SOME ECONOMIC ASPECTS OF POULTRY MARKETING IN DETROIT, MICHIGAN, WITH EMPHASIS ON THE FEASIBILITY OF CENTRALIZED PREPACKAGING OF POULTRY

Thesis for the Degree of M. S.

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Bert D. Miner

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This is to certify that the

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Major professor

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By

BERT D. MINER

A THESIS

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ABSTRACT

Self-service for meats has expanded rapidly over the last few years. This includes poultry meat as well as red meats. Self-service requires that the product be prepackaged before being placed in the open-top meat case. Prepackaging of poultry entails the wrapping in a transparent film, heat-sealing the film, labeling, weighing, pricing, and placing the poultry in the open-top meat case.

Most of the prepackaging of poultry is being done in the individual retail stores. This study was undertaken to determine the cost of prepackaging poultry in the retail store as compared with performing the same operation in a centralized location.

A schedule of questions was used by the author to solicit information from some Detroit poultry wholesalers. This information in conjunction with some time studies on cutting-up and packaging fresh, unfrozen fryers was used to estimate the costs of cutting-up and prepackaging fresh, unfrozen fryers in a centralized location as compared with a similar operation in a retail store. In addition, other phases of poultry marketing in Detroit were evaluated and described.

It was found that Detroit received poultry from many different states. About 40 percent of the dressed poultry (21 percent of the total poultry) was supplied by Georgia in 1953, while Michigan, Indiana, and Ohio contributed the major supplies of live poultry. Most of the poultry supplies moved to the industrial city by truck transportation.

Most of the Detroit live poultry receipts were processed to a ready-to-cook form before being delivered to the retail outlets. The dressed poultry receipts were generally delivered to the retail outlets without further processing. The processing costs appeared rather uniform for the various Detroit poultry processors. Processing from a live to a New York dressed form cost about 6 cents a pound. Processing from a New York dressed to a ready-to-cook form cost about 8 cents a pound. These costs helped explain why many of the Detroit poultry processing plants were unable to meet the competition of the Southern poultry processors.

The processed poultry was delivered to the retail stores where it was prepackaged and sold. Calculations on the cost of cutting-up and prepackaging fresh, unfrozen fryers at a retail store were: 2.6 cents per pound for labor, 1.2 cents per pound for wrapping material, and 1.8 cents per pound for shrinkage. These cost data multiplied by 57.2 million pounds of ready-to-cook fryers handled by the Detroit

poultry processors in 1953 indicated a total cost of 3.2 million dollars for cutting-up and prepackaging fryers at a retail store.

It was estimated that the same cutting-up and prepackaging operation for fryers could have been performed at a poultry processing plant at a substantial savings. Cost of labor was estimated to be about 0.9 of a cent per pound of fryers handled. Cost of wrapping material was estimated to be about 0.6 of a cent per pound of fryers handled, and the cost of shrinkage was estimated to be about 1.8 cents per pound. Thus, the total cost of cutting-up and prepackaging fresh, unfrozen fryers in a centralized location was estimated to be approximately 1.9 million dollars.

Using the most efficient methods, a centralized cutting-up and prepackaging operation for fresh, unfrozen fryers in Detroit could have effected a savings of 1.3 million dollars.

Approved:

Robert C. Kramer

Major Professor

ACKNOWLEDGMENTS

The author wishes to express his gratitude and appreciation to all those who helped with the completion of this study and the preparation of the manuscript. Dr. T. K. Cowden and Dr. L. L. Boger, succeeding Heads of the Agricultural Economics Department, made this study possible by granting the author a graduate assistantship. Dr. Robert C. Kramer initiated the study and lent valuable assistance to the writer by his counsel and patience. Drs. H. E. Larzelere, G. G. Quackenbush, and D. E. Hathaway listened to an oral presentation of the project outline and offered valuable suggestions. Dr. L. E. Dawson, Poultry Department of Michigan State College, contributed information and suggestions.

The wonderful cooperation of Detroit poultry wholesalers was much appreciated.

Miss Harriette Burger and Mrs. Margaret Fuller, of the secretarial staff of the Agricultural Economics Department, assisted with the typing of the original manuscript.

The writer especially wishes to express his gratitude and appreciation to his wife, Dorothy, and his sons, Denis and Alan, for their patience, confidence, and moral support.

The contributions of fellow graduate students and others have been many, but the writer assumes responsibility for any errors which may be present in this manuscript.

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CHAPTER I

INTRODUCTION

Knowledge is infinite; therefore, research is inevitable. Research is a method by which data and phenomena are discovered, analyzed, and evaluated to provide knowledge for the use of mankind. Research in the field of agriculture has been conducted since very early times. Much of the energy in early times and even up to the near past was expended primarily in obtaining knowledge about better methods of production.

Finally, researchers became aware of the fact that marketing of agricultural products accounted for approximately half of the consumer's dollar spent for food. Since then, more talent has been channeled into the area of marketing research. Unfortunately the new talent was content to operate primarily in the small area between the farmer and processor, leaving the areas of processing, wholesaling, and retailing relatively untouched.

It was not until the researchers returned to their posts after World War II that they began to realize that the prospect of improving the marketing of agricultural products through more-intensive

research in the narrow span between producer and processor was extremely limited. The shock was sufficient to cause some administrators and researchers to cast their eyes about looking for new areas of operation. The logical areas were, of course, processing, wholesaling, and retailing of agricultural products.

The largest claim on the consumer's dollar spent for food goes to the producer. Retailing claims the second-largest share. Since a large amount of money is handled in the retailing of agricultural products, it is only natural to assume that here would be the most likely place to make money-saving contributions through research. This is not to be interpreted as meaning that the greatest inefficiencies exist in this area; it only suggests that the potentials are greater.

Retailing includes a great number and variety of marketing services. These services are the result of consumer demand, and should not, therefore, be treated too lightly. The greater the number of services involved, the greater will be the cost of retailing, generally speaking. This applies to wholesaling and processing as well.

Purpose of the Study

The content of this thesis deals with research in the area of poultry processing, wholesaling, and retailing, with emphasis on the feasibility of centralized prepackaging of poultry meat.

The Detroit market was selected for this study because it offered the best opportunity to obtain the information desired. The Federal-State Market News Service office at Detroit collected valuable statistics on the receipts of poultry in the Detroit market. The concentration of poultry processors and wholesalers in Detroit also facilitated the gathering of data to be used as a part of this thesis.

For purposes of this study the Detroit market was considered to be the greater Detroit area, which encompassed a population of more than three million people.

An attempt was made to construct a schedule of questions that would reveal various information which would be instrumental in analyzing the economic feasibility of the centralized prepackaging of poultry meat. It was also designed to stress other important phases of poultry marketing in Detroit.

It was necessary to determine some method by which the poultry wholesalers would be selected. The method chosen was to personally interview some member of top management in each of the poultry wholesaling houses listed in the classified section of the 1954 Detroit telephone book. It was considered reasonable to assume that all poultry wholesaling houses in Detroit would have a telephone to transact business.

The classified section of the 1954 Detroit telephone book listed the names of sixty-two poultry wholesaling houses. The names and addresses were all recorded on 4- by 5-inch cards in alphabetical order. To maintain the confidence of the wholesalers, a number, ranging from 1 to 62, was placed on the card opposite the firm's name. After the interview with a wholesaler, the number corresponding to the name of his house was placed in the upper right-hand corner of the schedule.

Collection of Data

The data were collected during June, 1954.

After having made a few interviews and observed the plant sizes, the writer found that, of the sixty-two poultry wholesalers listed in the classified section of the 1954 Detroit telephone book, some ten processors handled the majority of the poultry entering the Detroit market. It was found that many of the small operators obtained their poultry directly from these large wholesalers. It was also learned that, although they were listed as wholesalers, the small operators retailed most of their poultry alive to the colored trade and persons of immediate foreign extraction.

Upon learning these facts, the author proceeded to interview only the remaining major wholesalers of poultry in the Detroit area. It was the opinion of the author that the information obtained from these larger houses would give more-accurate data and would also suffice for purposes of this study.

The writer received the finest cooperation from the wholesalers interviewed. In only one case was the author turned away without receiving the requested information. Even in this case it was only a mild refusal because of the lack of time at that particular moment.

It was found that the afternoon presented the most opportune time for interviewing because the managers were through with the morning rush of filling orders and receiving shipments. In fact, during the morning the poultry wholesalers would rather quickly give the requested information, whereas in the afternoon they were prone to converse at great length if allowed to do so.

Definition of Terms

"Prepackaged meat": meat that has been cut, wrapped in a transparent film, weighed, priced, and displayed in an open-top refrigerated meat case. This applies to poultry meat as well as red meat.

"Centralized prepackaging": The meat is prepackaged at a central plant and then distributed to a number of different retail stores for sale to the public in the original package.

"Retail store prepackaging": The meat is prepackaged and sold to the public in the same retail store.

"Complete self-service": a store that merchandises all its meat in a prepackaged form.

"New York dressed poultry": poultry that has had only the blood and feathers removed.

"Ready-to-cook poultry": poultry which has been New York dressed, eviscerated, and has all inedible parts removed.

"Cut-up poultry": ready-to-cook poultry that has been cut into frying-sized pieces.

"Poultry parts": Like parts of poultry are packaged together; i.e., breasts, thighs, drumsticks, wings, livers, backs, and necks.

"Broiler and/or fryer": a ready-to-cook or cut-up chicken weighing between 1-1/4 and 3 pounds. Most commercially grown broilers are only eight to twelve weeks old, and include both the cockerels and pullets.

"Stewing chickens": mature birds which should be cooked with moist heat; i.e., stewed, fricasseed, boiled, braised, or simmered.

"House": referred to in the jargon of the poultry trade, means the place of business.

"Chicken": in the content of this thesis includes broilers from specialized enterprises, unless specifically stated otherwise.

"Wrapping material": refers to the transparent film used to wrap an individual item of poultry; i.e., a fryer, stewing chicken, turkey, or other.

"Wrapping paper": refers to the opaque paper used to wrap an individual item of poultry; i.e., a fryer, stewing chicken, turkey, or other.

"Packing material": refers to the paper-lined carton or crate in which a number of poultry items, usually of the same kind, are packed.

CHAPTER II

REVIEW OF LITERATURE

Although no literature has been found that deals directly with the subject of centralized prepackaging of poultry, there are some studies and reports that deal with closely allied subjects. The first area of research is that having to do with self-service; the second is that having to do with poultry merchandising.

Armour & Co. began a series of reports on self-service of meats in 1948, which was published annually through 1952. The first report in 1948[1] gave a brief history of the growth of self-service for meats. It proclaimed that the more prepackaged meat products the packer makes available, the greater the incentive for the retailer to be in a position to take advantage of these products in self-service. It also touched upon some of the advantages and disadvantages of complete self-service meats. Lastly, it listed what was called the "Ten Commandments for Success in Complete

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[1] Sam Teitelman, Prepackaged Self-Service Meats, Armour & Co., Chicago, 1948.

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Self-Service." Slight adaptations of these same principles would apply equally well to a centralized-type prepackaging operation. They are:

1. Heavy traffic or volume.
2. Customers willing to accept change.
3. Personal attention of owner or manager.
4. Initiative and imagination.
5. Courage.
6. Necessary capital to see the thing through.
7. Experience in the meat business.
8. Not try to take advantage of the customer.
9. Careful planning.
10. Finally, be sure to employ the same sound practices in centralized prepackaging meats which have proven themselves in bulk selling.

The 1949 Armour report[2] dealt with the growth of self-service as compared with previous years, and the shift in expansion from California to the Northeast. Information on costs of converting to self-service meats was also discussed.

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[2] Sam Teitelman, Prepackaged Self-Service Meats, 1949 Report, Armour & Co., Chicago, 1949.

The 1950 Armour report[3] continued the coverage of self-service growth. It presented some twenty guides to success in self-service meats and presented other data pointed toward the operator.

The 1951 Armour report[4] covered many of the same materials as the previous reports. It merely brought them up to date.

The 1952 Armour report[5] titled "Fifth Annual Report on Self-Service Meats" was the last report published. It also dealt primarily with growth trends of self-service meat stores and their concentration.

It is interesting to note that through the course of these reports the voices got louder on the subject of centralized prepackaging. Armour & Co. merely brushed them aside, stating briefly that they had seen no conclusive proof of the feasibility of centralized prepackaging, but that work was being done on it.

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[3] Sam Teitelman, Meat Retailing in 1950, Armour & Co., Chicago, 1950.

[4] Sam Teitelman, Self-Service Meats Today, Armour & Co., Chicago, 1951.

[5] Sam Teitelman, Self-Service Meats, Armour & Co., Chicago, 1952.

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The most recent literature from Armour & Co. was a prepared speech given by Mr. Sam Teitelman,[6] Manager, Marketing Research Department of Armour & Co. On the subject of centralized prepackaging, he explained:

> That is fine and good for bacon, frankfurters, certain sausages and cold cuts because they lend themselves to a central prepackaging operation. But if the product is particularly perishable, it is not feasible to slice and wrap too far ahead of sale and too far away from the retail premises. Nevertheless, we may see further developments in the prepackaging of sausages, cold cuts, and luncheon meats at centralized points. Whether this job can be done more effectively by the packer than by the retailer still remains to be answered.

It should be mentioned that the Armour reports concerned themselves with prepackaging of red meats. The prepackaging of poultry was not specifically considered in any of the reports.

Also, what Mr. Teitelman meant by "too far ahead of sale and too far away from the retail premises" is not at all clear.

Kramer[7] instituted a study of prepackaged meat merchandising which analyzed three separate phases. These phases were sales,

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[6] Sam Teitelman, Problems of Self-Service Meats, Reprint of a Speech Presented in 1953, Armour & Co., Chicago.

[7] Robert C. Kramer, An Economic Analysis of Prepackaged Meat Merchandising with Particular Emphasis upon Sales, Consumer Reaction, and Operational Efficiency, Thesis for Degree of Ph.D., Michigan State College, 1951.

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consumer reaction, and operational efficiency. Within the latter phase a significant statement appeared to the effect that a 25 to 30 percent improvement could be made in the efficiency of the packaging operation in the retail store studied without any change in the physical layout. In addition, it was noted that most self-service stores could improve their layout.

The study also contributed an interesting note on centralized prepackaging of meat, which is herewith quoted:

> Nearly all of the red meat that is sold in packages today is packaged in the store where it is sold. This means that each store has all the equipment that is necessary for a complete operation. This seems like a waste of resources. It would appear that centralized packaging would be more efficient and a larger profit could be made this way. Machines could be used for packaging too.
>
> Centralized meat packaging has been tried. The writer visited a centralized packaging operation in Detroit in 1947. Six stores were supplied from this central unit. The central unit was discontinued after an extended time. The problems that arose because of centralized packaging were more than enough to offset any increased efficiencies.
>
> Meat is a perishable product, changes in temperature and light affect its outward appearance and meat must have a good appearance to sell well. Handling also causes meat to lose its best appearance.
>
> The meat that was packaged in the central place had to be transported to the stores. Moving the meat out of the packaging room into a truck and then from the truck to the store helped cause the meat to lose its sales appeal. These were the major factors causing the discontinuance of the central unit mentioned above. Also, a practical machine to package all sizes and cuts of meat has not been invented.
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> Rewrapping, remerchandising and special services are important as outlined above. A store being serviced from a

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central unit either had to have equipment to do remerchandising and rewrapping or send the meat back to the central unit. If equipment were on hand, this meant duplicate equipment, so that special services could be taken care of. If not, customers would probably be lost. For these reasons centralized packaging exists in only two or three cities in the United States. If the meat technologists can learn how to care for the meat and have the meat keep its saleability, more centralized packaging could be used. Problems in this area are being investigated as this is being written.

It should be mentioned that Kramer's thesis was concerned with prepackaging of red meats. The account given on centralized prepackaging was also concerned with red meats. The prepackaging of poultry, while it was possibly observed in the self-service stores or the centralized packaging operation, was not specifically referred to in the study.

Ranta[8] conducted a study in self-service for meats, primarily to analyze consumer reaction to prepackaged meats. It was also concerned with red meats.

Gowland[9] divided his study into two parts. The first dealt with various wrapping materials and their relative serviceability;

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[8] Raymond R. Ranta, An Analysis of Consumer Reaction to Prepackaged Meat, Thesis for Degree of M.S., Michigan State College, 1951.

[9] Joseph S. Gowland, Technical and Operational Problems of Self-Service Meat Merchandising, Thesis for Degree of M.S., Michigan State College, 1949.

i.e., the resulting differences in shrinkage or drip loss and the color preservation of meat. Part two was concerned with a more or less practical approach to some of the retailing problems connected with prepackaged self-service meats; namely, temperature of display cases, normal operating range, and the number of packages that were rewrapped or remerchandised.

Unfortunately, the study did not contain observations on poultry.

Voegeli[10] conducted a study which dealt with the microbial growth curve in prepackaged fresh meat. After three days the number of microorganisms found on the prepackaged fresh meat was greatly increased. Although the study was concerned only with fresh meat, it is felt by the author that a similar reaction would result in prepackaged poultry.

Dobbins and Hoecker,[11] United States Department of Agriculture, undertook a study to measure the amount and cost of rewrapping required for prepackaged meat, poultry, and cheese. Of the total

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[10] Marvin M. Voegeli, Flow Sheets of Prepackaged Fresh Meats, Thesis for Degree of M.S., Michigan State College, 1950.

[11] C. E. Dobbins and R. W. Hoecher, Costs and Reasons for Rewrapping Pre-Packaged Meats, Poultry and Cheese, Production and Marketing Administration, USDA, Washington, D. C., 1951.

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number of packages of poultry, 8 percent required rewrapping. The major reasons given for the removal of prepackaged poultry from display were unattractive packages, price changes, and broken film. The most effective way of reducing the need for rewrapping was to maintain a high rate of turnover by ordering and wrapping poultry in line with current requirements.

Harwell[12] and others, United States Department of Agriculture, conducted a time and motion study of prepackaging meats to measure the productivity of the functions performed. An attempt was then made to increase productivity in each operation through the development of improved handling methods, equipment, and layouts in the meat departments. Employment of the improved methods increased productivity of these operations by 10 and 23 percent, respectively, in the two self-service stores. This meant costs were reduced by $10.20 and $19.08 per week in the two stores studied.

The Naden and Jackson[13] study indicated that chicken meat in some form was handled by about 96 to 98 percent of all the retail

[12] E. M. Harwell, D. L. Anderson, P. F. Shaffer, and R. H. Knowles, Packaging and Displaying Meats in Self-Service Meat Stores, Production and Marketing Administration, USDA, Washington, D. C., 1953.

[13] Kenneth D. Naden and George A. Jackson, Jr., Some Economic Aspects of Retailing Chicken Meat, Bulletin 734, California Agricultural Experiment Station, University of California, Berkeley, California, 1953.

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food stores in the greater Los Angeles market. However, only 80 percent of the stores having a fresh red meat department carried fresh poultry meat. Erratic consumer demand for chicken seemed to be the chief reason why these stores did not offer fresh chicken meat.

Touching on the packaging of poultry, they bring out the fact that packaging makes branding possible. Branding is one of the most potent merchandising devices available to any seller. Probably the main effect is that it simplifies buying for the consumer. It would be difficult if not impossible for a consumer to know all she would like to know in order to make the most intelligent choice among the myriad of similar products available to her in most food stores. Packaging and branding make it possible for a consumer to substitute one word or name as a guide in buying poultry for the numerous specific product characteristics.

The significance of branding in the case of centrally prepackaged poultry lies in the fact that there would probably be two or more competitive brands of poultry on display in the retail store. The brand name could be used as a measure of desirable characteristics by the consumer. It could also provide a means for determining how much of each of the branded items to place on display at a given time.

These circumstances would probably apply more to the independent grocery stores which would handle the processors' branded items than to the chain grocery stores. Many of the chain grocery stores would probably set up their own centralized packaging operation and use their own brand name. In that case, there would not be any competitive brands within that chain grocery store organization. However, this would not eliminate the competition arising among brands in different stores within a city. In this manner poultry meat centrally prepackaged by Kroger's and carrying their brand name would be competing with branded poultry meat centrally prepackaged by other chain grocery stores and poultry processors. Hence, branding would provide an excellent method by which centralized prepackaging organizations could build a favorable reputation with consumers. The consumer could use branding as a guide to buying from among the various branded poultry meats.

Eastwood and Scanlan[14] undertook a study of the operating costs of fifteen cooperative poultry dressing plants. Their bulletin generally described and analyzed the direct, indirect, and overhead

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[14] Ralph A. Eastwood and John J. Scanlan, Operating Costs of 15 Cooperative Poultry Dressing Plants, Bulletin 70, Farm Credit Administration, USDA, Washington, D. C., 1952.

costs for dressing New York style and for eviscerating chickens and turkeys.

Gwin,[15] in a study revised in 1950, included a table listing the approximate yields of dressed, drawn, and boned poultry in relation to the live weight. The bulletin in general described and analyzed the Delmarva Broiler Industry.

Hawks and others[16] authored a very interesting manual complete with pictures on cutting-up poultry. This publication illustrated packaging materials and methods. It also touched on the costs of cutting-up and packaging fresh fryers and contained charts on the approximate weights, processing shrinkages, and estimated costs of frying chicken parts and of turkey parts.

In summary, it was found that the Armour & Co. reports on self-service for meats touched lightly on the subject of centralized prepackaging. However, they referred to the centralized prepackaging of red meat. None of the reports dealt specifically with poultry.

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[15] James M. Gwin, The Delmarva Broiler Industry, Bulletin A-57, Agricultural Experiment Station, University of Maryland, College Park, Maryland, Revised December, 1950.

[16] Charles D. Hawks, Fred G. Buzen, Edwin H. Matzen, Earl H. Rinear, W. D. Termohlen, and Don W. Lyon, Poultry Products Merchandising, Poultry and Egg National Board in Cooperation with the USDA, Chicago, Illinois, 1954.

A number of other studies touched on various phases of self-service for meats. Although they concerned themselves with red meats, it is felt by the writer that many of their findings would apply to poultry as well.

The study by Kramer contributed some valuable bits of information on centralized prepackaging for meats. However, the study was concerned with red meats.

In short, the studies reviewed in this chapter contributed only token amounts of information on the subject of centralized prepackaging of meats with nothing specifically on poultry. Nevertheless, they lent strength to this study because of the similarity existing between the prepackaging of red meat and the prepackaging of poultry meat.

CHAPTER III

IMPORTANCE OF POULTRY AS A FOOD IN THE UNITED STATES

How important is poultry as a food in the United States? Three different measures will be presented in this chapter in an attempt to answer this question.

The first measure deals with poultry expenditures as a percentage of total food expenditures. Table I is used to show this relationship for the years 1950 through 1954. The Marketing and Transportation Situation for February, 1954, indicated that poultry and eggs accounted for approximately 11 percent of the total food expenditure. Therefore, the per capita food expenditure multiplied by 11 percent resulted in the per capita expenditure for poultry and eggs. The division of the expenditure for poultry and eggs was approximately 55 percent for eggs, 35 percent for chicken meat, 9 percent for turkey meat, and 1 percent for other poultry meat.

After these per capita expenditures were calculated, it was a simple matter of multiplying each of them by the appropriate United States population figure to obtain the total expenditure for chicken meat, turkey meat, other poultry meat, and finally, all

Table I. Per capita expenditure for food, poultry and eggs, chicken meat, turkey meat, and other poultry meat in the United States, 1950-54.

Year	Food Expenditure	Poultry and Egg Expenditure	Chicken Meat Expenditure	Turkey Meat Expenditure	Other Poultry Meat Expenditure
	dollars	dollars	dollars	dollars	dollars
1950	350	38.50	13.48	3.46	0.38
1951	393	43.23	15.13	3.80	0.43
1952	406	44.66	15.63	4.02	0.45
1953	394	43.34	15.17	3.90	0.43
1954	393	43.23	15.13	3.80	0.43

Sources: The Marketing and Transportation Situation, 112, February, 1954.
The Marketing and Transportation Situation, 115, October 28, 1954.
The Poultry and Egg Situation, 165, May-June, 1953.

poultry meat. These calculations can be more clearly realized from a perusal of Table II. From these calculations it was relatively easy to see that over the five years, 1950 through 1954, approximately 3 billion dollars were spent annually by consumers for poultry meat. The majority of this amount was spent for chicken meat.

Reflecting back on the original question, one might say that percentagewise poultry meat did not appear to be important since it accounted for only approximately 5 percent of the total food expenditure. Considering the same question from a dollar and cents point of view could result in an entirely different answer. Three billion dollars a year is "big business."

The second measure compares production of poultry meat with red meat in the United States over a ten-year period. In 1945, some 27.4 billion pounds of red meat and poultry meat were produced in the United States. Nine years later the amount had increased to 30.1 billion pounds. Figure 1 reveals the proportion of total meat production contributed by each of the red meats and the poultry meats. The percentages remained fairly stable over the ten years. In the case of poultry meat, there was a 3 percent increase, beginning with 13 percent in 1945 and increasing to 16 percent of the total production of red and poultry meat in 1954. A mere 3 percent increase added more than a billion pounds to poultry production.

Table II. United States population and total expenditures for chicken meat, turkey meat, other poultry meat, and all poultry meat in the United States, 1950-54.

Year	United States Population	Total Chicken Meat Expenditure	Total Turkey Meat Expenditure	Total Expenditure for Other Poultry Meat	Total Expenditure for All Poultry Meat
	millions	millions of dol.	millions of dol.	millions of dol.	millions of dol.
1950	151.7	2,044.9	524.9	57.6	2,627.4
1951	154.4	2,336.1	576.7	66.4	2,979.2
1952	157.0	2,453.9	631.1	70.6	3,155.6
1953	159.7	2,422.6	622.8	68.7	3,114.1
1954	162.4	2,346.1	617.1	69.8	3,033.0

Sources: Agricultural Outlook Charts for 1954 and 1955.

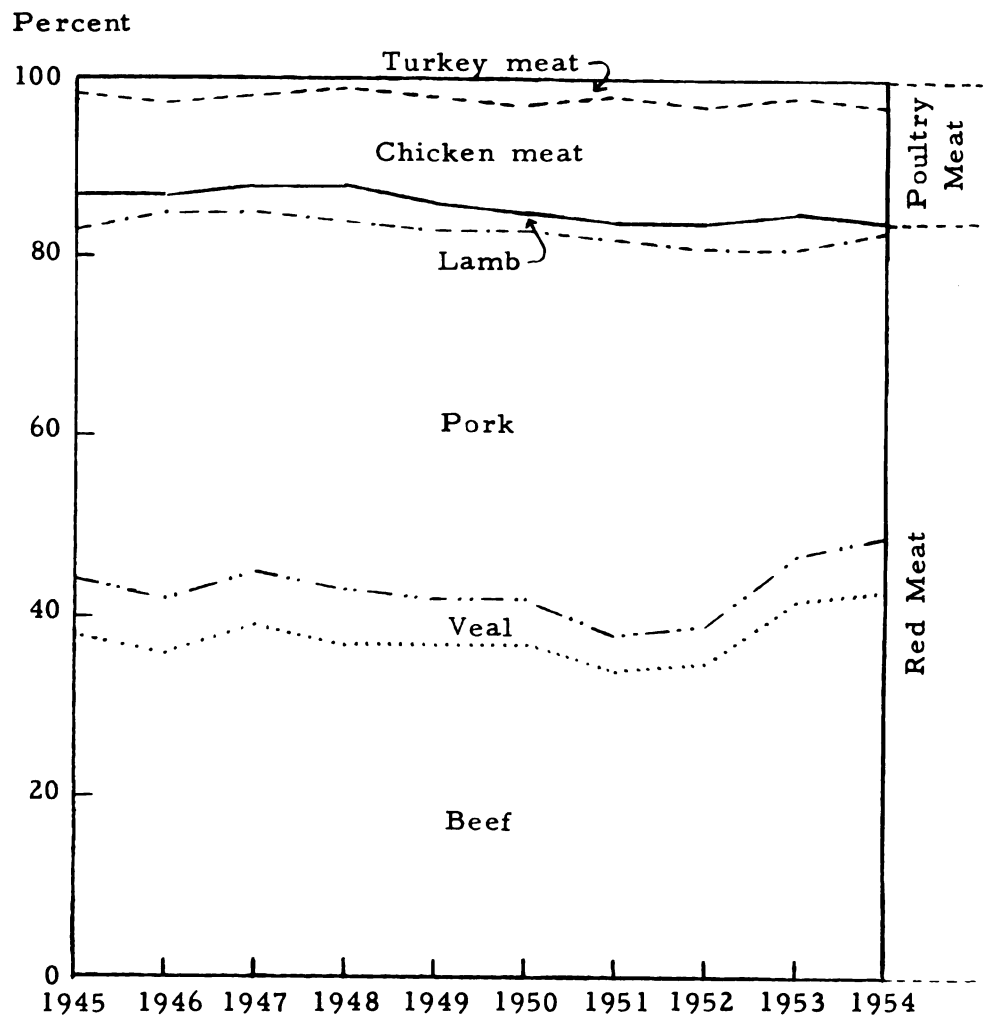


Figure 1. Production percentages for red meat and poultry meat,[1] beef, veal, pork, lamb, chicken, and turkey, in the United States, 1945-54.

Source: Agricultural Outlook Charts, 1955.

[1] Eviscerated weight.

Percentagewise, chicken meat contributed by far the greatest amount to poultry meat production over the period studied. However, it should be remembered that it requires large physical changes to effect even small percentage changes when dealing with such huge volumes. Because of this, the production of nearly five billion pounds of poultry meat seems like a great amount, while 15 percent of the total production of red and poultry meat may not seem so large.

The third measure deals with per capita consumption of red meats for the years 1930 through 1954. Referring to Figure 2, one is able to note the relationships among the per capita trend lines for the consumption of turkey meat, chicken meat, beef, and pork. The trend in per capita consumption for both turkey and chicken showed a gradual increase except for the rapid rise and leveling off during World War II. Conversely, per capita consumption of both beef and pork fluctuated widely during the same period. These facts made it difficult to determine the degree to which poultry meats substituted for either one of the major red meats. In fact, from the extent of the data available it would appear that consumers did not consider poultry meat to be a substitute for either beef or pork, but consumed it in addition to these red meats.

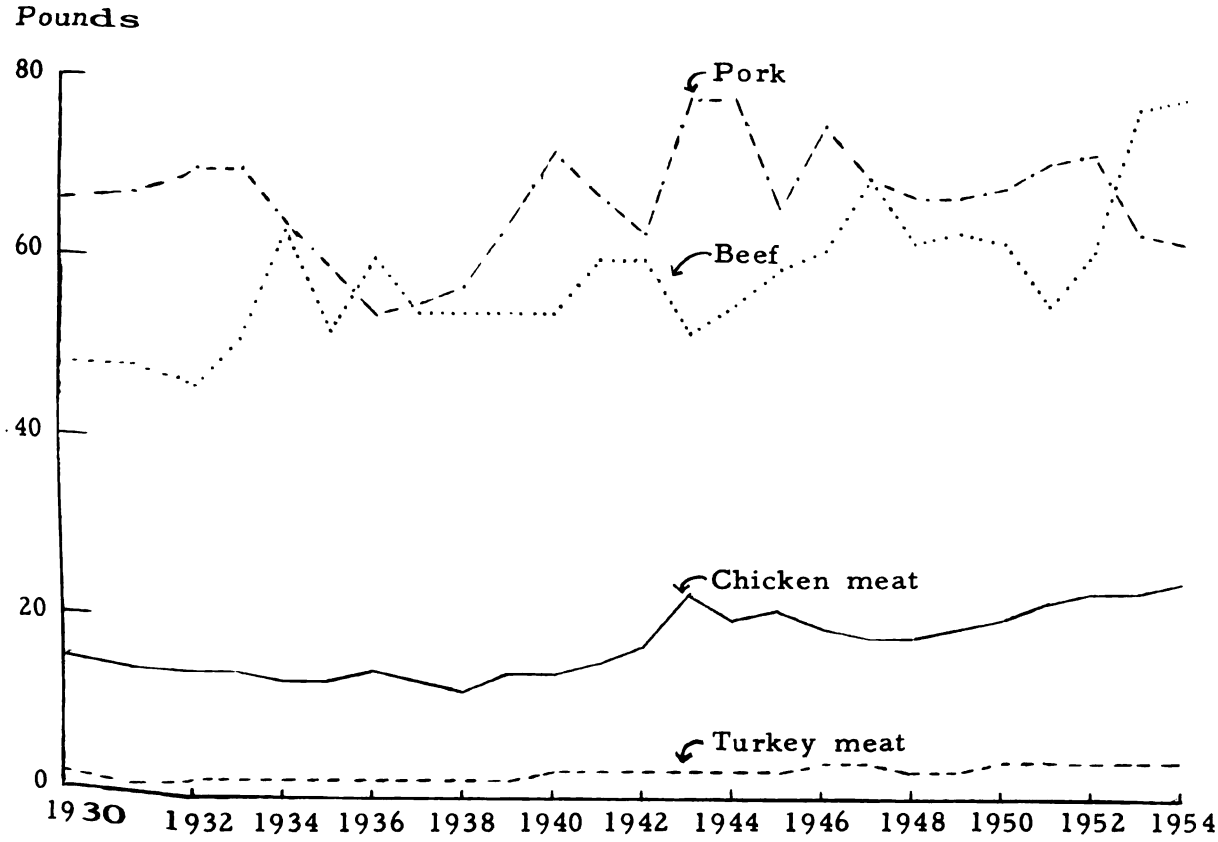
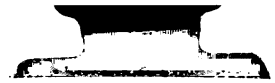


Figure 2. Per capita consumption of red meat and poultry meat,[1] beef, pork, chicken meat, and turkey meat, in the United States, 1930-54.

Source: Agricultural Outlook Charts, 1955.

[1] Eviscerated weight.



Summarizing the discussion briefly, it was found that poultry expenditures over the five years (1950-1954) averaged approximately 3 billion dollars; poultry production increased from about 3 billion pounds in 1945 to nearly 5 billion pounds in 1954. Per capita consumption increased at a relatively constant and gradual rate. On a percentage basis poultry meat expenditures accounted for approximately 5 percent of the total food expenditures; production of poultry accounted for about 15 percent of the total production of red meat and poultry meat; and per capita consumption of poultry was about 25 to 30 percent of the per capita consumption of either beef or pork.

These data led the author to believe that poultry was important as a food in the United States.

CHAPTER IV

IMPORTANCE OF POULTRY MEAT AS A FOOD IN MICHIGAN AND IN DETROIT

Having discussed the importance of poultry meat as a food in the United States in the previous chapter, this chapter will determine Michigan's place in the nation and Detroit's place in Michigan as consumers of poultry meat. This will be accomplished by analyzing consumption and expenditure data for poultry meat in Michigan and Detroit. Michigan will be compared with other states in the nation and Detroit will be compared with other Michigan metropolitan areas.

Per capita and total expenditure figures for various kinds of poultry meat appear in Table III. One will note that the per capita expenditure figures for chicken meat and turkey meat are the same as those appearing in Chapter III. The per capita expenditure figures for all poultry meat are the result of adding the per capita expenditure figures for chicken meat, turkey meat, and other poultry meat (ducks and geese) as were presented in Chapter III. Also, it should be pointed out that the same per capita figures were used in calculating Michigan's total expenditures for chicken meat, turkey meat, and all poultry meat as were used for the United States.

Table III. Michigan's population, per capita and total expenditures for chicken meat, turkey meat, and all poultry meat in Michigan, 1950-54.

Year	Michigan's Population	Per Capita Chicken Meat Expenditure	Total Chicken Meat Expenditure	Per Capita Turkey Meat Expenditure	Total Turkey Meat Expenditure	Per Capita Poultry Meat Expenditure	Total Poultry Meat Expenditure
	millions	dollars	millions of dol.	dollars	millions of dol.	dollars	millions of dol.
1950 . .	6.4	13.48	86.3	3.46	22.1	17.32	110.8
1951 . .	6.5	15.13	98.3	3.80	24.7	19.36	125.8
1952 . .	6.7	15.63	104.7	4.02	26.9	20.10	134.7
1953 . .	6.8	15.17	103.2	3.90	26.5	19.50	132.6
1954 . .	7.0	15.13	105.9	3.80	26.6	19.36	135.5

Sources: Michigan Agricultural Statistics, 1953; Current Population Reports, Population Estimates, Series P-25.

The reason for this was that per capita figures are not generally calculated for the state or local level. This should be kept in mind when reviewing this table.

Total poultry meat expenditures in Michigan increased by some 22 percent from 1945 to 1954. The two primary factors influencing this increase were (1) an increase in per capita expenditures and (2) an increase in population. The per capita expenditures increased by 2 dollars over the five-year period, with the maximum per capita expenditures for any one year falling during 1952 at $20.10 per person. During the same period population increased at an annual rate slightly in excess of 100 thousand persons.

Expenditures for chicken meat were by far the most important, claiming approximately 84 percent of the total poultry expenditures in 1954.

Poultry meat consumption figures show that Michigan consumed about 4 percent of the total number of pounds of poultry meat consumed in the United States. As a percentage of the total poultry meat consumed, Michigan maintained a relatively stable proportion. The stability of this proportion may be partially explained by the use of national per capita consumption figures in the calculations. This in essence made per capita consumption a fixed factor insofar

as individual states and the national average were concerned. Population was a variable factor. However, the author did not believe this 4 percent should be left to speak for itself, because there are forty-seven other states and the District of Columbia eating out of the national supply of poultry meat.

Table IV shows much better Michigan's place in the nation as a consumer of poultry. Here one is able to see that Michigan ranked seventh in the nation as a consumer of poultry meat. It is interesting to note that even the leading state (New York) consumed only a little over 9 percent of the total United States consumption of poultry meat. Another significant point is the fact that over the ten years, 1945 to 1954, the percentage of the national total consumed by each of the leading states usually varied, but not sufficiently to change their order in the ranking.

Expenditure figures for chicken meat, turkey meat, and total poultry meat for Detroit appear in Table V. The total expenditures for the various kinds of poultry meat were obtained by multiplying the United States per capita expenditures by the Detroit population figures for each of the years, 1950 through 1954.

Slightly over 50 million dollars were spent for poultry meat by the people of Detroit in 1950. Four years later the amount had increased to nearly 64 million dollars, an increase of 28 percent.

Table IV. Population, consumption, and rank of the seven major poultry meat consuming states in the nation, 1945 and 1954.

State[1]	1945			1954			State's Rank in the Nation
	Population	Consumption of Poultry Meat	Percent of the Total U. S. Consumption	Population	Consumption of Poultry Meat	Percent of the Total U. S. Consumption	
	millions	millions of lbs.	percent	millions	millions of lbs.	percent	rank
Calif. .	9.5	234.6	7.1	12.6	355.3	7.7	2
Ill. . . .	7.6	187.7	5.7	9.2	259.4	5.6	4
Mich. .	5.5	135.9	3.9	7.0	197.4	4.3	7
N. Y. .	12.5	308.8	9.4	15.4	434.3	9.4	1
Ohio . .	6.9	170.4	5.2	8.6	242.5	5.2	5
Penn. .	9.0	222.9	6.8	10.8	304.6	6.6	3
Texas .	6.8	168.0	5.1	8.5	239.7	5.2	6

[1] Each of the remaining forty-one states and the District of Columbia consumed less than 3 percent of the total United States poultry consumption.

Sources: Statistical Abstract of the United States, 1953.
Current Population Reports, Population Estimates, Series P-25.

Table V. Detroit's population, per capita and total expenditures for chicken meat, turkey meat, and all poultry meat in Michigan, 1950-54.

Year	Detroit's Population	Per Capita Chicken Meat Expenditure	Total Chicken Meat Expenditure	Per Capita Turkey Meat Expenditure	Total Turkey Meat Expenditure	Per Capita Poultry Meat Expenditure	Total Poultry Meat Expenditure
	millions	dollars	millions of dol.	dollars	millions of dol.	dollars	millions of dol.
1950 . .	2.9	13.48	39.1	3.46	10.0	17.32	50.2
1951 . .	3.0	15.13	45.4	3.80	11.4	19.36	58.1
1952 . .	3.1	15.63	48.4	4.02	12.5	20.10	62.3
1953 . .	3.1	15.17	47.0	3.90	12.1	19.50	60.4
1954 . .	3.3	15.13	49.9	3.80	12.5	19.36	63.9

Source: Statistical Abstract of the United States, 1953.

Chicken meat expenditures accounted for about four-fifths of the total poultry meat expenditures. Turkey meat expenditures were approximately one-fifth of the total poultry meat expenditures. The percentage attributed to expenditures for ducks and geese was negligible.

Shifting the analysis to consumption data, Detroit's consumption averaged 46 percent of the total poultry consumed in Michigan. This meant that of the total consumption of poultry meat in the state of Michigan nearly half of it was consumed within the Detroit area. This was not really surprising when it was known that almost half the population of Michigan was located within the Detroit area.

A cursory glance at Table VI leaves no doubt that the Detroit area was by far the greatest consumer of poultry meat in Michigan. The other seven metropolitan areas accounted for approximately 20 percent of the total poultry consumption in the state. This meant that more than twice as much poultry meat was consumed within the Detroit area alone as was consumed within the other seven metropolitan areas combined. These eight metropolitan areas consumed about 65 percent of all poultry meat consumed within the state of Michigan. The remaining 35 percent was consumed by the population living outside of these metropolitan areas.

Table VI. Population, consumption, and rank of eight major metropolitan areas with regard to poultry meat consumption in Michigan, 1945 and 1954.

Metropolitan Areas	1945			1954			Rank in the State
	Population	Consumption of Poultry Meat	Pct. of Total Mich. Consumption	Population	Consumption of Poultry Meat	Pct. of Total Mich. Consumption	
	Thousands	Thousand lbs.	Pct.	Thousands	Thousand lbs.	Pct.	Rank
Bay City . . .	78.1	1,929.1	1.4	96.6	2,724.1	1.4	8
Detroit	2,475.0	61,132.5	45.0	3,290.0	92,778.0	47.0	1
Flint	238.2	5,883.5	4.3	297.5	8,389.5	4.2	3
Grand Rapids	257.4	6,357.8	4.7	316.4	8,922.5	4.5	2
Jackson	97.4	2,405.8	1.8	118.3	3,336.1	1.7	7
Kalamazoo . .	104.5	2,581.2	1.9	138.6	3,908.5	2.0	6
Lansing	136.4	3,369.1	2.5	189.7	5,349.5	2.7	4
Saginaw	136.4	3,369.1	2.5	168.0	4,737.6	2.4	5

Source: Statistical Abstract of the United States, 1953.

Summarizing briefly, it was found that Michigan consumed about 4 percent of the total number of pounds of poultry meat consumed in the United States in 1945 and again in 1954. Compared with other leading poultry consuming states, Michigan ranked seventh. Expenditures for chicken meat accounted for the greatest amount of the total poultry meat expenditures.

In 1954 some 64 million dollars were spent for poultry meat consumed in Detroit. This was an increase of about 28 percent over 1950. Detroit consumed about 46 percent of the total number of pounds of poultry meat consumed within the state of Michigan.

Finally, comparison with other metropolitan areas showed Detroit to be the leading consumer of poultry meat in Michigan.

CHAPTER V

POULTRY WHOLESALING IN DETROIT

It was found in the last chapter that Detroit is the greatest poultry consuming area in the state of Michigan. This chapter is devoted to the analysis of some of the factors involved in the wholesaling of this poultry.

States from which Poultry was Received

During the period 1949 through 1953, thirty-nine of the forty-eight states plus the District of Columbia and Canada contributed to the supply of poultry flowing into Detroit. From Vermont in the East, Georgia and Florida in the South, and California and Washington in the West came the vast flow of poultry supplies required to fill the needs of the people in the giant industrial city. Table VII depicts the states from which poultry was received in Detroit and the percentage of the total dressed poultry contributed by each for the years 1949 through 1953. Dressed poultry receipts as a percentage of total Detroit poultry receipts increased annually, until, by 1953, dressed poultry accounted for about 53 percent of the total Detroit poultry receipts.

Table VII. Percent of total dressed poultry receipts at Detroit, by state of origin (by truck and rail), 1949-1953.

State	1949	1950	1951	1952	1953
	percent	percent	percent	percent	percent
Alabama . .	-	-	1	2	5
Delaware .	10	9	8	5	2
Georgia . .	-	7	26	41	40
Illinois . . .	6	6	6	7	6
Indiana . . .	22	11	4	2	1
Iowa	1	2	2	1	1
Kentucky .	-	4	5	2	3
Maryland .	7	18	19	15	12
Michigan .	4	3	2	2	2
Minnesota .	5	3	2	3	2
Missouri .	9	7	5	2	3
Nebraska .	9	5	4	4	2
N. C. . . .	-	-	4	3	9
Ohio	5	4	3	3	4
Penn. . . .	9	9	4	2	1
Tennessee.	-	-	-	1	3
Others[1] . .	13	12	5	5	4
Pct. totals	100	100	100	100	100
Total lbs.	20,501,830	27,029,015	30,462,767	35,996,230	38,415,465

Each dash indicates that the state contributed less than 1 percent that year.

[1] This group included twenty-one other states, the District of Columbia, and Canada.

Source: Federal-State Market News Service, 1949-53.

It is interesting to note that some of the heavy suppliers of dressed poultry in 1949 contributed only token amounts in 1953. Notable within this group were: Indiana's percentage dropped from 22 percent in 1949 to only 1 percent in 1953; Delaware, from 10 percent in 1949 to 2 percent in 1953; Pennsylvania, from 9 percent in 1949 to 1 percent in 1953; Missouri and Nebraska were also included within this group.

Quite the contrary was true of other states. The prime example in this group was Georgia, which supplied less than 1 percent of the dressed poultry received in Detroit in 1949; yet, by 1953, this state alone contributed 40 percent of the total Detroit dressed poultry receipts. Other less dramatic examples were: North Carolina's percentage jumped from less than 1 percent in 1949 to 9 percent in 1953; Maryland, from 7 percent in 1949 to 12 percent in 1953. Other states contributed a relatively constant percentage of the total over the five-year period. A clearer conception of some of these shifts in trends among the major suppliers of dressed poultry to the Detroit market can be obtained from Figure 3.

A somewhat similar picture for live poultry receipts at Detroit can be gained from Table VIII. The major percentage decline came in the case of Canada, which in 1949 supplied 25 percent of

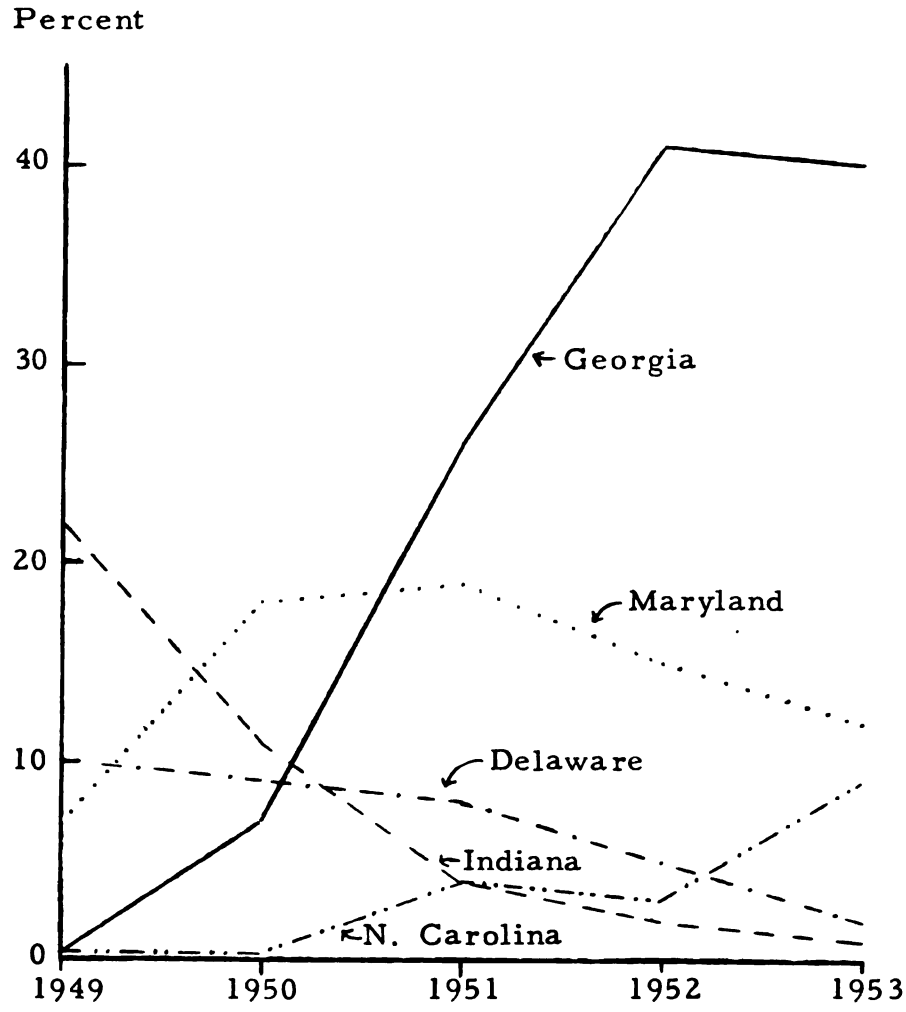


Figure 3. Shifts in trends of five important suppliers of dressed poultry to the Detroit market, 1949-53.

Source: Federal-State Market News Service, 1949-53.

Table VIII. Percent of total live poultry receipts at Detroit, by state of origin (by truck and rail), 1949-1953.

State	1949	1950	1951	1952	1953
	percent	percent	percent	percent	percent
Delaware .	-	3	3	1	-
Illinois . . .	2	2	1	-	-
Indiana . . .	21	29	38	35	35
Kentucky .	2	3	3	1	2
Michigan .	19	25	30	32	35
Ohio	14	20	23	25	27
W. Va. . .	14	8	1	-	-
Canada . . .	25	9	-	5	-
Others[1] . .	3	1	1	1	1
Pct. totals	100	100	100	100	100
Total lbs.	38,991,529	38,268,883	36,607,961	37,078,111	34,373,227

Each dash indicates that the state contributed less than 1 percent that year.

[1] This group included twenty-five other states.

Source: Federal-State Market News Service, 1949-1953.

the total live poultry received in Detroit, but by 1953 it was contributing less than 1 percent of the total. West Virginia's percentage declined from 14 percent in 1949 to less than 1 percent in 1953. Other states which contributed live poultry to the Detroit market in 1949 had completely dropped from the same market by 1953. Of the live poultry received in Detroit in 1953, 97 percent came from only three states. These three states were: Indiana, 35 percent; Michigan, 35 percent; Ohio, 27 percent. The contributions of these three states to the total Detroit live poultry receipts for 1949 through 1953 can be viewed in Figure 4.

The remaining 3 percent of the live poultry receipts at Detroit were supplied by seven other states and Canada.

Michigan supplied Detroit with more than one-third of its live poultry needs. At the same time it supplied only a small amount of the dressed poultry receipts at Detroit. If this trend for supplying live poultry continues in the future as it did during the five-year period indicated, Michigan will be able to supply all of Detroit's needs for live poultry. This will be facilitated by the transition from live poultry receipts to a greater amount of dressed poultry receipts from out-of-state sources.

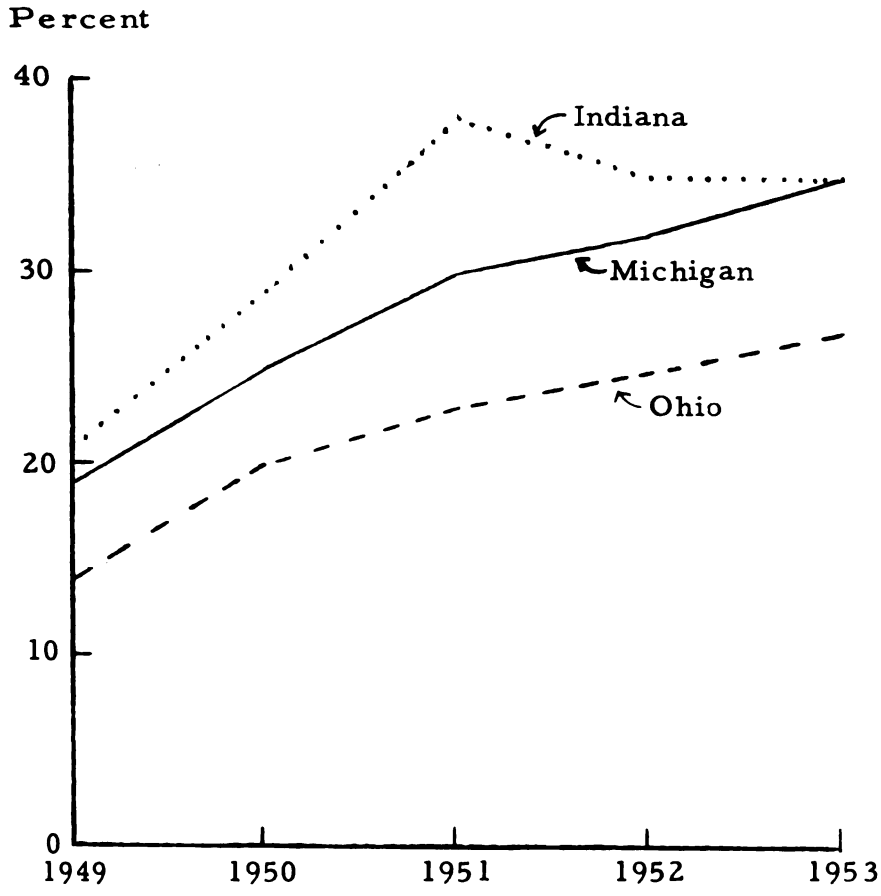


Figure 4. Trends of the three major suppliers of live poultry to the Detroit market, 1949-53.

Source: Federal-State Market News Service, 1949-53.

Mode of Transportation

Poultry arrived in Detroit by means of truck and rail. Trucks were by far the more important mode of transportation for both dressed and live poultry. Figure 5 represents the percentage of dressed poultry being transported by each of the two methods during the five-year period, 1949 through 1953. Even in 1949, some 78 percent of the dressed poultry moved by truck; by 1953 the amount delivered by truck had increased to include 98 percent of the dressed poultry transported.

The convenience of using trucks--i.e., loading at the processor's dock and unloading at the wholesaler's dock without transfer--as well as the relative costs, seemed to be the major reasons for preferring truck transportation.

The preference for truck transportation in moving live poultry was even more pronounced. During the first three years (1949, 1950, and 1951) over 99 percent of the live poultry received in Detroit arrived by truck. In the years 1952 and 1953 all live poultry receipts arrived by truck transportation.

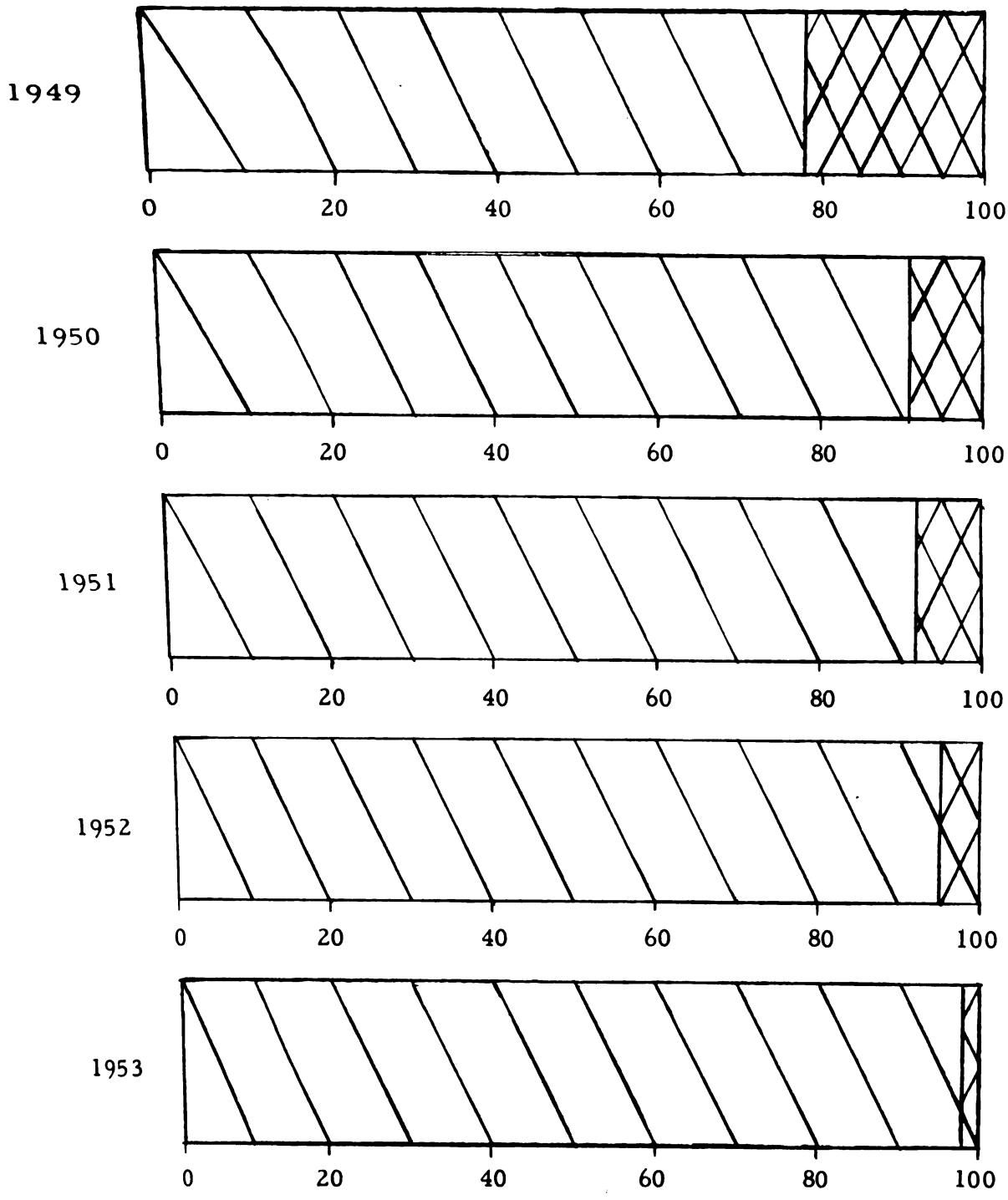


Figure 5. Percent of dressed poultry received at Detroit by truck and rail, 1949-53 (truck receipts at left, rail receipts at right).

Source: Federal-State Market News Service, 1949-53.

Forms in which Poultry was Received

As was noted in a previous section, poultry was received in Detroit either dressed or alive. Included in the dressed poultry were such forms as New York dressed, unfrozen ready-to-cook, and quick-frozen ready-to-cook. A survey was conducted by the author among the Detroit poultry wholesalers. The results of the question dealing with the forms in which poultry was received are summarized in Table IX.

As was expected, the majority of the broilers were received in a ready-to-cook form and the stewing chickens in a live form. The percentage for turkey receipts in the various forms was a little surprising. It was felt that a larger proportion would be received in the quick-frozen and ready-to-cook forms. The author consulted with some poultry marketing experts at Michigan State College on this point. They indicated that the percentage of the turkeys received alive seemed a little high for that year. In addition, by summing the percentage figures for dressed poultry on one side and the percentage figures for live poultry on the other side, it indicated that slightly over half of the total poultry was received in a live form. However, the Federal-State Market News Summary of Detroit poultry receipts for 1953 showed dressed poultry receipts to be slightly more than

Table IX. Forms in which various kinds of poultry were received at twelve Detroit poultry houses, 1953.

Form	Broilers or Fryers		Stewing Chickens		Turkeys	
	Poundage	Pct.	Poundage	Pct.	Poundage	Pct.
Ready-to-cook	47,573,000	77	2,082,000	27	2,549,000	28
New York dressed	4,905,000	8	76,000	1	37,500	<1
Quick-frozen					288,000	3
Live	9,087,000	15	5,542,000	72	6,257,500	69[a]
Total	61,565,000	100	7,720,000	100	9,132,000	100

[a] This percentage figure may be about 10 percent too high.

Source: Survey of Detroit poultry wholesalers.

half the total poultry receipts. All indications hinted that the 69 percent for receipts of turkeys in the live form was somewhat high. It was felt that a figure near 60 percent would have been more nearly correct for the year 1953.

In all probability the trend will continue toward the receipt of a greater proportion of poultry in the dressed form. Many of the Detroit poultry wholesalers, who were also processors, expressed some concern over the competition they were receiving from the South, especially from Georgia and North Carolina. They claimed they could receive eviscerated poultry from the South cheaper than they could buy live poultry and process it themselves. At the time the author made his survey, most of the poultry processing plants were operating far below capacity. Many of the processors were considering including some other line of business and merely distributing eviscerated poultry, received from the South, to the old, steady customers. From this it is quite evident that the form in which poultry is received at Detroit can play a vital role in the structure of the Detroit poultry market.

Processing Operations Performed

Even though a large part of the poultry was received in a dressed form, most of the Detroit poultry wholesalers indicated that they performed some processing operations. Table X shows the percentage of the Detroit poultry wholesalers who were contacted who performed the various processing operations within their plants. It should be understood that this table merely points out that these processing operations were performed to some degree. It does not provide an answer to the question of how much of the poultry was processed. Thus, one plant may have eviscerated every bird that passed through the plant while another eviscerated only a minor portion. This should help explain why such large percentages are found opposite the various processing operations.

The significant point in this table from the author's point of view was the fact that such a large number of plants were equipped to perform the various processing operations. At the time of this writing the facilities are being used even less than they were in 1953. Emphasis has shifted from the killing, dressing, and eviscerating operations in these plants towards more cutting-up, freezing, and packaging. While these operations were only in the embryonic stage, they were at least an indication of possible future developments.

Table X. Percentage of the nineteen Detroit poultry houses performing processing operations, 1953.

Processing Operation	Broilers or Fryers	Stewing Chickens	Turkeys
	percent	percent	percent
Killing and New York dressing	74	79	74
Drawing or eviscerating	58	63	52
Cutting-up	32	32	21
Freezing	21	21	21
Packing frozen poultry in consumer-sized packages	10	10	10
Packing	42	52	52
None of the above	16	16	16

Source: Survey of Detroit poultry wholesalers.

Cost of Various Processing Operations

The cost of processing differed somewhat from one plant to another. However, the costs given for similar processing operations in different plants were very close. Six plants stated that the processing of poultry from a live to a New York dressed form cost them 6 cents a pound on the average. Processing from a New York dressed to a ready-to-cook form averaged 8 cents a pound for three plants. These cost data were provided primarily by the large wholesalers. The small operators reported this information to be unknown when interviewed by the writer.

No information was received from any of the plants on the cost of performing some of the other processing operations; i.e., cutting-up, freezing, packing, and packaging frozen poultry in consumer-sized packages. Nevertheless, costs were received from two plants which merely handled the poultry. They claimed an average cost of less than 1 cent per pound for handling.

It will be noted that all the costs were given in cents per pound. The same method was used by all the poultry houses to determine their wholesale margin; i.e., cents per pound. It was a significant point to the author to find that not even one of the poultry houses determined its wholesale margin on a set percentage basis.

Cents per pound appeared to give them more flexibility in setting the wholesale margin in harmony with the tone of the market.

Types of Sales Outlets

After these poultry houses had processed the poultry, what types of sales outlets did they use? A perusal of Table XI can help answer this question. Over 40 percent of the total poultry was sold through meat markets and chain grocery stores. Almost a third of the total went to other poultry houses which handled mostly live poultry. In these places the poultry was sold alive, and then processed to meet the desire of the customer. The author observed this operation a number of times. People, usually colored or foreign-born, would enter the poultry house and shop around among the crates of live poultry. After selecting a bird or birds, they would make their desires known to the proprietor or an employee. He would in turn process the birds to meet the desires of the customer.

Some of the poultry houses did a relatively large volume of business in providing poultry for special occasions such as weddings, parties, and banquets. These were examples of selling direct to consumers.

Table XI. Percentage of the various kinds of poultry sold through the different sales outlets for thirteen poultry houses in Detroit, 1953.

Type of Sales Outlet	Broilers or Fryers	Stewing Chickens	Turkeys
	percent	percent	percent
Meat markets	29	27	26
Direct to consumers	12	9	6
Chain grocery stores	15	15	15
Independent grocery stores	11	10	12
Hotels and restaurants	10	10	11
Dime stores	1	1	1
Institutions	1	1	1
Other poultry houses	21	27	28
Total percentage	100	100	100

Source: Survey of Detroit poultry wholesalers.

One of the most novel sales outlets was through dime stores. One relatively large poultry house had a franchise to sell poultry through one of the large dime stores in Detroit. They handled only cut-up fryers through that outlet. The fryers were cut-up at the plant and moved out to the various stores early each morning. Upon arrival at the dime stores, the fryers were placed in a display counter and covered with crushed ice. The crushed ice helped prevent the fryers from spoiling or shrinking. This one poultry house claimed that about 20 percent of its fryers were sold through this outlet. However, as a percentage of all broilers or fryers, this method only accounted for approximately 1 percent.

Hotels and restaurants handled about 10 percent of the broilers and fryers. A similar percentage was handled by independent grocery stores. Institutions such as schools, hospitals, and others claimed about 1 percent of the total.

There did not appear to be any significant difference among the sales outlets for the various kinds of poultry. It appeared as if once the outlets had been chosen, they were used for all of the different kinds of poultry handled.

Method of Delivering Poultry to the Retail Outlets

All of the poultry wholesalers contacted said that they delivered the poultry to the retail outlets. They all used truck transportation to do so.

Eleven of the nineteen plants used only crushed ice as a refrigerant in their delivery trucks. A combination of mechanical and crushed ice refrigeration was used by two plants.

Mechanical refrigeration only was used by another company, and five reported that they used no refrigerant in their delivery trucks. A possible reason for the use of mechanical and ice refrigeration by some firms while others used none would be the difference in the length of time the poultry remained on the delivery truck. Much of the poultry was delivered within an hour or less, but in some cases the poultry remained on the delivery truck for over five hours. The season of the year also helped determine whether a refrigerant was used or not.

Another factor considered was the frequency of delivery for delivering poultry to the different retail outlets. This information is summarized in Table XII.

Table XII. Percentage of the Detroit poultry houses delivering poultry according to the listed schedules, 1953.

Type of Sales Outlet	Once Weekly	Twice Weekly	Thrice Weekly	Once Daily	On Call
	percent	percent	percent	percent	percent
Meat markets . . .	31	15	8	23	23
Direct to consumers		12.5	12.5	50	25
Chain grocery stores			20	80	
Independent grocery stores . .	15		23	23	39
Hotels and restaurants	17		25	25	33
Dime stores				100	
Institutions			33	67	
Other poultry houses					100

Source: Survey of Detroit poultry wholesalers.

It should be remembered, when reviewing Table XII, that the percentage figures represent only the proportion of the Detroit poultry wholesalers using that schedule, not the volume of business transacted. For example, the table shows that, of the Detroit poultry wholesalers delivering to meat markets, 31 percent of them delivered only once a week. The delivery itself may have consisted of one crate of poultry or a whole truckload; the table does not show this. It is entirely possible that the 31 percent represented meat markets which handled such small volumes of poultry meat that they required or desired restocking only once a week. The same situation could have existed for the independent grocery stores, hotels, and restaurants which were resupplied with poultry meat only once a week. Conversely, it was likely that the retail outlets which took daily delivery handled large volumes of poultry meat.

It was interesting to note that a large percentage of the Detroit poultry wholesalers made daily deliveries, especially to dime stores, chain grocery stores, and institutions. The deliveries direct to consumers for weddings, special parties, and such were somewhat varied. About a fourth of the retail outlets and poultry houses asked for deliveries to be made on their request.

In connection with delivery, it was found that a few of the Detroit poultry wholesalers were delivering to certain retail outlets fresh, unfrozen poultry that had been prepackaged at the wholesaler's plant. Certain aspects of this will be discussed in the next section.

Prepackaging of Fresh, Unfrozen Poultry at the Wholesaler's Plant

It was mentioned in the previous section that a few Detroit poultry wholesalers were performing a prepackaging service. Actually, according to the information the author received, there were three. The only type of poultry they prepackaged in consumer-sized packages at the plant in a fresh, unfrozen form was fryers. These prepackaged fresh fryers were delivered to meat markets, chain and independent grocery stores.

Each of the three Detroit poultry wholesalers provided the author with an estimate of the number of pounds of fryers he prepackaged fresh at his plant during 1953. Wholesaler number one estimated that about 10 percent of his 1953 broiler-fryer volume was prepackaged fresh at the plant. On the basis of the volume he handled, this would have meant that some 150,000 pounds of fryers were prepackaged fresh in his plant. Wholesaler number nine indicated that approximately 40 percent of his broiler-fryer volume was

prepackaged fresh, unfrozen and in consumer-sized packages. This meant that about 800,000 pounds of fresh fryers were prepackaged in his plant during 1953. Finally, wholesaler number ten estimated that about 5 percent of his broiler-fryer volume, some 750,000 pounds, was prepackaged fresh, unfrozen at his plant during 1953. What proportion of these fryers was prepackaged as whole birds and what proportion was prepackaged as cut-up fryers the author did not learn.

When asked whether they planned on doing a greater volume of prepackaging of fresh, unfrozen fryers at their plants during 1954, only one wholesaler answered in the affirmative. Reasons given for deciding against continuing the prepackaging operation at the plant were: cost of packaging materials, shrinkage, freshness, shelf-life, labor cost, and the difficulty of competing with poultry prepackaged in the retail store.

Estimated Length of Shelf-Life for Poultry

In conjunction with the problem of shelf-life for poultry, the question was asked as to their estimation of the length of shelf-life for both unfrozen and frozen poultry. For fresh, unfrozen poultry the estimations of the length of shelf-life ranged from one to ten days, with the majority of the estimations falling within the one- to

five-day range. Of interest was the fact that the estimation of a ten-day shelf-life was given by one of the poultry wholesalers who prepackaged fresh, unfrozen poultry at his plant. If the rapid increase in bacterial growth on red meats after three days as found by Voegeli also held for poultry meat, this poultry would certainly be infested at the end of ten days.[17] Estimations on the length of shelf-life for fresh-frozen poultry ranged from six months to an indefinite time period. However, the majority of the estimations fell within a six- to twelve-month period.

The Detroit poultry wholesalers were asked to compare the flavor of unfrozen and frozen poultry. The ansers given were as follows: 31 percent indicated that fresh, unfrozen poultry was better; 31 percent felt the difference in flavor was insignificant; and 7 percent claimed that fresh-frozen poultry had the better flavor. The remaining 31 percent gave no answer to the question.

The customers of the Detroit poultry wholesalers preferred broilers or fryers and stewing chickens in a fresh, unfrozen form. There appeared to be no expression of preference for turkeys and ducks in one form over the other.

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[17] Voegeli, op. cit. (see Chapter II).

Summary

Detroit received poultry from many of the states, the District of Columbia, and Canada. In 1953 Georgia supplied Detroit with about 40 percent of its dressed poultry receipts. Indiana and Michigan each supplied 35 percent of the live poultry receipts, with Ohio contributing 27 percent.

Truck transportation was used to transport all of the live poultry and about 98 percent of the dressed poultry to the Detroit Market in 1953.

The majority of the broilers and fryers were received in a dressed form, while most of the stewing chickens and turkeys arrived in Detroit alive.

Most of the Detroit poultry wholesalers did some processing operations, but the volume of poultry being processed in Detroit was decreasing. The plants were operating much below capacity. The costs of different processing operations were: processing live to New York dressed, 6 cents a pound; and processing New York dressed to ready-to-cook, 8 cents a pound. Those plants performing none of the processing operations, but merely handling the poultry, operated at a cost of less than 1 cent a pound. These costs help explain why

the Detroit poultry processors were finding it very difficult to meet the competition from Southern poultry processors.

The most prominent sales outlets were meat markets, other poultry houses, and chain grocery stores. Delivery to the retail outlets was made by refrigerated trucks; crushed ice was the most frequently used refrigerant. Most of the wholesalers made daily deliveries, but there were a relatively large number of retail outlets receiving delivery less frequently. In fact, some received delivery only once a week.

Three of the Detroit poultry wholesalers did prepackaging of fresh, unfrozen fryers at their plant in 1953. However, only one demonstrated any desire to continue the operation on a larger volume in 1954.

Estimations of the length of shelf-life for fresh, unfrozen poultry ranged from one to ten days, and for fresh-frozen poultry, from six months to an indefinite time.

Thirty-one percent of the wholesalers preferred unfrozen to frozen poultry; 31 percent indicated there was no significant difference; and 7 percent claimed frozen to be more flavorful than unfrozen poultry. Thirty-one percent declined to answer this question. The divergence of answers precluded any reliable conclusions from this question.

CHAPTER VI

POULTRY RETAILING IN DETROIT

As was noted in the previous chapter, the Detroit poultry wholesalers delivered the poultry to the various retail outlets. What happened to the poultry between the time it was delivered to the retail outlet and the time it was purchased by the ultimate consumer? This chapter is an attempt to analyze various aspects of poultry retailing in order to answer that question and other questions on the retailing of poultry meat in Detroit.

Number of Retailers in the Detroit Market

The task of retailing poultry meat in Detroit required a complex network of retailers. These retail outlets were composed primarily of meat markets and grocery stores. Measured by the volume of business handled each day, these retail outlets varied greatly. They ranged in size from the small ones which handled only 100 dollars worth of business or less per day to the mammoth super markets which handled thousands of dollars of business daily.

According to the classified section of the Detroit telephone book for 1954, there were over 2,700 grocery stores and markets operating in the Detroit area that year. This only included grocery stores and markets operating under different names. It did not include all of the separate stores operated by a chain organization. For example, Wrigley's Stores Inc. was counted as one grocery store; yet, in reality, this chain organization operated about forty different stores under the Wrigley name. The same was true of Big Bear Markets of Michigan Inc., which operated about twenty-eight store, National Food Stores, which operated about twenty stores, Lucky Stores Inc., which operated about ten stores, Lipson Super Markets, which operated about eight stores, and other chain organizations such as Banner Super Markets, The Great Atlantic and Pacific Tea Company, Kroger's, and Food Fair Markets. Considering these stores which were operated under various chain organizations as separate retail outlets, the author believes the number of grocery stores operating in the Detroit area in 1954 would have been nearly 3,000. This excludes any possible grocery stores or markets which did not have a telephone number listed in the classified section of the 1954 Detroit telephone book.

In addition to the grocery stores and markets, there were about 210 retail poultry markets listed in the classified section of the 1954 Detroit telephone book. It might be proper to say that even some of the Detroit poultry wholesalers acted as retailers from time to time when they sold direct to ultimate consumers.

Form in which Poultry was Received

It was learned in Chapter V that approximately half of the 1953 Detroit poultry receipts in the wholesale market were in a dressed form. Most of the Detroit poultry wholesalers performed some processing operations. From observation it was estimated that about 30 percent of the Detroit live-poultry receipts were processed from a live to a dressed form by the wholesaler before they were delivered to the retail outlet. This meant that about 80 percent of the Detroit poultry receipts were delivered to the retail outlets in a dressed form. The remaining 20 percent were delivered in a live form. Insofar as the author was able to determine, all of the live poultry was retailed through the retail poultry markets. They handled some dressed poultry, also.

The grocery stores received the majority of their poultry in a ready-to-cook form. Some of the chain grocery stores and large

independent super markets received part of their fryers in a cut-up form, but generally the ready-to-cook poultry was received as whole birds.

Form in which Poultry was Retailed

In the retail poultry markets the live poultry was displayed in large wire crates to the view of the public. The customer had the opportunity to shop around before making a selection. The chosen birds were then pointed out to the attendant. He in turn removed the birds from the crate and processed them according to the dictates of the customer; i.e., dead-with-the-feathers-on, New York dressed, eviscerated, or cut-up. The processed birds were then returned to the customer. Very often the customer waited while the birds were processed. At other times the order was given in person or over the telephone to have the processed poultry delivered at a specified time.

These retail poultry markets also carried poultry in other forms besides live poultry. These items of poultry were preserved by either mechanical refrigeration or crushed ice. Here again the customer made the selection and informed the attendant, who performed any further processing the customer desired.

It was found that some of the grocery stores handled New York dressed poultry. In such cases they either sold it to their customers in that form or processed it further according to the desires of the customer. However, there were indications that most of the poultry was received in a ready-to-cook form as whole birds. This was especially true of stewing chickens and turkeys. In the case of stewing chickens and turkeys, the form was not usually changed by the retailer. However, in the case of fryers, the whole birds were often cut-up in the retail store before being placed on display. In some grocery stores the display of poultry was arranged in trays containing crushed ice. This type of display was used for fresh unpackaged poultry. It helped prevent deterioration of quality and shrinkage.

Most of the large supermarket-type grocery stores used a different method for their poultry display. In keeping with the other self-service features of the store, the large super markets displayed their poultry in self-service packages. This required that the poultry be prepackaged before it was placed in the display. The prepackaging was usually done within the store itself. The poultry was wrapped in a sheet of transparent film which was heat-sealed, labeled, weighed, priced, and then placed in the poultry display.

Stewing chickens and turkeys were usually prepackaged as whole birds, while fryers were prepackaged in the form of whole birds, cut-up birds, or occasionally as chicken parts; i.e., breasts, thighs, drumsticks, et cetera. These fresh, unfrozen prepackaged poultry items were displayed in open-top meat counters. Mechanical refrigeration in the counter maintained a temperature range between 28° and 35°F.

Some prepackaged frozen poultry was also handled by various grocery stores. The frozen poultry was usually received in a prepackaged form, rather than performing the operation in the retail store. Displaying prepackaged frozen poultry required the use of another open-top counter in which the temperature was maintained within a range of 0° and 15°F.

Frozen stewing chickens and turkeys were usually sold as whole birds, while fryers were sold in three different forms; i.e., whole, cut-up, or chicken parts.

The same methods of retailing poultry that were used in 1954 are being carried over into 1955 without many great changes. Since the majority of the fryers are cut-up and prepackaged in the retail store, the next section will be devoted to an estimation of the costs involved in this type of operation.

Estimated Cost of Cutting-Up and Packaging Fryers in a Retail Store

The costs which will be estimated in this section are for labor, wrapping material, and shrinkage. Labor cost covers the costs incurred in cutting-up and tray packing, wrapping, labeling, and weighing. These cost data can be observed in Table XIII. It should be noted that labor accounted for over 46 percent of the cost of cutting-up and packaging fresh, unfrozen fryers in a retail store. Wrapping material accounted for about 21 percent, and shrinkage accounted for the remaining 32 percent.

Using the cost data found in Table XIII and the number of pounds of fryers handled in the Detroit market during 1953, it will be possible to estimate the cost that would have been involved if all these fryers were cut-up and packaged in the retail store.

Referring to Table IX in Chapter V, it is found that 77 percent of the fryers were received in a ready-to-cook form, 8 percent in a New York dressed form, and 15 percent in a live form. It is necessary to convert the weight of the New York dressed and the live fryers to a ready-to-cook weight equivalent. This was done by multiplying the 4.9 million pounds of New York dressed fryers by 26 percent, and subtracting this amount from the original 4.9 million

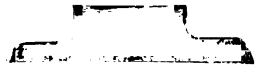

Table XIII. Costs of cutting-up and packaging fresh, unfrozen fryers[1] in a retail store.

Item of Expense	Cost per Pound
	dollars
Labor	0.026
Wrapping material	0.012
Shrinkage 3% at 60¢	0.018
Total cost of labor, wrapping material, and shrinkage	0.056

[1] Ready-to-cook weight basis.

Source: Table XV, Appendix A.

pounds.[18] The resulting amount was 3.6 million pounds of fryers, ready-to-cook weight equivalent. Likewise, by multiplying the 9.1 million pounds of live fryers by 11 percent and subtracting the product from the original 9.1 million pounds, a figure of 8.1 million pounds of fryers, New York dressed weight equivalent, was obtained. This 8.1 million pounds was in turn multiplied by 26 percent and the product subtracted from it. The resulting ready-to-cook weight equivalent was 6.0 million pounds of fryers. Then, to get the total number of pounds of ready-to-cook fryers, it was merely a matter of summing 47.6, 3.6, and 6.0 million pounds. Hence, the total number of pounds of ready-to-cook fryers handled in the Detroit poultry market in 1953 would have been approximately 57.2 million pounds.

The labor cost per pound for cutting-up and prepackaging fresh, unfrozen fryers multiplied by 57.2 million pounds would be 1.5 million dollars. The cost for wrapping material would be 0.7 million dollars, and 1.0 million dollars would be the cost for shrinkage. The total cost of cutting-up and packaging 57.2 million pounds

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[18] Gwin, op. cit. (see Chapter II), showed that there was a 26 percent dressing shrink for processing three-pound fryers from a New York dressed to a ready-to-cook form and an 11 percent dressing shrink for processing three-pound fryers from a live to a New York dressed form.

of fresh, unfrozen fryers in the retail store would be approximately 3.2 million dollars.

Summary

It was found that in 1954 there were approximately 3,000 grocery stores and markets in Detroit. In addition there were some 210 retail poultry markets.

The retail poultry markets handled mostly live poultry but did handle some dressed poultry also. Most of the grocery stores and markets received poultry in a ready-to-cook form, although some did receive poultry in a New York dressed form. Primarily fresh, unfrozen poultry was received, but some frozen poultry was also handled.

Turkeys and stewing chickens were retailed usually as whole birds, while fryers were retailed as whole or cut-up birds, or occasionally as chicken parts. The retailer generally cut-up the fryers in his own store. The prepackaging operation was usually performed in the retail store also.

Cost data from a study by the Poultry and Egg National Board were used in conjunction with the number of pounds of fryers handled in the Detroit market in 1953 to estimate the cost of prepackaging

fryers in the retail store. The costs used were 2.6 cents per pound for labor, 1.2 cents per pound for wrapping material, and 1.8 cents per pound for shrinkage. Using these cost figures and 57.2 million pounds of fryers, the various costs were: 1.5 million dollars for labor, 1 million dollars for shrinkage, and 0.7 million dollars for wrapping material. The total cost was estimated to be 3.2 million dollars.

CHAPTER VII

SAVING WHICH COULD BE EFFECTED IF PREPACKAGING OF POULTRY IN DETROIT WERE CENTRALIZED

It was found in the previous chapter that it cost about 3.2 million dollars for labor, wrapping material, and shrinkage to cut-up and prepackage fresh unfrozen fryers in the retail stores in Detroit in 1953. This chapter will be devoted to an estimation of what the cost would likely have been if the same number of pounds of fresh fryers had been prepackaged centrally.

It appears to the author that the more logical place to prepackage poultry would be in a poultry processing plant, or a centralized location. The plants, especially the larger ones, were already equipped with the necessary equipment and staffed with the necessary personnel to perform any number of processing operations such as killing, dressing, eviscerating, freezing, cutting-up, packing, and even in some cases packaging.

Therefore, it seems probable that significant savings could be forthcoming if poultry were prepackaged centrally.

The prepackaging operation could be installed in the assembly line without difficulty. Using one of the poultry plants in Detroit

that the author visited as an example, it will be possible to demonstrate the ease with which this could be done. This plant was equipped with a motor-driven chain conveyor. The live poultry was hung by the legs from the conveyor which carried it through the following processes: killing and bleeding, scalding, picking, pinning, singeing, cropping, venting, washing, inspecting, sorting, cooling, and eviscerating.

After the poultry was eviscerated, it was removed from the conveyor system. The head and feet were then cut off before the poultry was wrapped, packed, and sent to a storage room to await delivery to a retail outlet.

Packaging of poultry could very easily be worked into the assembly line of that plant. Instead of being wrapped in paper after it was taken off the chain conveyor, it would be wrapped in a transparent film, heat-sealed, labeled, weighed, and then packed and stored to await delivery to a retail store.

If prepackaging of poultry could be worked into the processing assembly line at a poultry processing plant, what would be the estimated cost involved as compared with prepackaging the poultry in a retail store?

It can reasonably be assumed that some costs would be the same or very nearly so whether the prepackaging were done at a processing plant or at a retail store.

The location of packaging would have very little effect on the value of the ready-to-cook poultry. Refrigeration and storage space would have to be provided whether the poultry were stored in a packaged or unpackaged form to await delivery. There is no reason to believe that the packing materials would have to be any different for packaged or unpackaged poultry. Therefore, the cost of packing materials would be the same. The same transportation required to deliver unpackaged poultry could be used to deliver the packaged poultry from the poultry processing plant to the retail store. The amount of transportation should not change, either. Hence, the cost of transportation should be the same for delivering packaged or unpackaged poultry. Shrinkage in a retail store prepackaging operation was estimated to be about 3 percent. There is no reason to believe that shrinkage of poultry packaged at a processing plant would differ much from the same 3 percent. This has reference to shrinkage from loss of moisture.

There is reason to believe that the cost of wrapping material would be less at a poultry processing plant than at a retail store. By

packaging large volumes of poultry a poultry processing plant could afford to buy wrapping material in large volumes and thereby take advantage of any discounts offered for large-volume purchases. In addition, the money now spent for wrapping paper could be used for purchasing transparent films instead. This could effect a significant savings in the over-all process of prepackaging poultry at a plant in contrast to prepackaging in a retail store. For purposes of calculation, a conservative estimate would be a savings of about half the cost of the wrapping material used in a retail store prepackaging operation, or 0.6 of a cent per pound.

The major savings would result from the more efficient use of labor. The greater volume of poultry that would be packaged in a central plant as compared with the retail store would allow for a more efficient use of labor in the prepackaging steps. The person cutting-up fryers in preparation for packaging at a central plant would normally become much more proficient than the person who did it only occasionally. The same argument could be made for other steps in the prepackaging operation such as traying, wrapping, heat-sealing, labeling, and weighing. In addition, the labor presently used to wrap poultry in paper and weigh unpackaged poultry could be used to wrap poultry in a transparent film and then weigh the

poultry. This would effect an additional savings through the use of a centralized packaging operation instead of a retail store packaging operation.

Professor Robert C. Kramer of the Department of Agricultural Economics at Michigan State College conducted a time study on the cutting-up and traying of three-pound ready-to-cook fryers. The data from this time study will be used as a basis for estimating the cost of cutting-up and packaging fresh fryers centrally.

According to the time study, it took 57 hundredths of a minute, or 34 seconds, to cut-up and tray a three-pound, fresh fryer. Ten seconds were added to this as an estimated average time for wrapping in a transparent film, heat-sealing, labeling, and weighing. This gave a total of 44 seconds for cutting-up and prepackaging a three-pound fresh fryer. To this total time was added a 15 percent fatigue factor. Hence, the total time involved in the cutting-up and packaging of a three-pound, fresh fryer, including the fatigue factor, was 51 seconds. This was an efficient packaging operation, much more efficient than the typical retail store packaging operation.

So that the calculations in this chapter would be comparable with the calculations of Chapter VI, the 51 seconds were broken down to a per-pound basis. Since each of the fryers weighed three

pounds, the time involved for cutting-up and packaging each fryer was 17 second per pound.

The time involved in the cutting-up and packaging of each pound of fresh fryer at a retail establishment was 50 seconds.[19] According to the calculations in Chapter VI, it cost 2.6 cents for those 50 seconds of labor used in the cutting-up and packaging of each pound of fresh fryer at a retail store. Seventeen seconds is 34 percent of 50 seconds. Therefore, multiplying 2.6 cents by 34 percent, it was possible to determine the cost of 17 seconds of labor used in the cutting-up and packaging of a pound of fresh fryers at a centralized location. This cost would be 0.9 of a cent per pound.

Using the cost figures estimated in this chapter, it was possible to calculate the costs of cutting-up and prepackaging fresh, unfrozen fryers centrally and compare them with the costs of cutting-up and prepackaging fryers in a retail store, as was calculated in Chapter VI.

The labor cost for cutting-up and prepackaging 57.2 million pounds of fryers at a centralized plant would be 0.5 million dollars, as compared with 1.5 million dollars at a retail store. The cost of

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[19] This information was obtained from Table XV, in Appendix A.

wrapping material at a plant would be about 0.4 million dollars, as compared with 0.7 million dollars at a retail store. The cost of shrinkage from loss of moisture was estimated to be the same in either a centralized or a retail store prepackaging operation. Shrinkage was calculated to be 1 million dollars. Therefore, the total cost for cutting-up and prepackaging fresh, unfrozen fryers at a centralized plant would be approximately 1.9 million dollars. A similar cost for cutting-up and prepackaging fresh fryers in a retail store would be about 3.2 million dollars. This would indicate a savings of 1.3 million dollars could have been effected by cutting-up and prepackaging fresh fryers centrally. These comparisons can be visualized more clearly by referring to Table XIV.

The 1.3 million dollars would be the maximum savings possible from the most efficient use of labor in a centralized cutting-up and packaging operation for fresh fryers in Detroit.

The author does not want to leave the impression that savings in cutting-up and prepackaging poultry could only be made through the installation of a centralized cutting-up and packaging operation. Savings could be realized by Detroit retail stores through the use of more-efficient methods in their store cutting-up and packaging operation.

Table XIV. Individual costs and total cost of cutting-up and prepackaging fresh, unfrozen fryers[1] in the processing plant as compared with the retail-store operation, and the savings effected by centralized prepackaging.

Item of Cost	Total Cost of Cutting-Up and Prepackaging Fryers at the	
	Processing Plant	Retail Store
	millions of dol.	millions of dol.
Labor	0.5	1.5
Wrapping material	0.4	0.7
Shrinkage 3% at 60¢	1.0	1.0
Total cost of labor, wrapping material, and shrinkage	1.9	3.2
Savings effected by centralized packaging	1.3	

[1] Ready-to-cook weight basis.

Sources: Table XV, Appendix A; Kramer's time study.

It would be unrealistic to assume that all of the poultry handled in Detroit would be prepackaged. It would also be unrealistic to assume that all of the prepackaged poultry would be prepackaged centrally.

Discounting these factors that would effect the savings accruing to a centralized cutting-up and prepackaging operation for fryers, it was still estimated that between 750 thousand and 1 million dollars in savings could have been effected in Detroit through the use of a centralized cutting-up and prepackaging operation for fresh fryers.

In summary, it was proposed that the prepackaging of poultry be done in a central location rather than a retail store. The prepackaging operation would fit into the processing assembly line at a processing plant very well.

It was considered that some costs would be the same for either a centralized prepackaging operation or a retail store prepackaging operation. These costs were: for the poultry itself, refrigeration, storage space, packing materials, transportation, and shrinkage.

It was estimated that the cost of wrapping material would be cut in half by cutting-up and packaging poultry at a processing plant. This would mean a cost of about 0.6 of a cent for wrapping material for each pound of fryer prepackaged centrally.

The cost of labor for cutting-up and packaging fresh, unfrozen fryers at a poultry processing plant or centralized plant was estimated to be about 0.9 of a cent per pound of fryers handled.

The total cost of cutting-up and packaging centrally 57.2 million pounds of fresh fryers was estimated to be approximately 1.9 million dollars, as compared with 3.2 million dollars for the cutting-up and packaging operation in a retail store. Thus, using the most efficient methods, a centralized cutting-up and packaging operation for fryers in Detroit would have effected a savings of some 1.3 million dollars.

Discounting the factors effecting the savings accruing to a centralized cutting-up and prepackaging operation for fryers, it was still estimated that a savings of between 750 thousand and 1 million dollars could have been realized through the use of a centralized cutting-up and prepackaging operation for fresh fryers in Detroit.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

Approximately 3 billion dollars were spent for poultry meat during each of the years 1950 through 1954 on the national level. This was about 5 percent of the total number of dollars spent for food for the same years. These large expenditures for poultry meat were achieved because of the increase in per capita consumption. From 1950 to 1954 per capita consumption of chicken increased from twenty to twenty-four pounds, while the per capita consumption of turkey remained constant at about four pounds.

In Michigan a little over 19 dollars per person was spent for poultry meat in 1954. In total this amounted to about 136 million dollars, an increase of about 25 million dollars over the 1950 expenditures. Michigan consumed 4 percent of the total poultry meat consumed in the United States. Michigan ranked seventh in the nation as a consumer of poultry meat.

Detroit, the largest metropolitan area in Michigan, spent nearly 64 million dollars for poultry meat in 1954. This was an increase of about 14 million dollars over the 1950 poultry meat

expenditures. Consumptionwise, Detroit consumed over 46 percent of the total poultry meat consumed in the state of Michigan in 1954. Comparison with other metropolitan areas of Michigan showed Detroit to be the leading consumer of poultry meat. This leading position was assured by a wide margin.

Since Detroit consumed such a large volume of poultry meat, it required that poultry be shipped into the city from outstate Michigan and from other states. Georgia alone supplied Detroit with about 40 percent of its dressed poultry receipts in 1953. Indiana, Michigan, and Ohio supplied about 98 percent of the live poultry receipts. These four states supplied about 70 percent of Detroit's total poultry receipts in 1953.

The live poultry was processed by various poultry processors in Detroit. The cost for processing from a live to a New York dressed form was estimated by the processors to be approximately 6 cents a pound. Processing from a New York dressed to a ready-to-cook form was estimated by the processors to cost about 8 cents a pound.

The most prominent sales outlets for the processed poultry were meat markets, other poultry houses, and chain grocery stores. The wholesalers delivered the poultry to the retail outlets by truck.

Delivery to some retail outlets was made each day, while it was made only once a week to others. Delivery to chain grocery stores, many of the meat markets, and independent grocery stores was on a daily basis. Three of the Detroit poultry wholesalers even delivered prepackaged fresh, unfrozen fryers to meat markets and chain and independent grocery stores.

Most of the poultry was delivered in a whole ready-to-cook form. Retailers usually retailed turkey and stewing chickens in a whole form, but fryers were generally cut-up. Most of the prepackaging was conducted in the retail store, also.

The costs of cutting-up and prepackaging fresh, unfrozen fryers in the retail store on a per-pound basis were: 2.6 cents a pound for labor, 1.2 cents per pound for wrapping material, and 1.8 cents per pound for shrinkage. Multiplying these cost data by 57.2 million pounds of fresh fryers, the total cost of cutting-up and prepackaging fresh fryers at the retail store was found to be 3.2 million dollars.

Calculation of similar cost data for cutting-up and prepackaging fryers at the plant yielded the following: 0.9 of a cent for labor per pound of fryers handled, 0.6 of a cent for wrapping material and 1.8 cents for shrinkage. Multiplying these cost data by 57.2 million pounds of fresh fryers, the total cost of cutting-up and

prepackaging fresh, unfrozen fryers was estimated to be 1.9 million dollars. Thus, a savings of some 1.3 million dollars could have been effected by the use of the most efficient methods in a centralized cutting-up and prepackaging operation.

Other costs were estimated to be the same whether the poultry was prepackaged centrally or at the retail store. These costs were for the poultry itself, refrigeration, storage space, packing material, transportation, and shrinkage.

Labor could be used more efficiently in the retail store cutting-up and prepackaging operation for poultry than it has been. However, it is felt that insufficient poultry volume, the necessity of prepackaging red meats, and interruptions for other duties prevent the maximum use of labor in a retail store cutting-up and prepackaging operation for poultry.

Retail stores could save money by patronizing a centralized prepackaging plant for poultry. Purchasing prepackaged poultry would cost the retailers more than buying unpackaged poultry, but this cost would be significantly less than the cost of prepackaging the same poultry in their own stores.

It is also felt that some of the smaller retail stores could afford to display self-service poultry if they could purchase it already prepackaged.

APPENDIX A

TABLE ON COSTS OF CUTTING-UP AND PACKAGING FRESH FRYERS AT THE RETAIL LEVEL

Table XV. Costs of cutting-up and packaging fresh fryers at the retail level.[1]

Item	Group I (18 head; total wt., 46 lbs.; average wt., 2 lbs., 9 oz.)		Group II (18 head; total wt., 34 lbs.; average wt., 1 lb., 14 oz.)		Total (36 head; total wt., 80 lbs.; average wt., 2 lbs., 4 oz.)	
	Time	Cost	Time	Cost	Time	Cost
	minutes	dollars	minutes	dollars	minutes	dollars
Cutting and traying	17-1/2	0.62	16-1/2	0.58	34	1.20
Wrapping	11	0.31	9	0.26	20	0.57
Labeling	2-3/4	0.08	3	0.09	5-3/4	0.17
Weighing	2-5/6	0.08	3-1/6	0.09	6	0.17
Total labor . . .		1.09		1.02		2.11
Wrapping material . . .		0.47		0.46		0.93
Total cost		1.56		1.48		3.04
Cost per pound .		0.0339		0.0435		

Summary:

Price basis	60¢ per pound
Number of head	36
Total drawn weight	80 pounds
Average weight	2 lbs., 4 oz.

Table XV (Continued)

Cost of packaging (labor and material):

Cutting and tray pack	34 min.	$1.20
Wrapping	20 min.	.57
Labeling	5-3/4	.17
Weighing	6 min.	.17
Wrapping material		.93
Average cost per pack per pound		.038
Shrinkage 3% at 60¢ (2.4 oz.)		.018
Total cost shrinkage, labor, material (lb.)		$0.056

April, 1951 - Actual Test

[1] Cutting up and traying were performed by meat cutters at wages of $85 per week. All other jobs were performed by wrappers at $68 per week. "Fryers were cut with knife into seven separate pieces, breast bone disjointed but not completely separated, legs disjointed but not completely separated from thighs; equivalent to nine pieces. Food-tainer tray and pliofilm were the packaging material used."

Source: Poultry Products Merchandising, Poultry and Egg National Board, January, 1954.

APPENDIX B

SCHEDULE USED FOR COLLECTION OF POULTRY MARKETING DATA FROM DETROIT POULTRY WHOLESALERS

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SURVEY OF POULTRY MARKETING

1. From which states did you receive the majority of your poultry in 1953?
List top five in sequence: (1)_____(2)_____(3)_____(4)_____(5)_____.
2. How many pounds of all poultry did you handle in 1953?_____(specify live, dressed, etc.)
3. In the following table list the poundage of broilers or fryers, stewing chickens, and turkeys and the proportion of each received in the following forms during 1953: (A thru E = 100%).

Form in which received	Broilers or Fryers	Stewing Chickens	Turkeys
A. Ready-to-cook (unfrozen)			
(1) whole			
(2) split			
(3) cut-up			
(4) parts			
B. N. Y. dressed			
C. Quick-frozen (R to C)			
(1) whole packaged			
(2) cut-up packaged			
(3) parts packaged			
D. Live			
E. Other			
Total poundage (Specify live, dressed, ready-to-cook, etc.)			

4. What proportion of the broilers or fryers, stewing chickens and turkeys you handled during 1953 was sold to or through the following types of sales outlets:

Type of Sales Outlet	Broilers or or Fryers	Stewing Chickens	Turkeys
A. Meat markets			
B. Direct to consumers			
C. Chain grocery stores			
D. Independent grocery stores			
E. Hotels and restaurants			
F. Dime stores (Kresge, etc.)			
G. Institutions (hospitals schools, etc.			
H. Specify others			

5. Do you deliver poultry to sales outlets? Yes_____No_____ If yes answer 6 thru 9*
*6. What is the average length of time poultry spends on the delivery truck between your plant and the sales outlet?_____(minutes).
*7. What method of refrigeration is used in your delivery truck? (1) ice_____
(2) mechanical_____(3) none_____.

*8. Does the method of refrigeration in your delivery trucks vary by seasons? Yes____ No.____. If so, how?

*9 Which of the following most nearly describes your delivery schedule to various sales outlets: (check all that apply)

Sales Outlets	Once a week	Twice a week	Three times a week	Once a day	Specify others
A. Meat markets					
B. Direct to consumers					
C. Chain grocery stores					
D. Independent grocery stores					
E. Hotels and restaurants					
F. Dime stores					
G. Institutions					

10. Which of the following processing operations are usually done in your plant? Indicate for broilers or fryers, stewing chickens, and turkeys. (Check all that apply)

Processing operation	Broilers or Fryers	Stewing Chickens	Turkeys
A. Killing and dressing			
B. Drawing or eviscerating			
C. Cutting-up			
D. Freezing			
E. Packaging frozen, in consumer size packages			
F. Packing			
G. Other			
H. None			

11. Do you prepackage in your plant in consumer size packages any fresh unfrozen poultry for delivery to your sales outlets? Yes____No____.
(If yes answer 12 thru 16; if no answer 17 and 18)

*12. What kinds of fresh unfrozen poultry do you prepackage? (list all that apply)

*13 Which of your sales outlets handle your fresh unfrozen prepackaged poultry (list all that apply)

*14 About what proportion of your total poultry poundage for 1953 was marketed fresh, unfrozen, and prepackaged?_____.

*15 Do you plan oh turning more toward prepackaging in consumer sized packages in your plant during 1954? Yes____No_____.

*16 What are some of the major problems you have encountered by prepackaging poultry in your plant?

§17. What are some of the reasons that have led you <u>not</u> to prepackage fresh unfrozen poultry in your plant? (check all that apply)

A. Shrinkage	_____	F. Spoilage	_____
B. Unattractive package	_____	G. Cost of wrapping materials	_____
C. Broken packages	_____	H. Delivery to stores	_____
D. Returns	_____	I. Production control	_____
E. Ordering	_____	J. Quality control	_____
		K. Others	_____

§18. What are your wholesale margins for the following:

A. Broilers or fryers_____ C. Turkeys_____
B. Stewing chickens _____

19. What basis do you use for determining your wholesale margins? (check all that apply).

A. Cents per pound	_____	F. Ready-to-cook price	_____
B. A set percentage	_____	G. Competition	_____
C. A flexible percentage	_____	H. Hunch or guess	_____
D. Live price	_____	I. Experience	_____
E. Dressed price	_____	J. Other	_____

20. Would you please give the approximate cost per pound in cents (specify live, dressed, ready-to-cook) for all of the operations you did at your plant for 1953 for broilers or fryers, stewing chickens, and turkeys? (Fill in all that apply) L - live, D - N. Y. dressed, R-to-C - ready-to-cook.

Operation	Cost per pound ( ) in cents for: Broilers or Fryers	Stewing Chickens	Turkeys
A. Processing live to N.Y. dressed	_____	_____	_____
B. Processing N.Y. dressed to ready-to-cook	_____	_____	_____
C. Processing live to ready-to-cook	_____	_____	_____
D. Packaging frozen in consumer sized			
E. Packaging unfrozen " " packages	_____	_____	_____
F. Cutting-up	_____	_____	_____
G. Freezing	_____	_____	_____
H. Delivering to sales outlet	_____	_____	_____
I. All operations combined from time the birds arrive at your plant until they are delivered to the sales outlet.	_____	_____	_____

21. Do you attempt to use a brand name on the poultry you handle?
Yes_____No_____ If yes, what is it?_____,
and is this your brand name? Yes_____No_____.

22. What is the usual length of time one can keep unfrozen poultry under proper refrigeration and still maintain an acceptable quality?_____(days).
23. What is the usual length of time one can keep frozen poultry under proper refrigeration and still maintain an acceptable quality?_____(days).
24. How does the flavor compare between unfrozen poultry and poultry that has been frozen for 30 days? _____.
25. Which of the following poultry do your customers prefer <u>unfrozen</u>:

A. Broilers or fryers_____ C. Turkeys_____
B. Stewing chickens _____ D. Ducks _____

26. Which of the following poultry do your customers prefer <u>frozen</u>:

A. Broilers or fryers_____ C. Turkeys_____
B. Stewing chickens _____ D. Ducks _____

Thank you kindly for your generous cooperation in this survey.