volume is as supplied by 132 different firms, representing 118 producers, 17 collectors, and 4 company-owned farm production units.\(^2\)

Of the total volume of shell eggs purchased, producers supplied 60.8 percent, collectors 34.9 percent, and company-owned farm production units 4.3 percent.

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\(^1\)See definitions in Appendix.

\(^2\)Company-owned assembly-processing plants are reported as collectors.
Table 43.—Source of shell egg supply for major Columbus, Ohio, wholesale egg distributors: firm class by volume received, number and type of supplier: one week

| Firm class        | Number | Cases | % of total | Number | Cases | % of total | Number | Cases | % of total | Number | Cases | % of total | Number | Cases | % of total | Number | Cases | % of total | Number | Cases | % of total |
|-------------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|--------|-------|------------|
| Autonomous       | 117    | 3,582 | 67.2       | 12     | 1,492 | 28.0       | 4      | 253   | 4.8        | 126    | 5,327 |
| Branch outlet     | 1      | 5     | .9         | 5      | 568   | 99.1       | --     | --    | --         | 6      | 573   |
| Total             | 118    | 3,587 | 60.8       | 17     | 2,060 | 34.9       | 4      | 253   | 4.3        | 132    | 5,900 |

Average number cases per supplier:

- Autonomous: 30.6 cases
- Branch outlet: 223 cases
- Total: 63 cases

\[a\] 30-dozen cases.
All of the producers supplying eggs to Columbus distributors were located within a hundred-mile radius of Columbus. And, although distributors receiving eggs from collectors were unsure, they believed the eggs were being collected from the nearby central Ohio area. In contrast, egg products were supplied by five midwestern breaking plants—all owned by the branch outlets' parent companies.

Characteristics of Supply

Except for cartoning, egg processing was an activity performed by suppliers. Frozen and dried egg products were received by local distributors completely processed and delivered in 18, 30, or 100 pound tins and in bulk. Ohio shell egg producers and collectors supplied approximately 5,646 cases to Columbus distributors of which 100 percent were washed, 90 percent sized, 85 percent graded for quality, and 10 percent cartoned. The remainder was delivered unclassified and packed loose in cases (Table 44).

Collectors, in general, performed more extensive egg processing than producers. They sized and graded a greater proportion of their supply and cartoned about 27 percent of the volume shipped into Columbus. Most of the eggs being cartoned by collectors, however, were being trucked directly to the contracting distributor's customers.

---

Shell egg processing includes washing, sizing, grading for interior and exterior quality, and packaging.
Table 44.—Characteristics of shell eggs received by wholesale egg distributors by type of supplier, volume and degree of processing performed

<table>
<thead>
<tr>
<th>Type of supplier</th>
<th>Total eggs received</th>
<th>Volume by degree of processing (30 dozen cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Washed</td>
<td>Sized</td>
</tr>
<tr>
<td>Producer</td>
<td>3,587</td>
<td>3,587</td>
</tr>
<tr>
<td>(％ of sub-total)</td>
<td>(100.0)</td>
<td>(100.0)</td>
</tr>
<tr>
<td>Collector(^a)</td>
<td>2,059</td>
<td>2,059</td>
</tr>
<tr>
<td>(％ of sub-total)</td>
<td>(100.0)</td>
<td>(100.0)</td>
</tr>
<tr>
<td>Total received</td>
<td>5,646</td>
<td>5,646</td>
</tr>
<tr>
<td>(％ of total)</td>
<td>(100.0)</td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

\(^a\)Includes branch outlet's supplier—a company-owned assembly plant.
Determination of Purchases

Wholesale egg distributors exhibited little evidence of long-range planning for egg procurement. Six of the 11 shell egg distributors based purchases on short-run projections of sales. Egg product distributors based their purchases on volumes contracted and short-run estimates on the needs of their regular customers. Projections were based on experience and for weeks and months just ahead and involved consideration of the season—primarily summer, in contrast with the rest of the year—paydays, and holidays. Most expected to sell to their regular customers on a continuing or indefinite basis. Thus, ordering eggs became primarily a matter of predicting how many eggs outlets could sell and relaying these orders to their suppliers.

Four of the shell egg distributors practiced "taking all of their suppliers' eggs and getting rid of them" even though they had no particular sales outlets in mind for an excess supply. All four stated that overages, when they occurred, were kept in storage or sold to larger distributors. These distributors reported experiencing a relatively stable volume of both sales and supply over the past 5 years and that overages were rare.

One firm, however, planned ahead on both sales and supply for periods up to 10 years. New outlets were constantly being solicited for both current and future sales. And expanded as well as new sources of supply were developed to meet expected sales. During the previous 5 years this firm had maintained an annual growth rate varying from 12 to 18 percent.
Buying Agreements

Over 90 percent of the eggs sold to the wholesale egg distributors were traded on the basis of a mutual verbal agreement. These agreements were indefinite regarding time, but covered minimum volumes of eggs, the degree of processing, quality specification, pricing, and delivery. Most shell egg distributors felt that written contracts were unnecessary. And the egg product distributors were branch outlets or local sales branches of suppliers, thus supply contracts were not required for an orderly flow of products.

One shell egg distributor, however, used written agreements or contracts with a majority of his suppliers. Some of the contracts were let to protect invested capital and others to assure producers a steady market for their eggs.

Determination of Supplier

Quality of shell eggs and dependability of supply were the most important factors to wholesale egg distributors when determining a source of supply, volume ranked third, and prices paid were considered least important (Table 45). All of the respondents felt that quality and a dependable supply were of equal importance. And the larger distributors provided substantial technical assistance to producers to insure a high quality egg supply.
### Table 45.—Estimated importance of factors of supply to wholesale shell egg distributors, by nine firms

<table>
<thead>
<tr>
<th>Rank of Importance</th>
<th>Quality</th>
<th>Dependable</th>
<th>Volume</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Second</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Third</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

*Includes only shell egg distributors buying from independent suppliers. Firms account for 92 percent of total volume handled by all respondents.*

*In every case, respondents felt that quality and either dependability or volume was of equal importance, thus fourth degree of importance was not distinguishable.*
Distributors purchasing shell eggs from collectors reported more problems with quality, especially breakage, and price than those buying from producers. In contrast, however, they had fewer problems concerning volume, especially with respect to different size classes, delivery, and a steady supply of eggs.

Branch outlets, on the other hand, were concerned primarily with price and secondarily with quality when ordering egg products from company-owned facilities. The volume and physical movement of egg products were of little concern. Their respective company's supplying units were both large and flexible enough in their operations to insure these factors.

Wholesale distributors, in general, reported relatively few problems with their sources of supply. However, distributors purchasing eggs from producers expected increasing difficulties in the future. This was especially true for those distributors who had not assisted producers in enlarging and developing more efficient operations. Most expected it would be necessary to purchase a larger percentage of their supply from collectors in the near future. Why? The smaller production units were reportedly going out of business, and relatively few independent production units were being established.

Egg distributors currently purchasing shell eggs from producers preferred to maintain this source of supply. Most felt that they "could not make money otherwise" due to the decrease in margins received on eggs purchased from collectors. In addition, the distributors would be less able to control the cost of processing since this activity would be performed by the collector.
In contrast, egg distributors buying from collectors preferred to keep this source of supply. These buyers were more concerned with obtaining large volumes of eggs on a regularly scheduled basis than they were with processing costs and price margins.

Services to Suppliers

Wholesale distributors of shell eggs provided services to their suppliers such as picking up eggs, serving as a steady outlet and providing market price quotations. Most of them were designed to maintain the producer or collector as a regular source of egg supply. In contrast, egg product distributors provided only a line of communication between the business user and their source of supply. However, being branch sales outlets, there were few services other than the communication information that could be provided their parent companies.

All of the shell egg distributors served their suppliers as regular or steady outlets for eggs. However, only 62 percent provided market information, about 54 percent provided at farm or station pick-up of eggs, and only one distributor provided credit to suppliers. Five of the seven distributors that bought eggs directly from producers reported purchasing all of their production, including their over-supply—volume in excess of normal production that might accrue during peak laying periods. The provision of technical assistance was reported by only one distributor. This distributor provided his producer-suppliers with management services ranging from professional assistance on production to egg processing and shipment.
Table 46.--Services extended to shell egg suppliers by wholesale egg distributors, by type of services and supplier

<table>
<thead>
<tr>
<th>Type of supplier</th>
<th>Total buyers</th>
<th>Extend credit</th>
<th>Farm pickup</th>
<th>Buy all eggs regularly</th>
<th>Provide market news</th>
<th>Take over-supply</th>
<th>Serve as steady outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers</td>
<td>7</td>
<td>1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Collectors</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13&lt;sup&gt;b&lt;/sup&gt;</strong></td>
<td><strong>1</strong></td>
<td><strong>7</strong></td>
<td><strong>5</strong></td>
<td><strong>8</strong></td>
<td><strong>6</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup>Limited to capital investment.

<sup>b</sup>Two distributors purchased from both producers and collectors.
Services Received from Suppliers

Suppliers, in contrast, provided numerous services to egg distributors, including processing, cartoning, credit, delivery, and stability of supply. A majority of the wholesale firms received their eggs processed and delivered on a regular basis. And most received credit (Table 47). Cartoning, however, was an activity generally performed by the egg distributor within his own plant. And, except for one supplier of egg products, suppliers did not take back the overages of distributors, as is common in certain other food channels. Neither could suppliers be counted on by distributors for spot calls for additional eggs. When shortages occurred, eight of the 11 egg handlers practiced buying from other wholesalers. Two distributors

Table 47.--Services provided by egg suppliers to wholesale egg distributors, by type of service and firm receiving

<table>
<thead>
<tr>
<th>Type of firm receiving</th>
<th>Process</th>
<th>Carton</th>
<th>Deliver</th>
<th>Extend credit</th>
<th>Regular supply</th>
<th>Take back overages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomous</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Branch outlets:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shell egg</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Egg products(^a)</td>
<td>5</td>
<td>N/A(^b)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^a\)All branch outlets handling egg products receive technical services from their suppliers.

\(^b\)Packed in 30-pound or larger tins.
contacted either collectors or had shipments delivered from Chicago when they needed additional eggs.

**EGG SALES**

The principal wholesale markets for shell eggs in Columbus were grocery stores, restaurants, institutions—primarily schools and hospitals—and jobbers. Three wholesale egg distributors sold eggs on retail consumer routes. However, the volume marketed in this manner was relatively insignificant, as indicated in Table 49.

Major outlets for frozen and dried egg products were the bakeries, restaurants, and manufacturers of noodles, salad dressing, and ice cream. Bakeries were the prime outlets. The restaurant use of egg products was limited primarily to those operations with bakeries attached. However, a few restaurants, hotels, and industrial plant food service operations used frozen eggs for cooking.

These food service operations were the only market outlets where there tended to be substitution between types of products—shell eggs and frozen eggs. Although egg product distributors were encouraging the use of frozen and dried eggs in cooking—and were providing technical services to this end—very few food service operations were using them.

**Importance of Shell Egg Outlets**

Corporate chain groceries, independent groceries, restaurants, and institutions, in that order, were the most important outlets for shell egg distributors selling over 300 cases a week (Table 48). The
Table 48.—Market outlets for eggs sold to by wholesale egg distributors, by type and number of firms using

<table>
<thead>
<tr>
<th>Type of distributor (by product)</th>
<th>Market outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chain groceries</td>
</tr>
<tr>
<td>Shell eggs</td>
<td>5^a</td>
</tr>
<tr>
<td>Egg products</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
</tr>
</tbody>
</table>

^a Two were fill-in suppliers.

^b Primarily restaurants and other food service operations with bakeries. However, a few restaurants, hotels, and manufacturing plant cafeterias used egg products in cooking.

^c Principally, manufacturers of noodles, salad dressing, and ice cream.
groceries were especially important to large distributors because of their volume and regularity of egg sales. Restaurants, particularly the large volume users, were important because of the higher margins on price received by distributors. Sales to jobbers and at retail were considered the least important, primarily because of the irregularity of sales in volume.

Egg distributors handling over 300 cases a week felt their volume of operation, in conjunction with consistently high quality eggs and ability to operate on lower margins above cost, permitted them an advantage over smaller distributors in retaining the large accounts.

The most important outlets for firms handling fewer than 300 cases of shell eggs per week were the independent groceries, restaurants, and at retail. None sold eggs to chain groceries. Sales to groceries were important because of the volume taken; to restaurants and retail routes because of the higher price margins received. Sales to jobbers and institutions were considered relatively unimportant, primarily because of the fluctuations in volumes sold to these outlets.

The smaller distributors felt their greatest assets to the market, and thus as a competitor for firms selling over 300 cases per week, were service and quality of product. Each realized he could not compete with large handlers on the basis of volume and price of eggs.

No changes had occurred in the types of outlets served by wholesale egg distributors during the past 5 years. However, the large volume distributors had become more selective in their choice of outlets. Shell egg wholesalers handling over 300 cases a week reported
an increasing percentage of total sales going to groceries and a decreasing proportion to the smaller independent groceries and restaurants. The larger distributors were becoming increasingly more competitive with small volume distributors for the larger independent grocery and restaurant accounts. Also, they more readily dropped the accounts of problem causing outlets and those located in areas with serious traffic problems, such as the downtown and University areas.

Distributors selling fewer than 300 cases of eggs per week reported no significant changes in outlets served. However, they did indicate having difficulty in keeping their current accounts—especially if larger distributors became interested in them.

**Sale of Shell Eggs**

The wholesale movement of shell eggs in Columbus is concentrated among the relatively few distributors that sell over 300 30-dozen cases per week. These firms accounted for 88 percent of the total volume of eggs sold by Columbus distributors; 12 percent of the volume were handled by distributors selling less than 300 30-dozen cases a week.

Columbus egg distributors sold 5,886 30-dozen cases of shell eggs during the week interviewed. Sales were 14 cases less than were procured by distributors during the week (Table 49).
Table 49.--Volume of shell eggs sold in Columbus by wholesale egg distributors during week of interview, by volume and type of outlet

<table>
<thead>
<tr>
<th>Size of distributor (volume)</th>
<th>Market outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total sales</td>
</tr>
<tr>
<td></td>
<td>(percentage)</td>
</tr>
<tr>
<td>More than 300 cases/week</td>
<td>5,186</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
</tr>
<tr>
<td>Less than 300 cases/week</td>
<td>700</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
</tr>
<tr>
<td>Total</td>
<td>5,886</td>
</tr>
<tr>
<td>(Percentage)</td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

a Sales at place of business or on retail routes.

b Small, but insignificant amounts of eggs were sold at retail. The volume sold was so small that respondents did not keep records of such sales.
Grocery stores purchased 69.9 percent of the total volume of shell eggs sold during the week; 38.7 percent to chain groceries; and 31.2 percent to independent groceries. The remaining volume went to restaurants, 11.5 percent; jobbers, 12.3 percent; institutions, 5.3 percent; and to bakeries or at retail, 1.0 percent.

Distributors handling over 300 cases a week supplied the total volume of shell eggs going to chain groceries and most of the volume to all other outlets, except at retail. Firms handling fewer than 300 cases a week did not sell to chain groceries, except as fill-in suppliers. Most of their volume went to the independent groceries, restaurants, and jobbers with a few being sold to institutions and on retail routes.

All of the egg distributors sold eggs at retail, however, only those selling fewer than 300 cases per week operated consumer retail routes. The larger distributors, those selling more than 300 cases a week, all sold eggs at retail but limited these exchanges to counter sales within their places of business. As such, retail sales accounted for an insignificant proportion of the large egg distributors' total volume.
Characteristics of Shell Eggs Sold

Over 95 percent of the eggs sold by distributors to outlets within Columbus were sized and over 85 percent were graded. The following outline lists the basic characteristics of shell eggs sold to the major outlets:

1. Chain groceries: 100 percent grade A; 100 percent cartoned, most with outlet's brand; mostly medium to large, but some small with a larger proportion of extra large.

2. Independent groceries: Over 80 percent grade A, 20 percent grade B, rest unclassified; 96 percent cartoned, rest loose in case; mostly medium to large, but ranging from pullet to extra large with substantial volume of small.

3. Restaurants: Over 90 percent grade A, 10 percent unclassified; 100 percent loose in case; 70 percent large, 30 percent mixture of small, medium, and extra large.

4. Institutions: Mostly grade A, rest unclassified; 100 percent loose in case; mostly medium to large, but some small.

5. Jobbers: All grades; all sizes, mostly loose in case, but some cartoned.

6. Bakeries: 100 percent grade A; 100 percent loose in case; mostly large, but some extra large.

7. Retail routes: 100 percent grade A; mostly cartoned, but some sacked; mostly large, but some small, medium, and extra large.

Total Movement of Shell Eggs

Columbus wholesale egg distributors supplied approximately 410,000 30-dozen cases of shell eggs to outlets within the metropolitan area during 1962 (Table 50). Of the total, 88 percent were sold by
distributors handling over 300 cases per week; the remaining 12 percent
by distributors handling fewer than 300 cases per week.

Table 50.—Fluctuation, seasonal trend and annual sales of shell eggs
of wholesale egg distributors, by size, 1962

<table>
<thead>
<tr>
<th>Size of distributor (volume)</th>
<th>Average volume sold</th>
<th>September through April</th>
<th>May through August</th>
<th>Trend during Summera</th>
<th>Annual volume soldb</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 300 cases/week</td>
<td></td>
<td>5,810</td>
<td>5,125</td>
<td>-11.8%</td>
<td>290,913</td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td></td>
<td>-8.6 to -20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 300 cases/week</td>
<td></td>
<td>823</td>
<td>707</td>
<td>-14.1%</td>
<td>40,875</td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td></td>
<td>-5.9 to -36.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>6,633</td>
<td>5,832</td>
<td>-12.1%</td>
<td>(331,788)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>409,783c</td>
</tr>
</tbody>
</table>

aWeighted averages.
bDistributors estimates based on records.
cIncludes two additional distributors for which prior data were not available. Both were in the above 300 class.

Distributors reported a downward fluctuation in shell egg sales
during the late spring and early summer. Reductions in sales averaged
about 12.1 percent—or about 800 cases per week—when compared with
average weekly sales during the remaining 8 months of the year. The
greatest reduction in sales was experienced by distributors selling
less than 300 dozen a week, or about 14.1 percent.
Distributors reported fluctuations in egg sales throughout the year, especially during payday and holiday weekends. However, none were as significant as the downward trend in sales during summer or from May through August. All market outlets had lower sales but varied by type as indicated in the following comments.

1. Chain groceries: Sales down from 15 to 20 percent.
2. Independent groceries: Sales down about 10 percent.
3. Restaurants: Sales down from 10 to 15 percent; however, drive-in restaurants' sales increased 15 to 20 percent.
4. Jobbers: Sales generally down, but with violent fluctuations.
5. Institutions: Sales down about 10 percent.
6. Retail routes: Fairly steady, but down slightly.

Sale of Egg Products

The wholesale movement of egg products to Columbus business users was concentrated among six local distributors--five commercial firms and the State's purchasing agency. Over 3.2 million pounds of frozen eggs and 277,000 pounds of egg solids were used by Columbus businesses and institutions during the year. Local distributors supplied 59.3 percent of the frozen eggs and 68.2 percent of the egg solids used. The remainder of both types of eggs was sold and delivered directly to users either by the main corporate offices of local branch outlets or from wholesale egg product distributors headquartered elsewhere in Ohio.
Bakeries used about 85 percent of the frozen eggs sold in Columbus. Of the total volume of frozen eggs distributed, 69.1 percent were sold to bakeries with over 50 employees each; 17.6 percent went to smaller bakeries and food service operations with bakeries and/or candy shops; and 13.3 percent were sold to the manufacturers of miscellaneous food products. In contrast, most of the egg solids distributed locally were used by confectioneries. Of the total volume sold, 30.3 percent were used by confectioneries, 23.2 percent went into the manufacture of miscellaneous food products, and 19.0 percent were used by bakeries. The latter group include food service operations with bakeries and candy shops. Over 76,000 pounds of egg solids, or 27.5 percent, were handled by the State of Ohio for institution and welfare use in Columbus.

Sales Arrangements

A verbal agreement or mutual understanding was the predominate sales arrangement between buyers and sellers of shell eggs. In essence, this arrangement amounted to a standing order from the customer to buy; and a standing agreement by the distributor to supply. Such agreements generally included the terms of sale, such as volume of eggs by grade and size, packaging specifications, pricing formula, delivery schedule, and method of payment. Not all agreements, however, covered pricing eggs.

Egg distributors had verbal sales agreements with about 75 percent of their customers; the remainder was call-up or spot orders. Spot orders were most frequently used by large volume distributors,
especially with new customers and with outlets where the distributor was a secondary or fill-in supplier.

Most distributors preferred the verbal agreement over the written contract because the former permitted them greater flexibility in their operations. Still, written agreements were used, although they were an exception. Two of the larger distributors used contracts with the State, corporate chains, and with some of the larger independent groceries. In all cases, written agreements were made if the customer preferred them. Otherwise, verbal agreements were completely satisfactory to the wholesale distributors of shell eggs.

Egg product distributors, on the other hand, used written contracts with most of their customers, especially the larger volume users. Their contracts were let from 30 to 90 days, to 1 year, depending upon the customer's needs. These contracts usually covered every facet of the sale and delivery of egg products. Most egg product distributors preferred written contracts for the protection they afforded; their customers wanted them for the same reasons. Each of the distributors traded on the basis of verbal agreements and spot orders. These sales arrangements, however, were estimated to apply to less than 20 percent of their total volume of sales.

Services to Customers

Egg delivery and credit were provided customers by all wholesale egg distributors (Table 51). In contrast, none supplied market information and advertising materials. Most served as fill-in suppliers.
Table 51.--Services performed for customers by wholesale egg distributors, by type of firm

<table>
<thead>
<tr>
<th>Type of firm</th>
<th>Number of firms</th>
<th>Type of service</th>
<th></th>
<th></th>
<th></th>
<th>Market information</th>
<th>Serve as fill-in supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Process</td>
<td>Carton</td>
<td>Delivery</td>
<td>Credit</td>
<td>Advertising</td>
<td></td>
</tr>
<tr>
<td>Shell egg</td>
<td>11</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Egg products</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>7</td>
<td>9</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
However, technical information and assistance was supplied only by the distributors of egg products.

Deliveries by the large firms to individual outlets had become stabilized at three a week, but were made daily if needed. Customers were being encouraged to maintain inventories adequate to support this schedule. Distributors selling fewer than 300 cases of eggs per week made fewer deliveries to customers; from one to three a week. And all firms discouraged special deliveries.

Credit was extended to qualified customers by all of the egg distributors. However, many customers preferred to pay cash-on-delivery and only one distributor refused this method of payment. The maximum period for payment without penalty ranged from 7 to 30 days—although all distributors extended credit up to 60 days for institutions. Upper limits on credit extensions varied by individual customer.

Firms supplying shell eggs applied a rather general policy of doubling the normal period of credit before demanding payment. However, up to 6-month extensions on credit were made to customers if the distributor felt they could and would pay. Distributors reasoned that since relatively small amounts of money were involved, more stringent policies would cause rather than reduce operating problems.

Egg product distributors varied extensions on credit by firm and from maximums of 7 to 50 days without penalty. Generally, if payment was delayed longer than this period, only cash on delivery orders were accepted until accounts were paid up and credit re-established.
Customer Expectations

Customers of wholesale firms wanted high quality eggs of uniform size and at a reasonable price. Consistency of quality and service was required, and "bad" or inedible eggs were not tolerated. These were what customers expected—and received—in the opinion of all distributors wholesaling shell eggs and egg products (Table 52).

In turn, customer expectations affected the shell egg distributor's choice among suppliers; although, they did not affect the type of supplier used, such as between producer and collector. And, even though the distributors handling egg products had no alternatives among suppliers, the customers' complaints were forwarded to their suppliers. Each was confident that corrective action was quickly taken on every complaint concerning the product's physical properties.

The most frequent complaints distributors received from customers involved quality and price. Although some problems with the interior quality of shell eggs were reported, most dealt with breakage; a problem distributors claim occurs from mishandling by the customer. Complaints about prices were the major problems of egg product distributors; a problem they reportedly could not resolve.

PRICING PRACTICES

Buying Practices

The prices distributors paid suppliers for shell eggs were based on pricing formulas negotiated between individual buyers and sellers. Most formulas were secured by mutual or verbal agreements. However, a few were formalized through written contracts. The formula used
Table 52.--Importance of supply factors to customers as ranked by wholesale egg distributors, by type of customer and factor of supply

<table>
<thead>
<tr>
<th>Type of customer</th>
<th>Rank of factor&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Factor of supply</th>
<th>number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>High quality&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Uniform quality</td>
</tr>
<tr>
<td>Shell egg&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td>Price</td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>4</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Second</td>
<td>3</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Third</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Egg products&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>First</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Second</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Third</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fourth</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup> No respondent ranked a factor fourth or fifth in importance. No respondent ranked a factor fifth in importance.

<sup>b</sup> High quality is relative. However, as explained in earlier chapters, the customer's definition translated into technical terminology means grade A or better.

<sup>c</sup> Eleven respondents.

<sup>d</sup> Five respondents.
varied by distributor; the volume, grade, and size of eggs received; whether delivered or picked up; and by the type of supplier.

All prices for shell eggs, however, were based on published market reports; either the USDA Federal-State Market News Service report or the Urner-Barry Company's New York report. The Federal-State market report includes egg prices of several markets but elaborates on prices paid in the Ohio-Indiana area by source, type of processing, and characteristic of sale. The Urner-Barry Company is a private firm which reports New York wholesale prices for eggs daily.

Of the total volume of shell eggs purchased by distributors, 54 percent were priced using the Federal-State market report as a base; 46 percent of the volume were priced using the Urner-Barry market report. And, although the methods for using these bases varied, some general patterns of pricing were established. These are listed below in outline form:

<table>
<thead>
<tr>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices paid to producers: (washed only)</td>
</tr>
<tr>
<td>Prices paid to producers: (processed loose)</td>
</tr>
</tbody>
</table>
Urner-Barry New York report: Paid white--5 day average price by grade and size for eggs received during week. Cases exchanged.

Prices paid to collectors: USDA market report: Prices paid to country packing plants; paid average price by grade and size for delivered eggs--loose price for loose-in-case, and cartoned price for cartoned eggs. Prices based on day received. Cases exchanged.

However, 3 distributors used low prices paid for eggs cartoned and delivered to retail stores. (Eggs delivered to distributor) Cases exchanged.

Egg product distributors had no control over the prices they paid their suppliers for eggs. All were branch outlets of larger companies whose main offices established prices. Distributors reported that egg product prices were established according to the Chicago Merchantile Exchange prices in conjunction with their evaluation of local competition. The local distributors pay a set price plus freight and storage.

Selling Prices

The prices distributors charged customers for shell eggs were established in three different ways: (1) negotiated price formulas using published market reports as a base, (2) a straight mark-up from cost, and (3) a set quotation using the USDA market news report. The major volume of eggs sold was traded using price formulas and either verbal or written agreements. However, most of the outlets from among the independent groceries, restaurants, institutions, and jobbers
received eggs which were priced using either the straight mark-up or set quotation methods. And, except for the larger independent grocery stores and a few restaurants, price agreements were not generally used by these outlets.

Egg product distributors used written contracts with their customers more extensively than did shell egg distributors. All five firms used written agreements with their large volume customers, and either written or verbal agreements with the remainder of their regular customers. Most of the contracts ranged from 30 to 90 day orders, however, some were as long as 1 year.

All of the corporate chain organizations purchased shell eggs from distributors on the basis of negotiated price formulas. The base most often used was the Urner-Barry Company's quotations on New York, 60 percent grade A eggs. Prices paid ranged from 5 to 8 cents per dozen above this base; 5 cents over on medium and 8 cents on large eggs. The distributors supplying chain groceries generally charged higher prices to other outlets, depending on current competitive conditions and the prices quoted in the USDA market report.
Table 53.—Average prices paid for shell eggs received from wholesale distributors, by type of outlet, during week of interview

<table>
<thead>
<tr>
<th>Grade and size of eggs</th>
<th>Type of outlet</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chain Groceries</td>
<td>Independent Groceries</td>
<td>Restaurants</td>
<td>Consumer Retail Route</td>
<td></td>
</tr>
<tr>
<td>A-large</td>
<td>42</td>
<td>46</td>
<td>48</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>A-medium</td>
<td>35</td>
<td>37</td>
<td>38</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>A-small</td>
<td>--</td>
<td>30</td>
<td>32</td>
<td>38</td>
<td></td>
</tr>
</tbody>
</table>

a All cartoned, delivered, and cases exchanged.

b Eggs were shipped loose in cases; 3 cents added per dozen to cover cost of carton and cartoning.

c Prices rounded to nearest whole cent.

As indicated in the table above, the prices charged by type of outlet tended to increase as the volume received reduced in size. This trend was also indicated, though not so pronounced, by the margins charged by distributors using the straight markup method of pricing. For example, the range in markup to consumers was from 12 to 17 cents, usually 12; to independent groceries from 10 to 12 cents, usually 10; to restaurants from 9 to 10 cents, usually 10 (usually 13, if cartoned); and to jobbers from 6 to 10 cents, usually 6 to 7.

A similar pattern of pricing was established by distributors using the set quotation method. The Federal-State news report's top price paid for eggs delivered to retail stores was the base from which
most of these prices were developed. For example, the prices charged consumers were usually "top prices paid" plus 5 cents; to restaurants, plus 0 to 2 cents (3 to 5 cents if cartoned); and to grocery stores plus 2 to 4 cents.

As a general practice, egg distributors charged irregular or off-and-on customers a higher price for eggs than was paid by their regular outlets. Price premiums ranged from 1 to 2 cents per pound or dozen if the eggs were picked up by the customer, and from 1 to 5 cents when delivered. This practice was only used, however, for those customers that held no potential as regular, full-time customers.

Regular prices were charged off-and-on customers that normally used 300 pounds or more of egg products or 8 or more cases of shell eggs per week. Distributors reasoned that the extra cost of service could be condoned since these buyers were potential, full-time customers. Still, most distributors admitted that this practice rarely induced irregular customers to become regular ones.

Price Changes

The prices paid for shell eggs changed with the rather frequent fluctuations of the market quotations. Although most distributors seemed satisfied with constant price fluctuations, the distributors handling about 80 percent of the total volume of eggs sold were not. They preferred less changing prices. All distributors reported their most serious problems occurring during price changes. Although pricing formulas were used, disagreements occurred between distributors and suppliers during periods of fluctuating prices. Most disagreements
were price related, however, many were about other topics. The distributors felt these disagreements were stimulated by price changes—especially downward trends. All distributors had used their current method of pricing during the past 5 years, and although some were unsatisfied, they knew of no other method to replace it.

The prices received by wholesale shell egg distributors changed frequently—regularly 2 to 3 times a week and daily during some periods. Prices to most of the large volume users, especially the chain groceries and larger independent grocery stores, were based on published market news reports. Thus, prices changed as market quotations changed. And, due to their greater use of market reports, distributors selling over 300 cases of eggs per week had a higher frequency of price changes than smaller distributors.

Few, if any, of the shell egg distributors were satisfied with frequently changing prices. However, they felt that there was little, if anything, they could do about it. Some had attempted to maintain steadier prices. But, their competitors had not acted similarly, and they had been forced back to changing prices as the market changed.

In contrast, egg product distributors experienced a minimum of price changes. Most of their volume was sold on 30 to 90 day contracts to large volume users, such as bakeries, confectioneries, and other food manufacturers. These contracts usually called for a single price to be charged for their duration, thus changes in price were relatively infrequent.
Chapter VI

SUMMARY AND FINDINGS

Study of the distribution channel is basic to the understanding of the marketing process. It is basic because it focuses upon the essential nature of marketing: the interactions among commercial institutions and between these institutions and the consumer. It is basic because it probes the mechanism through which the private enterprise marketplace operates.

This study has focused upon: (1) the character of the metropolitan area's central distribution channel; (2) the types of relationships firms established with other institutions to market a product; and (3) charting the positions of various channel groups in terms of their relative volume of trade held.

The purpose of this study was, through description, to develop and convey an understanding of the market channels for eggs within the Columbus, Ohio Metropolitan Area. And in doing so, provide a foundation for analytical research on the market system's structure including conduct and performance; how it performs and how well it performs. These purposes were accomplished. The study provides basic information on the character and interrelationships of institutions comprising the marketplace from which in-depth research can be done on any one segment—with considerable knowledge of its relationships to the whole—, projections made, and guidelines for change or improvement be developed for the industry.
The answers to specific questions as set forth in the objectives have been provided for each segment of the market channel within their respective chapters. Accordingly, this summary is limited to a consolidation of the channel information and to reiterating some of the more pertinent observations.

Total Movement of Eggs

Based on this survey, an estimated 207 million eggs or 574,473,30-dozen cases\(^1\) of eggs were purchased by business users and retail outlets in Columbus during 1962. Grocery stores and food service operations, such as restaurants, bakeries, and other manufacturing users of eggs purchased 491,273 cases or 85 percent of the total movement. Two additional market outlets, dairy companies and miscellaneous retail outlets, accounted for the remaining 83,200 cases or about 15 percent of the movement (Table 54).

Shell eggs comprised the major proportion of the total movement, accounting for 79 percent of the total volume purchased. The remaining 21 percent of the movement were egg products, both frozen eggs and egg solids.

Wholesale egg distributors\(^2\) based in Columbus supplied 347,388 cases or 76 percent of the shell eggs and over 62 percent of the egg products purchased by Columbus' business users and retail firms. The

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\(^1\)Egg products included and converted to shell egg equivalents.

\(^2\)Distributors handling 50 or more cases of eggs per week.
Table 54.—Estimated wholesale movement of eggs within the Columbus Metropolitan Area, by type of outlet, 1962

<table>
<thead>
<tr>
<th>Type of outlet</th>
<th>Volume of shell eggs purchased</th>
<th>Volume of egg products used</th>
<th>Total movement of eggs based on survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30-dozen cases</td>
<td>pounds, liquid</td>
<td>30-dozen cases</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>276,220</td>
<td>0</td>
<td>276,220</td>
</tr>
<tr>
<td>Food service operations</td>
<td>93,753</td>
<td>325,834</td>
<td>101,978</td>
</tr>
<tr>
<td>Bakery firms</td>
<td>289</td>
<td>3,295,404</td>
<td>84,004</td>
</tr>
<tr>
<td>Dairy companies</td>
<td>67,600</td>
<td>0</td>
<td>67,600</td>
</tr>
<tr>
<td>Food manufacturers⁵</td>
<td>970</td>
<td>1,027,000</td>
<td>26,970</td>
</tr>
<tr>
<td>Miscellaneous retail</td>
<td>15,600</td>
<td>0</td>
<td>15,600</td>
</tr>
<tr>
<td>Confectioneries</td>
<td>0</td>
<td>83,000</td>
<td>2,101</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>454,432</strong></td>
<td><strong>4,731,238</strong></td>
<td><strong>574,473</strong></td>
</tr>
</tbody>
</table>

⁵Manufacturers of products other than baked goods and confections, such as noodles, salad dressing, and sauces.
remaining 24 percent of shell eggs and 38 percent of egg products were supplied principally by one corporate grocery chain and three large volume wholesale egg distributors headquartered some distance from the metropolitan area.

Based on the literature, the outlets handling the largest volume of eggs were expected to be the grocery stores, food service operations, and bakeries, in that order. This was found to be the pattern of movement within Columbus where 48.1 percent of the total volume of eggs was handled by grocery stores, 17.7 percent by food service operations, and 14.6 percent by bakeries. The remainder was handled by dairy companies, 11.8 percent; manufacturers of food products, such as noodles, salad dressings, and sauces, 4.7 percent; confectioneries, 0.4 percent; and miscellaneous retail establishments, 2.7 percent.

Movement of Shell Eggs

The wholesale movement of shell eggs within the Columbus Metropolitan Area was concentrated among a relatively few distributors who sold over 300, 30-dozen cases per week. Four locally based firms accounted for over 88 percent of the total volume of eggs sold by Columbus distributors, whereas 12 percent of the volume were handled by firms selling from 50 to 300, 30-dozen cases per week.

Three of the four largest volume suppliers were assembler-distributors as contrasted with brokers or producer-distributors. Most of their eggs were received in a processed state directly from producers rather than from collectors—or country assembly plants—as was expected.
One distributor, however, operated as a functional middleman or wholesaler and received completely processed eggs from member cooperatives which were, in effect, country assembly plants.

Because of the potential economies of size and specialization in combination with locational advantages, such as a more perfect knowledge of the market and shorter delivery routes, coupled with a desire by retail outlets for a uniform, high-quality product, there were expected to be large vertically integrated production units located in or near the market. This was not the case; although, about 20 local producers distributed eggs within the metropolitan area, most had less than 5,000 laying hens.

Large distributors handling over 300 cases of eggs per week were the only local sources of supply used by the corporate grocery chains. In addition, these distributors supplied a majority of the larger independent grocery stores, restaurants, and institutions. Foremost among the reasons given was that large volume users required a dependable, uniform, and high quality supply of eggs in large quantities, and only the larger distributors could assure these factors. Large volume users purchased some eggs from smaller distributors but only on a fill-in basis. In contrast, outlets utilizing relatively small volumes of eggs purchased from wholesale egg distributors selling fewer than 300 cases of eggs per week.
Movement of Egg Products

The wholesale movement of egg products to Columbus business users was concentrated among six local distributors—five commercial firms which were branch outlets of nationally operating food processors and the State's purchasing agency. Over 3.2 million pounds of frozen eggs and 277,000 pounds of egg solids were used by Columbus businesses and institutions during the year. Local distributors supplied 59.3 percent of the frozen eggs and 68.2 percent of the egg solids used. The remainder of both types of eggs were sold and delivered directly to users either by the main corporate offices of local branch outlets or from wholesale egg product distributors headquartered elsewhere in Ohio.

Bakeries used about 85 percent of the frozen eggs sold in Columbus. Of the total volume of frozen eggs distributed, 69.1 percent were sold to bakeries with over 50 employees each; 17.6 percent went to smaller bakeries and food service operations with bakeries and/or candy shops; and 13.3 percent were sold to the manufacturers of miscellaneous food products.

In contrast, most of the egg solids distributed locally were used by confectioneries. Of the total volume sold, 30.3 percent were used by confectioneries, 23.2 percent went into the manufacture of miscellaneous food products, and 19.0 percent were used by bakeries. The latter group included food service operations with bakeries and candy shops. Over 76,000 pounds of egg solids, or 27.5 percent, were handled by the State of Ohio for institution and welfare use in Columbus.
Sales Arrangements

Verbal agreements and mutual understandings were the predominate methods of arranging sales between buyers and sellers of shell eggs. In essence, these arrangements amounted to standing orders from the assembler-distributor and retail outlet and a standing agreement by the producer or collector and the distributor to supply. Verbal agreements were generally negotiated and included the terms of sale, such as volume of eggs by grade and size, packaging specifications, pricing formulas, delivery schedule, and method of payment. Not all verbal agreements, however, covered the pricing of eggs. In contrast, mutual understandings dealt with the same specifics but rarely covered pricing and were generally less firm than the verbal agreements.

Egg distributors had sales agreements with all of their suppliers and about 75 percent of their customers; the remainder were call-up or spot orders. Spot orders were most frequently used by large volume distributors, especially with new customers and with outlets where the distributor was a secondary or fill-in supplier.

Most agreements were verbal or mutual, although, written agreements were used. Two of the larger distributors used contracts with the State, corporate chains, and with some of the larger independent groceries. Written agreements between buyers and sellers were negotiated in an attempt to regulate the conditions of supply and to stabilize pricing—especially among the large volume users and suppliers. In all cases, however, written agreements were made by distributors if either their suppliers or their customers preferred them.
In contrast, egg product distributors used written contracts with most of their customers, especially the larger volume users. Their contracts were let from 30 to 90 days, to 1 year, depending upon the customer's needs. These contracts usually covered every facet of the sale and delivery of egg products. Most egg products distributors preferred written contracts for the protection they afforded; their customers wanted them for the same reasons. Each of the distributors traded on the basis of verbal agreements and spot orders. These sales arrangements, however, were estimated to apply to less than 20 percent of their total volume of sales.

Important Services

Services such as egg delivery and credit were provided to customers by all of the egg distributors. However, none supplied market information and advertising materials. And with one exception, technical information and assistance was supplied only the distributors of egg products.

Egg quality, however, was the most important consideration of supply to all business users and retail outlets, dependable supply and associated services were second, and price was third. Product quality and dependability of supply were also considered to be of greater importance to a majority of the large volume outlets when determining a source of supply.

Customers of wholesale firms wanted high quality eggs of uniform size and at a reasonable price. Consistency of quality and service was required, and "bad" or inedible eggs were not tolerated. These
were what customers expected—and received—in the opinion of all distributors wholesaling shell eggs and egg products.

Customer expectations in turn affected the shell egg distributor's choice among suppliers; although, they did not affect the type of supplier used, such as between producer and collector. And, even though the distributors handling egg products had no alternatives among suppliers, the customers' complaints were forwarded to the suppliers. Each was confident that corrective action was quickly taken on every complaint concerning the product's physical properties.

PRICING PRACTICES

The prices wholesale egg distributors paid suppliers for shell eggs were based on pricing formulas negotiated between individual buyers and sellers. Most were secured by mutual or verbal agreements, however, a few were formalized through written contracts. The formula used varied by distributor; the volume, grade, and size of eggs received; whether delivered or picked up; and by the type of supplier.

All prices paid for shell eggs, however, were based on published market reports. There were no terminal or auction markets in the local market area where buyers and sellers could meet and determine the price of eggs. Accordingly, market news reports either directly set or was used as a basis for establishing prices paid and received. Prices on 54 percent of the volume of eggs purchased by distributors were based on the USDA Federal-State Market News Service (daily)
report and 46 percent on the Urner-Barry Company's New York report. The Federal-State market report includes egg prices of several markets but elaborates on prices paid in the Ohio-Indiana area by source, type of processing, and characteristic of sale. The Urner-Barry Company is a private firm which reports New York wholesale prices for eggs daily.

Egg product distributors had no control over the prices they paid their suppliers for eggs. All were branch outlets of larger companies whose main offices established the prices they paid. Distributors reported that egg product prices were established according to the Chicago Merchantile Exchange prices in conjunction with the evaluation of local competition.

Selling Prices

The prices distributors charged customers for shell eggs were established in three different ways: (1) negotiated price formulas using published market reports as a base, (2) a straight mark-up from cost, and (3) a set quotation using the USDA market news report. The major volume of eggs sold was traded using price formulas and either verbal or written agreements. However, most of the outlets from among the independent groceries, restaurants, institutions, and jobbers received eggs which were priced using either the straight mark-up or set quotation methods. And, except for the larger independent grocery stores and restaurants, negotiated verbal price agreements were not in general use by these outlets.

Egg product distributors used written contracts with their customers more extensively than did shell egg distributors. All five
firms used written agreements with their large volume customers, and either written or verbal agreements with the remainder of their regular customers. Most of the contracts ranged from 30 to 90 day orders, however, some were as long as 1 year.

All of the corporate chain organizations purchased shell eggs from distributors on the basis of negotiated price formulas. The base most often used was the Urner-Barry Company's quotations on New York, 60 percent grade A eggs. Prices paid ranged from 5 to 8 cents per dozen above this base; 5 cents over on medium and 8 cents on large eggs. The distributors supplying chain groceries generally charged higher prices to other outlets, depending on current competitive conditions and the prices quoted in the USDA market report.

The prices paid by type of outlet tended to increase as the volume received reduced in size. This trend was also indicated, though not so pronounced, by the margins charged by distributors using the straight mark-up method of pricing. For example, the range in mark-up to consumers was from 12 to 17 cents, usually 12; to independent groceries from 10 to 12 cents, usually 10; to restaurants from 9 to 10 cents, usually 10 (usually 13, if cartoned); and to jobbers from 6 to 10 cents, usually 6 to 7.

As a general practice, egg distributors charged irregular or off-and-on customers a higher price for eggs than was paid by their regular outlets. Price premiums ranged from 1 to 2 cents per pound or dozen if the eggs were picked up by the customer, and from 1 to 5 cents when
delivered. This practice was only used, however, for those customers that held no potential as regular, full-time customers.

Regular prices were charged off-and-on customers that normally used 300 pounds or more of egg products or 8 or more cases of shell eggs per week. Distributors reasoned that the extra cost of service could be condoned since these buyers were potential, full-time customers. Still, most distributors admitted that this practice rarely induced irregular customers to become regular ones.

Price Changes

The prices paid for shell eggs changed with the rather frequent fluctuations of the market quotations. Although most distributors seemed satisfied with constant price fluctuations, the distributors handling about 80 percent of the total volume of eggs sold were not. They preferred less frequent price changes. All distributors reported their most serious problems occurring during price changes. All distributors had used their current method of pricing during the past 5 years, and although some were unsatisfied, they knew of no other method to replace it.

The prices received by wholesale shell egg distributors changed frequently—regularly 2 to 3 times a week and daily during some periods. Prices to most of the large volume users, especially the chain groceries and larger independent grocery stores, were based on published market news reports. Thus, prices changed as market quotations changed. And, due to their greater use of market reports, distributors selling over
300 cases of eggs per week had a higher frequency of price changes than smaller distributors.

Few, if any, of the shell egg distributors were satisfied with frequently changing prices. However, they felt that there was little, if anything, they could do about it. Some had attempted to maintain steadier prices. But, their competitors had not acted similarly, and they had been forced back to changing prices as the market changed.

In contrast, egg product distributors experienced a minimum of price changes. Most of their volume was sold on 30 to 90 day contracts to large volume users, such as bakeries, confectioneries, and other food manufacturers. These contracts usually called for a single price to be charged for their duration, thus changes in price were relatively infrequent.

**RECOMMENDATIONS**

This study provides a descriptive basis from which an analytical framework can be developed to help answer marketing channel relationships and questions: (1) What forces determine the total workload of the channel, the relative importance of different functional types of activities in the workload, and the allocation of the workload and functions among the business entities that are members of the channel’s quasi-organization? (2) What explanations can be found for the various types of dominance-subservience relationships to be found in marketing channels?

Development of an analytical framework would provide the marketing student with the tools to construct models of channel structure in much
the same way the economist builds models of the firm. Given certain
economic circumstances, the economist predicts how the firm will behave.
This framework would be intended to enable the researcher to chart the
relationship between economic environment and channel structure. It
would enable the researcher to evaluate the efficiency of a specific
channel's organization or to forecast the kinds of changes in channel
structure that may be expected when economic conditions are altered.
Such changes may be either natural movements of the economy, that is
variations in demand or technology, or controlled changes like the
imposition of taxes or price regulations.

The framework might be designed to serve as a basis for further
research in channel theory. Hypotheses developed should provide oppor-
tunities for numerous empirical investigations and re-evaluation of
the theory.
APPENDIX A

Definitions

Corporate chain stores.—are those of a group of 10 or more retail food stores under one corporate ownership and with management supplied by a central organization.

Egg breaking plants.—are processing plants that extract the edible contents from shell eggs and convert them into various types of frozen egg products and dried egg products.

Independent stores.—are those independently managed, belonging to neither a corporate nor a voluntary chain organization.

Non-commercial institutions.—are those public and/or private institutions, such as schools, hospitals, penal establishments, etc., that are chartered as non-profit operations.

Voluntary chain stores.—are independently managed stores with membership in an association of 10 or more independent retailers formed for doing business together.

Wholesale egg distributor.—a distributor of eggs or egg products that sells primarily in wholesale lots and to retail outlets or business users. The distributor may be a producer, jobber, or assembler-distributor, but in either case he takes both title and physical possession of the product and sells 50 or more 30-dozen cases of eggs per week at wholesale.
APPENDIX B
CONFIDENTIAL

THE OHIO AGRICULTURAL EXPERIMENT STATION
Poultry Science Department
Columbus 10, Ohio

Bakery Schedule - The Columbus Metropolitan Area

DATE: ___________________________ SCHEDULE NUMBER: ________________
COMPANY: ________________________ ADDRESS: _______________________
INTERVIEWER: G. P. Dempsey POSITION OF RESPONDENT: ______________

SECTION I: PRODUCT USE

1. What types of egg products do you use in your baking?

Shell _____ Grades & Sizes ____________________________________________
Frozen____ (Circle one) - WHOLE YOLK ALBUMEN MIXED
Dried______ (Circle one) - WHOLE YOLK ALBUMEN MIXED
Other______ (Explain) ________________________________________________

2. What changes have there been in the types of egg products used
during the last 5 years? Why?

3. In what types of bakery goods do you use:
Shell eggs______________ Frozen eggs________________________
Dried eggs______________ Other___________________________

4. If using shell eggs only, why do you use shell eggs in preference
to frozen or dried eggs?

5. Why is the use made of:
SHELL eggs for (above)? ____________________________________________
FROZEN eggs for (above)? __________________________________________
DRIED eggs for (above)? ____________________________________________
OTHER ( ) for (above)? _____________________________________________

6. What problems do you have with the egg products you are now using?
What improvements would you suggest?

7. Do you now use or have you in the past used a substitute for eggs
in your baking? If so, what and why?
SECTION II: EGG PROCUREMENT AND PRACTICES

9. From whom do you buy your eggs?

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>VOLUME (last wk.)</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FROZEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRIED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How many pounds, cases, or dozens of eggs did you buy last week? (answer above)

11. What weekly or seasonal fluctuations are there in the volume of eggs bought?

12. Why do you buy eggs from each of the above suppliers?

13. How long have you bought eggs from each of these suppliers? (answer above)

14. Have you changed suppliers within the last 5 years? If yes, why?

15. How often are eggs delivered to you?
   Daily _____ 3/week _____ 2/week _____ 1/week _____ Other _____

16. Does your main source of egg supply ever run out of eggs? If so, what do you do?

17. If you were to "run out" of eggs, what would you do? Why?

18. If your main source of supply went out of business, from whom would you consider buying eggs? (If not specific firm, then type of supplier). Why?

19. What problems do you have with your suppliers?

20. Does your supplier provide you with:
    Advertising materials __________
    Other information _______________ What kind? ___________________

SECTION III: PRICE ESTABLISHMENT

21. How is the price that you pay for eggs determined? Any agreements?

22. Do you watch the movements of the local wholesale market prices?
   Yes _____ No _____
23. What are the terms by which you pay for your eggs?
   On delivery____ 1/week____ 2/month____ 1/month____ Other____

24. What were the prices that you paid for eggs last week?

<table>
<thead>
<tr>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Other Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>______</td>
<td>Frozen</td>
<td>______</td>
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<tr>
<td></td>
<td></td>
<td>Dried</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION IV: CLASSIFICATION OF BUSINESS

25. What is the legal form of your business?
   Proprietorship ______ Partnership ______ Corporation ______

26. Is your (bakery) (restaurant) affiliated with any other business establishment?
   Independent ______ Chain organization ______ Other _______

27. How many people are presently employed in your establishment (include both management and labor)?
   Full time ______ Hrs./wk. part time ______ Hrs./wk. unpaid ______
   family labor

BAKERY ONLY:

28. What kinds of bakery goods are produced in your establishment?
   Bread____ Cakes____ Pies____ Cookies____ Doughnuts____
   Rolls____ Coffee cakes____ Other____________________

RESTAURANT ONLY:

29. What is the seating capacity of your restaurant? _______

30. What meals do you serve?
   Breakfast _____ Lunch _____ Dinner _____
APPENDIX C

CONFIDENTIAL

THE OHIO AGRICULTURAL EXPERIMENT STATION
Poultry Science Department
Columbus 10, Ohio

Confectioner Schedule - The Columbus Metropolitan Area

DATE: _________________________________ SCHEDULE NUMBER: ____________

COMPANY: _______________________________ ADDRESS: ________________

INTERVIEWER: G. P. Dempsey POSITION OF RESPONDENT: _______

1. What kinds of products are manufactured in your establishment?
   ____ Candy: Types: _______ _______ _______ _______ _______
   ___ Other: Kind: _______ _______ _______ _______ _______

2. Do you use eggs in any of these products? YES NO
   
   A. If no:     a. What substitute do you use for eggs? ______________
      Why? ________________________________
   b. Do you buy any ready-mixed ingredients with egg in them? YES NO
      If so: Kind: _________________________
   c. If using Marshmallow cream:
      Why do you purchase marshmallow cream rather than make your own? ______________
      Do you plan to make your own marshmallow cream in the future? YES NO
      How much of this product ______________ do you use in a year? ______________
      Where do you obtain your ready-mixed ingredients? ________________________


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SECTION II: EGG PROCUREMENT AND PRACTICES

9. From whom do you buy your eggs?

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>VOLUME (last wk.)</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FROZEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRIED</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How many pounds, cases, or dozens of eggs did you buy last week? (answer above)

11. What weekly or seasonal fluctuations are there in the volume of eggs bought?

12. Why do you buy eggs from each of the above suppliers?

13. How long have you bought eggs from each of these suppliers? (answer above)

14. Have you changed suppliers within the last 5 years? If yes - why?

15. How often are eggs delivered to you?
   Daily ___ 3/week ___ 2/week ___ 1/week ___ Other ___

16. Does your main source of egg supply ever run out of eggs? If so, what do you do?

17. If you were to "run out" of eggs, what would you do? Why?

18. If your main source of supply went out of business, from whom would you consider buying eggs? (If not specific firm, then type of supplier). Why?

19. What problems do you have with your suppliers?

20. Does your supplier provide you with:
   Advertising materials _________
   Other information _________ What kind? _________

SECTION III: PRICE ESTABLISHMENT

21. How is the price that you pay for eggs determined? Any agreements?

22. Do you watch the movements of the local wholesale market prices?
   Yes _____  No _____
23. What are the terms by which you pay for your eggs?
   On delivery____ 1/week ____ 2/month ____ 1/month ____ Other ____

24. What were the prices that you paid for eggs last week?

   Grade & Size | Price | Grade & Size | Price | Other factors
   Shell ________ | ___ | ________ | ___ | ____________
   Frozen ________ | ___ | ________ | ___ | ____________
   Dried ________ | ___ | ________ | ___ | ____________
   Other ________ | ___ | ________ | ___ | ____________

SECTION IV: CLASSIFICATION OF BUSINESS

25. What is the legal form of your business?
   Proprietorship ______ Partnership ______ Corporation ______

26. Is your (shop) (company) affiliated with any other business establishment?
   Independent ______ Chain organization ______ Other ________

27. How many people are presently employed in your establishment
   (include both management and labor)?
   Full time ____ Hrs./wk. part time ____ Hrs./wk. unpaid ____
   family labor

BAKERY ONLY:

28. What kinds of bakery goods are produced in your establishment?
   Bread _____ Cakes _____ Pies _____ Cookies _____ Doughnuts _____
   Rolls _____ Coffee cakes _____ Other ___________________________

RESTAURANT ONLY:

29. What is the seating capacity of your restaurant? ________________

30. What meals do you serve?
   Breakfast _____ Lunch _____ Dinner _____
APPENDIX D
CONFIDENTIAL

THE OHIO AGRICULTURAL EXPERIMENT STATION
Poultry Science Department
Columbus 10, Ohio

Retail Grocery Store Schedule - The Columbus Metropolitan Area

DATE: ____________________________ SCHEDULE NUMBER: _______________

COMPANY: _________________________ ADDRESS: ______________________

PERSON INTERVIEWED: _____________ POSITION: ______________________

SECTION I: POULTRY PRODUCTS HANDLED

1. What types of fresh or frozen poultry products do you handle? (Circle)
   Shell eggs____ A B C A B C A B C UNCLASSIFIED
   Other eggs_____ FROZEN DRIED
   Chickens______ FRYERS HENS SPEC. PROD.
   (Fresh)(Frozen) (Fresh)(Frozen) Kind_______
   (Parts)
   Other poultry____ TURKEYS DUCKS CAPONS OTHER

2. What changes have there been in the types of poultry products handled during the last 5 years? Do you plan any changes?

SECTION II: SALE OF EGGS

3. How many dozens of eggs were sold last week?

4. What weekly or seasonal fluctuations are there in the volume of egg sales? Why?

5. a. When you "run out" of eggs for sale, what do you do? Why?
   b. When you have a "surplus" of eggs for sale what do you do?
6. A. What do your customers expect of the eggs they buy? (What is fresh, high quality?)
   (1) cleanliness  (2) freshness  (3) uniform size  
   (4) no inedibles  (5) high quality  (6) uniform quality  
   (7) no cracks  (8) large size  (9) no bloodspots  (10) other ________________

   B. How do these expectations affect your determination of a supplier?

7. What complaints do you get about eggs from your customers? How often? What do you do about complaints?

SECTION IV: EGG PROCUREMENT

8. How many dozens of eggs did you buy last week? _______________

9. From whom were these eggs bought?

   SUPPLIER  ADDRESS  VOLUME  OTHER FACTORS
   (doz.)   (grade, size, processing)

   __________  __________  __________  ________________

10. Why do you buy eggs from the above suppliers?

11. How long have you bought eggs from each supplier?

12. How often is delivery being made to you?
   1/week______  2/week______  3/week______

13. How do you determine the volume and type of eggs to buy?

14. If your main source of egg supply went out of business, from whom would you consider buying eggs? Which first? Why?

15. What problems do you have with your supplier(s) and his (their) products?

16. Have you changed suppliers in the last 5 years? If so, why?

17. What seasonal changes are there in the grades and sizes of eggs bought?

SECTION V: PRICES AND PRICE DETERMINATION

18. How is the price that you pay for eggs determined? Any agreements?

19. What changes have there been in your method of determining price in the last 5 years?
20. What prices did you pay last week for eggs? (per dozen)

<table>
<thead>
<tr>
<th>GRADE</th>
<th>Ex. Lg.</th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
<th>Mixed</th>
<th>OTHER FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

21. What differences were there in the prices paid to different suppliers? Why?

22. How often are your buying prices changed? Why?

Selling Price

23. How is the sale of your eggs determined?

24. How often are your sale prices changed? Why?

25. How satisfied are you with your present method of sale price determination?

26. What changes have there been in your method of determining the sale price in the last 5 years? Why?

27. What were the prices received last week from your customers?

<table>
<thead>
<tr>
<th>GRADES</th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
<th>Mixed</th>
<th>OTHER FACTORS</th>
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</table>

SECTION VI: SERVICES PERFORMED

28. What services does your store perform for its customers?

- Extend credit ______
- Cash checks ______
- Deliver ______
- Other ______
- Process eggs ______
- Keep a constant supply ______
- Give exchanges or refunds ______
- Keep eggs in coolers ______

a. Do you plan to continue to perform these services? Why?

b. What additional services do you plan to add?

29. What services do you perform for your egg suppliers?

- Extend credit ______ How? ______
- Serve as a steady outlet for his eggs ______
- Try to move his over-supply ______
- Other ______

Will you continue to perform these services? Why?
30. What services do your suppliers of eggs perform for you?
   Process the eggs _____ Kind _____________________
   Delivery _____
   Extend credit _____ How Long? ___________________
   Serve as a dependable and responsible source of supply _____
   Pick up eggs if not sold in given period of time _____
   Provide advertising materials _____
   Provide market information _____ Kind _____________________
   Other ________________________________

   a. Which of these services are the most important to you? Why?

   b. Do you plan to ask for any additional services from your suppliers in the near future? What?

SECTION VII: BUSINESS ENTERPRISE

31. What is the legal form of your business?
   Proprietorship _____
   Partnership _____
   Corporation _____
   Other _____ Type ______________________

32. Type of business enterprise based on ownership and/or organization?
   Independent _____
   Chain store _____ What chain? __________________
   Voluntary chain _____ What group? ________________
   Cooperative chain _____ What group? ________________
   Other ________________________________

33. How many employees does your store have?
   Full-time ______________
   Part-time hrs./wk. _______
   Unpaid family labor hrs./wk. ______

34. What was your store's total sales figure last week?

35. What are the specific lines of goods that your store carries?
   Groceries _____ Produce _____
   Fresh meats _____ Frozen foods _____
   Dairy products _____ Other ________________

36. Which line of goods is the most important to your business?
   (makes up a major part of your sales)

37. Is your store integrated with any other business? If so, how?
SECTION I: PRODUCT USE

1. What types of egg products do you use in your restaurant?
   Shell eggs____ Grades & Sizes____
   Frozen eggs____ (Circle one) WHOLE YOLK ALBUMEN MIXED
   Dried eggs____ (Circle one) WHOLE YOLK ALBUMEN MIXED

2. What changes have there been in the types of egg products used during the last 5 years? Why?

3. In what ways do you serve eggs to your customers? (Rank as to most eggs used)
   Fried____ Scrambled____ Boiled____ Poached____ Salads____
   Baked goods____ Other___________________________

4. In what types of prepared foods do you use:
   Shell eggs?_________________________________
   Frozen eggs? ________________________________
   Dried eggs?_________________________________
   Other?______________________________________

5. If using shell eggs only, why do you use shell eggs in preference to frozen or dried eggs?

6. Why is the use made of: SHELL eggs for (above)? ____________
   FROZEN eggs for (above)? _________________
   DRIED eggs for (above)? ________________

7. What problems do you have with the egg products you are now using? What improvements would you suggest?

8. Are you now using fewer eggs because of a product that you can use instead of eggs? If so, what? How well does it substitute for eggs?
SECTION II: EGG PROCUREMENT AND PRACTICES

9. From whom do you buy your eggs?

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>VOLUME (last wk.)</th>
<th>OTHER FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FROZEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRIED</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How many pounds, cases, or dozens of eggs did you buy last week? (answer above)

11. What weekly or seasonal fluctuations are there in the volume of eggs bought?

12. Why do you buy eggs from each of the above suppliers?

13. How long have you bought eggs from each of these suppliers? (answer above)

14. Have you changed suppliers within the last 5 years? If yes, why?

15. How often is the delivery of eggs being made to you?
   Daily____  3/week____  2/week____  1/week____  Other________

16. Does your main source of egg supply ever run out of eggs? If so, what do you do?

17. If you were to "run out" of eggs, what would you do? Why?

18. If your main source of supply went out of business, from whom would you consider buying eggs? (If not specific firm, then type of supplier.) Why?

19. What problems do you have with your suppliers?

20. Does your supplier provide you with:
   Advertising materials _____
   Other information ______ Kind_____________________________

SECTION III: PRICE ESTABLISHMENT

21. How is the price that you pay for eggs determined? Any agreements?

22. Do you watch the movements of the local wholesale market prices?
   Yes ____  No _____
23. What are the terms by which you pay for your eggs?
   On delivery____ 1/week____ 2/month____ 1/month____ Other(____)____

24. What were the prices that you paid for eggs last week?

<table>
<thead>
<tr>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Other factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frozen</td>
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<tr>
<td>Dried</td>
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<tr>
<td>Other</td>
<td></td>
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</tr>
</tbody>
</table>

SECTION IV: CLASSIFICATION OF BUSINESS

25. What is the legal form of your business?
   Proprietorship____ Partnership____ Corporation____

26. Is your (bakery)(restaurant) affiliated with any other business
    establishment?
   Independent____ Chain organization____ Other_____________

27. How many people are presently employed in your establishment?
    (include both management and labor)
   Full time____ Hrs./wk. part time____ Hrs./wk. unpaid____
   family labor

   Bakery Only:

28. What kinds of bakery goods are produced in your establishment?
   Bread____ Cakes____ Pies____ Cookies____ Doughnuts____
   Rolls____ Coffee cakes____ Other_____________________

   Restaurant Only:

29. What is the seating capacity of your restaurant? ______________

30. What meals do you serve?
   Breakfast______ Lunch______ Dinner______
Institutional Purchasing Agent Schedule - The Columbus Metropolitan Area

DATE: ______________________________ SCHEDULE NUMBER: _____________
COMPANY: __________________________ ADDRESS: _______________________
INTERVIEWER: G. P. Dempsey POSITION OF RESPONDENT: _________________

SECTION I: DESCRIPTIVE

1. General description of the operation performed by agency for establishments.

2. Description of establishments serviced.

3. Further description of agency.

SECTION II: PRODUCTS PURCHASED

4. What types of fresh or frozen poultry products do you purchase for your establishments?

   ___ Shell eggs: Grades and sizes:
   ___ Frozen eggs: (Circle one): WHOLE YOLK ALBUMEN MIXED
   ___ Dried eggs: (Circle one): WHOLE YOLK ALBUMEN MIXED
   ___ Chickens: Fryers ___ Hens ___ Specialty products ___
      /Whole - (Fresh)(Frozen) (Fresh)(Frozen) Kind ________
      /Parts - ________, ________, ________, ________
   ___ Other poultry: Turkeys___ Ducks___ Capons___ Other___

5. What changes have there been in the types of poultry products handled during the last 5 years? What changes do you foresee for the future?
SECTION III: PROCUREMENT OF EGGS

6. How many cases of eggs did you purchase last month? ____________

7. What is the normal weekly or monthly fluctuation in the volume of eggs purchased?

8. From whom did you purchase your eggs last month?

<table>
<thead>
<tr>
<th>SUPPLIER</th>
<th>ADDRESS</th>
<th>VOLUME (cases)</th>
<th>OTHER FACTORS (Grades, sizes, processing)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. How do you determine the volume and type of eggs to buy?

10. What seasonal changes are there in the grades and sizes of eggs bought? Why?

11. Is your volume of eggs purchased changing?
    Increasing? _____ Decreasing? _____ Staying about the same? _____

12. How long have you bought eggs from each of the above suppliers?

13. Why did you purchase eggs last month from the above suppliers?

14. What are the qualifications that a supplier must have before you can purchase eggs from him?

15. If your main source of egg supply went out of business, from whom would you consider buying eggs? Which first? Why?

16. If your establishments "ran out" of eggs, what would they do?

17. What problems do you have with your supplier(s) and his (their) products?

18. Do the establishments which you serve ever have any complaints about the eggs or the service which they are receiving?

19. Have you changed or stopped doing business with any particular supplier during the last 5 years? If yes, why?

SECTION IV: PRICES AND PRICE DETERMINATION

Buying Price:

20. How is the price that you pay for eggs determined? Any agreements? If so, what are the terms?

21. How satisfied are you with your present method of price determination? Why?
22. What changes have there been in your method of determining price in the last 5 years? Why?

23. What were the prices paid last week or month for eggs?

24. If there are any differences in the prices paid to different suppliers, why?

25. How often are your buying prices changed? Why? Preferences?

26. What problems do you have when determining your buying prices?

27. How often is payment being made to your suppliers? Why this often?

28. Do you plan to continue this method of purchasing, or do you foresee some other method being used in the near future? What?

SECTION V: SERVICES PERFORMED

29. How is the delivery of eggs being made to your establishments? How often? Why this often?

30. What services do your suppliers of eggs perform for you?
   Process eggs _____ Kind ___________________________________________
   Deliver eggs _____ How ___________________________________________
   Extend credit _____ How long _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
   Serve as a dependable source of supply _____
   Provide information on handling or cooking, etc. _____
   Pick up eggs if not used _____
   Other _____ Type ______________________________________________

31. Do you plan to ask for any changes in services or ask for additional services from your suppliers in the near future? If so, what and why?

32. Detailed information on meals served in the institutions for which you purchase eggs.
APPENDIX G

CONFIDENTIAL

THE OHIO AGRICULTURAL EXPERIMENT STATION
Poultry Science Department
Columbus 10, Ohio

Hospital Schedule - The Columbus Metropolitan Area

SECTION I: PRODUCT USE

1. What is the hospital's total number of:
   Full time employees (or full time equivalent)?
   Normal patient load?
   Student nurses?

2. Do many people other than the employees, patients, and student nurses eat in your cafeteria(s)?
   YES   NO

3. What is the total number of meals prepared and served during a normal day? month?
   Per day       Per month

4. How many meals are prepared and served for each of your scheduled mealtimes?
   Breakfast     Lunch     Dinner

5. What percent of your total egg supply is being consumed during each meal?
   Breakfast     Lunch     Dinner
SECTION II: EGG PROCUREMENT AND PRACTICES

9. From whom do you buy your eggs?

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>VOLUME (last wk.)</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FROZEN</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DRIED</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. How many pounds, cases, or dozens of eggs did you buy last week? (answer above)

11. What weekly or seasonal fluctuations are there in the volume of eggs bought?

12. Why do you buy eggs from each of the above suppliers?

13. How long have you bought eggs from each of these suppliers? (answer above)

14. Have you changed suppliers within the last 5 years? If yes, why?

15. How often are eggs delivered to you?
   Daily____ 3/week____ 2/week____ 1/week____ Other____

16. Does your main source of egg supply ever run out of eggs? If so, what do you do?

17. If you were to "run out" of eggs, what would you do? Why?

18. If your main source of supply went out of business, from whom would you consider buying eggs? (If not specific firm, then type of supplier). Why?

19. What problems do you have with your suppliers?

20. Does your supplier provide you with:
   Advertising materials _________
   Other information _________ What kind? _________

SECTION III: PRICE ESTABLISHMENT

21. How is the price that you pay for eggs determined? Any agreements?

22. Do you watch the movements of the local wholesale market prices?
   Yes _____  No _____
23. What are the terms by which you pay for your eggs?
   On delivery_____ 1/week_____ 2/month_____ 1/month_____ Other_____

24. What were the prices that you paid for eggs last week?

<table>
<thead>
<tr>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Grade &amp; Size</th>
<th>Price</th>
<th>Other factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td></td>
<td>Frozen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dried</td>
<td></td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION IV: CLASSIFICATION OF BUSINESS

25. What is the legal form of your business?
   Proprietorship _______ Partnership _______ Corporation _______

26. Is your (bakery) (restaurant) affiliated with any other business establishment?
   Independent _______ Chain organization _______ Other _______

27. How many people are presently employed in your establishment (include both management and labor)?
   Full time _____ Hrs./wk. part time _____ Hrs./wk. unpaid _____
   family labor

BAKERY ONLY:

28. What kinds of bakery goods are produced in your establishment?
   Bread _____ Cakes _____ Pies _____ Cookies _____ Doughnuts _____
   Rolls _____ Coffee Cakes _____ Other __________________________

RESTAURANT ONLY:

29. What is the seating capacity of your restaurant? _____________

30. What meals do you serve?
   Breakfast _____ Lunch _____ Dinner ____
APPENDIX H

CONFIDENTIAL

THE OHIO AGRICULTURAL EXPERIMENT STATION
Poultry Science Department
Columbus 10, Ohio

Wholesaler Schedule - Egg Movement in the
Columbus Metropolitan Area

DATE: __________________________ SCHEDULE NUMBER: __________________
COMPANY: _______________________ ADDRESS: ___________________________
PERSON INTERVIEWED: ___________ POSITION: __________________________

SECTION I: GENERAL

1. General description of the poultry and egg operation?
2. Ownership and affiliation?
3. What changes in operation during the last 5 years?
4. Age of owner or owners?
5. Number of employees? Full time ________ Hrs./week part-time ________
   Hrs./week family labor ________

SECTION II: PRODUCTS HANDLED

6. What poultry products are handled? Specialty products?
7. What other products are handled?
8. Major outlets for the poultry products handled.
9. What changes have there been in the types of products handled
during the last 5 years?

278
SECTION III: THE SALE OF EGGS

10. To what type of outlets do you sell your eggs?

<table>
<thead>
<tr>
<th>NUMBER OF OUTLET</th>
<th>TYPE OF EACH</th>
<th>VOLUME OF LAST WEEK (Dozens)</th>
<th>TYPE OF EGGS</th>
<th>GRADES AND SIZES</th>
<th>DEGREE OF PROCESSING</th>
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</thead>
<tbody>
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</table>

11. Are you the only supplier for these outlets?

12. What weekly or seasonal fluctuations are there in the volume of eggs sold to specific outlets? Why?

13. What changes have there been in the types of outlets serviced during the last 5 years? Why?

14. What percentage of the total business sales is derived from the sale of eggs?
   a. Increasing or decreasing? Why?
   b. Handling of eggs becoming more important or less important to your total business? Why?

15. What percentage of your total egg sales are:
   Shell ______ Frozen ______ Dried ______ Other ______

16. a. When you "run out" of eggs for sale what do you do?
   b. When you have "surplus" eggs for sale what do you do with them?

17. a. From the standpoint of your over-all business, if you had to give up one of your outlets, which one would it be? Why?
   b. Which would you try to hold on to the longest? Why?
   c. Does your method of operation enable you to sell to new outlets of this type? Why?

18. What types of sales arrangements do you have with your customers?
   a. What are the terms of agreement?
   b. Why do you have such arrangements?
19. a. What do your customers want from an egg supplier?
   b. How do these wants affect your decision when you determine from whom to buy eggs?

20. How much storage space do you have for eggs?

21. What kinds of problems do you have with your various customers?

SECTION IV: EGG PURCHASING

22. How many dozens of eggs did you buy last week?

<table>
<thead>
<tr>
<th>VOLUME</th>
<th>TYPE OF EGGS</th>
<th>GRADES AND SIZES</th>
<th>DEGREE OF PROCESSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPPLIER</td>
<td>LAST WEEK (Dozens)</td>
<td>EGGS</td>
<td></td>
</tr>
</tbody>
</table>

23. How long have you bought eggs from each supplier? (table)

24. Which are your most important suppliers? (table)

25. Where do your suppliers get their eggs? (table)

26. How often is delivery made to you?

27. Is your volume of eggs purchased changing?
   Increasing _____ Decreasing _____ Staying about the same _____

28. How much seasonal variation is there in the volume of eggs you buy? Why?

29. How do you determine the volume and type of eggs to buy each week?

30. What factors are most important to you in determining from whom to buy eggs? Why?

31. If your main supplier went out of business, from whom would you consider buying eggs? Which first? Why?

32. What changes have you made in suppliers over the last 5 years? Why?

33. What problems do you have with your various suppliers?
SECTION V: PRICES AND PRICE DETERMINATION

A. Buying Prices

34. How is the price that you pay for eggs determined? (by grades, sizes, degree of processing, cases exchanged, different suppliers)
   a. What agreements with suppliers? Why?
   b. What changes in method of determination during the last 5 years?
   c. How satisfied are you with your present method of price determination? Why?

35. What prices did you pay last week for eggs?

<table>
<thead>
<tr>
<th>SIZES</th>
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<tbody>
<tr>
<td>GRADE</td>
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<tr>
<td>-------</td>
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<td></td>
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</tbody>
</table>

36. How often are your buying prices changed? Why? Preferences?

37. What problems do you have when determining your buying price?

38. How often is payment being made to your suppliers? Why?

B. Selling Prices

39. How is the selling price of your eggs determined? (by outlet, grades, sizes, degree of processing, cases exchanged)
   a. What agreements with customers? Why?
   b. What changes have there been in your method of determining the sale price in the last 5 years? Why?
   c. How satisfied are you with your present method of sale price determination?

40. What were the prices received last week from your customers?

<table>
<thead>
<tr>
<th>SIZES</th>
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<tbody>
<tr>
<td>GRADE</td>
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</tbody>
</table>

41. When are you paid for eggs sold to various outlets?

42. How often are your sale prices changed? Why?

43. Is the sale price for eggs the same to "off and on" customers as it is to your steady customers? Why?
SECTION VI: SERVICES PERFORMED

44. What services do you perform for your suppliers?
   Extend credit _______ For what? _______________________
   Farm pick-up _______
   Buy all of suppliers eggs regularly ______
   Provide him with market news (prices, outlook) ______
   Take his over-supply ______
   Other ____________________________

   a. Will you continue to perform these services? Why?

   b. What additional services do you plan to add?

45. What services do you perform for your egg customers?
   Process and carton his eggs ______
   Deliver _______ How often? ______
   Extend credit _______ How long? ______
   Provide advertising materials ______
   Provide market information ______
   Supply all their needs for eggs ______
   Serve as a fill-in supplier ______
   Pick up and redistribute your customers' overages ______
   Other ____________________________

   a. Will you continue to perform these services? Why?

   b. What additional services do you plan to add?

C. Credit

46. What are your credit policies?

   a. How long would you continue to supply eggs to a customer without receiving payment? Why?

   b. What problems do you have with your credit program?

47. What services do your suppliers of eggs perform for you?
   Process and carton eggs ______
   Delivery ______
   Extend credit _______ How? _______________________
   Serve as a regular source of supply ______
   Redistribute your overages _______ Which ones? ______
   Other ____________________________
48. What are the most important factors to your customers when they determine from whom to buy eggs? Why?
Price_______
High quality_______
Uniform quality_______
Adequate and dependable supply_______
Services performed_______

49. What are the most frequent complaints that you receive from your customers? Can the basis for these complaints be alleviated by you?
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