PRICING BROILERS AT THE FARM LEVEL IN OHIO

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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TABLE OF CONTENTS

INTRODUCTION ................................................................. 1

PART I. OBJECTIVES, REVIEW OF THE LITERATURE
AND METHODOLOGY

I. OBJECTIVES .............................................................. 10

II. REVIEW OF THE LITERATURE ................................... 15

III. METHODOLOGY ....................................................... 46

PART II. MARKETING OF LIVE BROILERS
BY BROILER GROWERS IN OHIO

IV. NUMBER, CLASSIFICATION AND DISTRIBUTION
OF RESPONDENTS .......................................................... 52

V. RELATIONSHIP OF SELLING METHODS TO THE
PRICE RECEIVED ............................................................. 66

VI. USE OF MARKET INFORMATION BY OHIO
BROILER GROWERS .......................................................... 80

VII. USE OF PRODUCTION CONTRACTS BY OHIO
BROILER GROWERS ........................................................... 96

PART III. PRICING LIVE BROILERS BY
OHIO PROCESSORS

VIII. CLASSIFICATION AND GEOGRAPHIC DISTRIBUTION
OF PROCESSORS ............................................................. 114
# TABLE OF CONTENTS (Continued)

IX. BUYING PRACTICES OF OHIO PROCESSORS .... 119

PART IV. MARKET INFORMATION

X. COMPARISON OF OHIO AND GEORGIA LIVE BROILER MARKET QUOTATIONS .... 133

XI. RELATIONSHIP OF OHIO AND GEORGIA MARKET QUOTATIONS TO THE PRICES RECEIVED BY OHIO BROILER GROWERS .... 152

XII. THE RELATIONSHIP OF THE OHIO BROILER MARKET QUOTATIONS TO THE WHOLESALE READY-TO-COOK PRICES OF BROILERS TO RETAILERS .... 162

PART V. SUMMARY AND CONCLUSIONS

XIII. SUMMARY AND CONCLUSIONS .... 176

APPENDIX .... 186

BIBLIOGRAPHY .... 193

AUTOBIOGRAPHY .... 196
LIST OF TABLES

Table                                      Page

1. Percentage of Returns from Questionnaire Mailed
   to 530 Broiler Growers in Ohio. ...........................54

2. Distribution of Broiler Growers by Total Annual
   Production of Broilers. ........................................55

3. Distribution of Producers by Total Yearly Capacity. ....57

4. Number of Sales and Average Farm Prices Reported
   by Producers for Broilers Sold in Ohio, by Area. .....66

5. Computed "F" Values for All Possible Combinations
   of the Four Areas in the State of Ohio. ..................68

6. Relationship of Size of Processor to Prices Received
   by Producers. ....................................................70

7. Average Farm Prices Received by Ohio Broiler
   Growers for Live Broilers Sold on Different
   Market Quotations. ............................................73

8. Comparison of Prices Received by Independent and
   Integrated Broiler Producers. ...............................75

9. Selling Practices of Ohio Broiler Growers. ............77

10. Sources of Information Used by 97 Independent Broiler
    Growers. ......................................................81

11. Use of Market Information by Different Classes of
    97 Independent Broiler Growers in Ohio. ................82

12. Sources of Information Used by 57 Integrated Broiler
    Growers. ......................................................83

13. Use of Market Information by Different Classes of
    Integrated Broiler Growers in Ohio. ......................86
LIST OF TABLES (Continued)

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>Adequacy of Market Information Used by 97 Independent and 57 Integrated Broiler Growers in Ohio</td>
<td>87</td>
</tr>
<tr>
<td>15.</td>
<td>Market Reports Used as a Reference for Price Determination by 97 Independent and 56 Integrated Broiler Growers in Ohio</td>
<td>94</td>
</tr>
<tr>
<td>16.</td>
<td>Percentage Distribution, by Date of Acceptance, of Current Production Contracts by Integrated Broiler Growers in Ohio</td>
<td>97</td>
</tr>
<tr>
<td>17.</td>
<td>Production, Management and Marketing Decisions Assumed by Integrated Broiler Growers in Ohio.</td>
<td>103</td>
</tr>
<tr>
<td>18.</td>
<td>Profit Sharing Plans Reported by Integrated Broiler Growers in Ohio.</td>
<td>106</td>
</tr>
<tr>
<td>20.</td>
<td>Sources of Broilers Processed in Ohio in 1958.</td>
<td>118</td>
</tr>
<tr>
<td>21.</td>
<td>Origin of Receipts of Live Broilers Received at Cincinnati and Cleveland, Ohio, 1957.</td>
<td>151</td>
</tr>
</tbody>
</table>
## LIST OF CHARTS

<table>
<thead>
<tr>
<th>Chart</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. The Mid-Month Farm Prices for Broilers in the United States and Ohio, 1952-1959.</td>
<td>72</td>
</tr>
<tr>
<td>II. Range of the Southern Ohio Farm Price Quotation for Live Broilers.</td>
<td>139</td>
</tr>
<tr>
<td>III. Range of the Central Ohio Farm Price Quotation for Live Broilers.</td>
<td>139</td>
</tr>
<tr>
<td>IV. Range of the Northern Ohio Farm Price Quotation for Live Broilers.</td>
<td>139</td>
</tr>
<tr>
<td>V. The Georgia &quot;Mostly&quot; Live Broiler Market Quotation and the Range of the Farm Price Quotation for the Southern Ohio Market Area.</td>
<td>142</td>
</tr>
<tr>
<td>VI. The Georgia &quot;Mostly&quot; Live Broiler Market Quotation and the Range of the Farm Price Quotation for the Central Ohio Market Area.</td>
<td>146</td>
</tr>
<tr>
<td>VII. The Georgia &quot;Mostly&quot; Live Broiler Market Quotation and the Range of the Farm Price Quotation for the Northern Ohio Market Area.</td>
<td>147</td>
</tr>
<tr>
<td>VIII. The Southern Ohio Farm Price Quotation for Live Broilers and the Prices Reported by Broiler Growers in Ohio for Broilers Sold on that Market Quotation.</td>
<td>153</td>
</tr>
<tr>
<td>IX. The Central Ohio Farm Price Quotation for Live Broilers and the Prices Reported by Broiler Growers in Ohio for Broilers Sold on that Market Quotation.</td>
<td>155</td>
</tr>
<tr>
<td>Chart</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>X.</td>
<td>The Northern Ohio Farm Price Quotation for Live Broilers and the Prices Reported by Broiler Growers in Ohio for Broilers Sold on that Market Quotation.</td>
</tr>
<tr>
<td>XI.</td>
<td>The Georgia Farm Price Quotation for Live Broilers and the Prices Reported by Broiler Growers in Ohio for Broilers Sold on that Market Quotation.</td>
</tr>
<tr>
<td>XII.</td>
<td>The Georgia &quot;Mostly&quot; Farm Price Quotation for Live Broilers and the Prices Reported by Ohio Broiler Growers for Broilers Sold on that Market Quotation.</td>
</tr>
<tr>
<td>XIII.</td>
<td>The Prices Reported by Ohio Broiler Growers and the Range of the Georgia &quot;Mostly&quot; Quotation Plus Three Cents.</td>
</tr>
<tr>
<td>XIV.</td>
<td>The Cincinnati, Ohio, Wholesale Prices to Retailers for Dressed Ready-To-Cook Broilers, and the Southern Ohio Farm Price Quotation for Live Broilers.</td>
</tr>
<tr>
<td>XV.</td>
<td>The Columbus, Ohio, Wholesale Prices to Retailers for Dressed Ready-To-Cook Broilers, and the Central Ohio Farm Price Quotation for Live Broilers.</td>
</tr>
<tr>
<td>XVI.</td>
<td>The Cleveland, Ohio Wholesale Prices to Retailers for Dressed Ready-To-Cook Broilers, and the Northern Ohio Farm Price Quotation for Live Broilers.</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Distribution of the Respondents in Ohio</strong> Replying to the Mailed Questionnaire</td>
<td>58</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Distribution of the Broiler Growers in Ohio, 1954.</strong></td>
<td>60</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Number and Distribution of Usable Returns from Broiler Growers in Ohio</strong></td>
<td>62</td>
</tr>
<tr>
<td>4.</td>
<td><strong>Distribution, Number of Respondents and their Total Production of Broilers, by Area</strong></td>
<td>64</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Geographic Distribution of Processors</strong></td>
<td>116</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Receipts of Processed Poultry at Cleveland from Major Broiler Producing States, by Origin, 1957.</strong></td>
<td>171</td>
</tr>
<tr>
<td>7.</td>
<td><strong>Receipts of Processed Poultry at Cincinnati from Major Broiler Producing States, by Origin, 1957.</strong></td>
<td>173</td>
</tr>
</tbody>
</table>
INTRODUCTION

The principal purpose of this study is to ascertain the influence of broiler market quotations and the methods used in marketing broilers on the prices received by Ohio broiler growers. The functions of marketing which are of primary concern in this study of the marketing of broilers are buying and selling (the functions of exchange) and the facilitating function of market information. Although the other functions of marketing (finance, risk-bearing, transportation, standardization and grading, and storage) are integral functions in the marketing process, they are brought into the study only in limited degree. Marketing is defined as a term which "covers all business activities necessary to effect transfers in the ownership of goods and to provide for their physical distribution." It embraces the entire group of services and functions performed in the distribution of merchandise from producer to consumer, excluding only operations relating to changes in the form of goods normally regarded as processing or manufacturing operations."

2 Ibid., p. 4.
The scope of this work has been confined to factors related to the marketing of broilers at the farm level in Ohio. To the extent of this limitation in scope, the term "marketing" is used in accordance with the preceding definition.

The broiler industry in Ohio and in the United States has undergone phenomenal expansion in the last decade. In 1947, Ohio produced 3,257,000 commercial broilers; in 1957, 17,600,000 broilers were produced, an increase of over 540 per cent. During this same period the total United States production of commercial broilers increased over 512 per cent (283,091,000 in 1947 to 1,451,661,000 in 1957).

The marketing system has been forced to initiate changes in its structure in an attempt to market these broilers efficiently. Perhaps one of the most significant changes has been the trend toward more direct marketing of broilers. Thus the majority of the broilers produced today pass directly from the farm to the processing plant and from there directly to the retail trade.

Another significant change that directly affects the marketing of broilers is the increased use of production contracts and other credit instruments in the financing and production of the product. Under this system, many of the production and marketing decisions have been assumed by the contractor,

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rather than the producer. In return for the use of his buildings, equipment and labor, and for relinquishing some or all of his entrepreneurial functions, the grower is guaranteed a certain income per bird or per pound of broiler sold.

It has been estimated by agricultural economists that approximately 95 per cent of the broilers produced in the United States are grown under some type of contractual arrangements. Under many types of contracts the income received by the grower bears little if any relation to the live broiler prices. However, the contracts usually stipulate the market report or the differential from a certain market report to be used in calculating the book value of the broilers, and in determining the profit or loss on the production operation. For example, many contracts stipulate that the price to be used in calculating the profit or loss will be "one cent over the top Georgia 'mostly' broiler market quotation on the day of sale." Thus, the price at which the broilers are to be sold cannot be determined until the Georgia broiler market quotation has been established. Therefore those broilers which were sold "on the market" must be reported as being sold at undetermined prices. (Prices were to be determined by an accepted quotation to be established on the following or other specified day.) The widespread use of this type of quotation pricing raises a serious question as to the
adequacy of the terminal market quotations in reflecting true market conditions. Only those sales that have been completed at definite prices should be used to establish the daily live broiler market quotation. In 1952 it was reported that only five per cent of the broilers sold in the North Georgia area were sold at a negotiated price. Therefore, if the market reporter bases his price quotation on those sales completed at definite prices, the price that will be paid for all broilers will be determined by less than five per cent of the total number of broilers sold. In addition, these negotiated sales generally represent atypical purchases on the part of the processor. In most cases the processor is either buying a special type or size of broiler or else he is forced to negotiate for additional supplies of live broilers to fulfill his commitments to his clients. If the above assumptions are true, then the price quotation formulated by the market reporter will not be indicative of the true market conditions.

Recently there have been complaints that the market reports are being manipulated by quoting to the Market News reporter prices that are either higher or lower than those

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actually paid to the producer, and that some producers are quoting higher prices than they actually received. If a processor is able to manipulate the market report by quoting a price to the market reporter that is higher than that actually paid, he may be able to realize a higher wholesale dressed price from his customers. If on the other hand he reports a price that is lower than that paid to the producer, he could either force the live broiler prices in a downward direction and thus buy broilers more cheaply, or he might be able to prevent the market from rising. This action would be advantageous to him if he had previously been committed to sell dressed ready-to-cook broilers to a client at a definite price based on a market quotation that was equal to or lower than the current quotation for live broilers. In this manner the processor could obtain a sufficient supply of live broilers to fulfill his contract at a price that would enable him to retain his margin of profit. A producer who sold large volumes of broilers at regular intervals would find it advantageous to try to increase his farm price by quoting a price to the market reporter that was higher than the price he actually received for his broilers.

The marketing of broilers is further confused by the lack of understanding of the method of price determination used
by buyers in purchasing live broilers. Since the consumer makes the ultimate buying decision, the price that she is willing to pay for broilers may be the deciding factor in determining the price that the processor can pay producers for live broilers. Assuming that in the short-run the processing costs and marketing margins involved remain relatively constant, the relationship between the live broiler prices received by the producer and the ready-to-cook prices paid by the consumer should remain relatively constant.

Research has indicated that neither age, size nor quality have any appreciable correlation with the prices received for broilers by producers. However, there are some indications that mortality or morbidity does influence prices paid to producers. Since there is a range of prices reported, the marketing methods utilized by producers may account for the range in price quotations reported by the market reporting services.

Another factor that may account for the range in reported prices paid to producers is the fact that both large and very small processors as well as some large producing concerns and haulers of live poultry are contacted regularly by the market news reporter. The small processor, because of his limited

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5 Harold D. Smith, Broiler Costs and Returns, Maryland Agriculture Experiment Station Misc. Pub. Number 167, 1953.
facilities, must buy his supplies of live broilers in small quantities of a few hundred to a thousand or two thousand. Most producers are reluctant to remove small lots of broilers from their flock unless they are offered a premium of one or more cents above the current "mostly" quotation - the price at which the majority of the broilers are sold. Likewise, the "live haulers" (truckers who buy live broilers and then resell them to processors) demand a premium from small processors for either dividing a load or for obtaining small lots of broilers for them. Some small processors also buy their supplies from other processors who act as brokers as well as processors. The small processors pay a commission ranging from one-half cent to one and one-half or two cents per pound of broiler, based on the farm weight (the weight of live broilers weighed at the farm).

The price differential between Ohio quotations for live broilers and those from commercial broiler growing areas has diminished in recent years. Large supplies of ready-to-cook broilers are coming into Ohio from these areas. 6

Since a large majority of the broilers are grown under production contracts, it would be desirable to know what effect, if any, this trend has had on price information in the Ohio broiler industry.
PART I

OBJECTIVES, REVIEW OF THE LITERATURE AND METHODOLOGY
OBJECTIVES

One of the main objectives of this study is to determine the relationship of the selling practices utilized by broiler producers to the net price per pound received by them for broilers. During recent years the farm price of broilers has been depressed to a level equal to or below the cost of production in spite of the technological advances that have been made in the fields of genetics and nutrition that allow a broiler grower efficiently to convert feed into poultry meat. These low prices are partially a result of the phenomenal increase in the production of broilers that has occurred recently. The daily market report published by the United States Department of Agriculture (hereinafter referred to as U.S.D.A.) Market News Service quotes the prices paid to producers for live broilers. The Market News Service publishes a range of prices reported to have been paid for top quality broilers, weighing between two and one-half and three and one-half pounds live weight, purchased both at the farm weight and for broilers sold on the basis of the live weight at the processing plant. The latter price is generally one cent higher than the price reported for
broilers purchased at the farm weight. This differential makes allowance for the cost of transportation between the farm and the processing facility as well as an allowance for the loss in weight, or shrinkage, incurred during transportation. Since the market reporter quotes a range of prices paid for broilers of equal quality, it is desirable to know what factors influence the processors to pay several different prices for the same class of broilers.

The daily market quotation of the U. S. D. A. Market News Service for live broilers is used by both processors and producers in Ohio as a basis for price determination in the sale of broilers. Ohio growers sell broilers on the basis of the Georgia live broiler market quotation in addition to using those quotations published for the three Ohio market areas. Georgia produces more than twelvefold the number of broilers grown in Ohio, 60 per cent of which are sold in the North Central States. In order to appraise the affect of the Georgia broiler production and the Georgia live broiler market quotations on the Ohio broiler market quotations, and the prices received by Ohio broiler growers, it is necessary to study the inter-relationship of these market quotations. The relationship of the prices reported by Ohio broiler growers to the market quotations should also be analyzed in order to determine the
adequacy of these reports in reflecting true market conditions. If there is no relationship between the published price quotation and the prices reported by producers, the market reports would not be fulfilling their purpose—to accurately report market conditions by quoting actual prices received by producers. On the other hand, if there is a distinct and close relationship, the market reports would be either reporting the market accurately, or would be used by the trade as a basis of settlement. If the latter is the case, the market reporter could be setting rather than reporting the market.

Another objective of this study was to compare the Ohio live broiler market quotations with the wholesale prices of ready-to-cook broilers to retailers in the Cleveland, Columbus, and Cincinnati areas, as reported by U.S.D.A. Market News Service. This price, then, is the market price which may be defined as "the price during a period within which the supply of the commodity is fixed....the seller of the product must sell it at the market price which then prevails at his point of supply".¹

¹Principles of Marketing, op. cit., p. 640.
Ohio is a deficit broiler producing state, and as such imports a large percentage of the number of broilers sold in the state from Georgia, Virginia, Kentucky, Pennsylvania and Indiana. Therefore it would be advantageous to know what affect, if any, these importations of live and dressed broilers would have on the methods of price determination used by buyers in purchasing live broilers in Ohio. These methods of price determination are also important because the market news reporter regularly contacts a sample of processors in Ohio to discover what prices they are paying, or are willing to pay, as well as the number of broilers purchased at each price. This information is largely a determinant in the formulation of the daily live broiler market price quotation for each of the three reporting areas in Ohio (Northern, Central and Southern Ohio).

In recent years the production contract, a means of providing the necessary capital to finance the broiler enterprise, has come into relatively widespread use. These

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2A contract between the broiler grower and feed company, processor or hatchery, or a combination, the three, for the purposes of providing feed, chicks and other supplies necessary to the broiler growing operation. Under a production contract, title to the broilers generally remains with the contractor, and the producer is paid an income based on the number of broilers, or pounds of broiler, sold.
production contracts also usually embody a marketing agreement that stipulates the processor to whom the broilers are to be sold. This type of contract severely limits the opportunities of a producer to "bargain" for higher broiler prices. Therefore it is important to ascertain whether or not these production contracts have an adverse influence on the prices reported by integrated broiler growers.
REVIEW OF THE LITERATURE

Comparatively little research has been done in recent years on the relationship of farm prices for broilers and the methods used in their marketing to the market quotation for broilers. The results of studies conducted in other areas can only be used as a guide, since the buying practices, contractual arrangements and other marketing methods vary from one area to another.

Marketing Methods

In a study on the quality and farm price of Delaware broilers, Smith (28) stated that the relationship between average weight and farm price was not very close. Also the relationship between the degree of fleshing of broilers and the farm price was not very consistent. In 1954 the processors, in the study, tended to purchase a greater percentage of their flocks with good rather than poor fleshing. This occurred either because the fleshing of all flocks offered for sale was relatively high, or the "spotters" for processors were doing a fairly good job of locating and purchasing those flocks with good fleshing. Smith advised that because of the difficulty of
evaluating the degree of fleshing of farm flocks of broilers, it may be advisable for the industry to explore the possibility of selling flocks on the basis of dressed rather than live grade.

Smith (26) found that the price received for live broilers was not closely related to the size or age of the flock, but was related to the mortality experienced. Those flocks having a high mortality tended to receive lower prices.

In an analysis of the marketing of Northwest Arkansas broilers, Cable (5) in 1948 reported that statistical analysis revealed that weight has very little effect on the price per pound received by the producers. Producers were not able to increase the price they received by selecting a certain breed, by selling birds at a specific weight, or by increasing the size of their business. Cable also reported that the large broiler growers tended to receive more bids for their broilers than did the small growers. Producers receiving only one bid knew that the one bid was the current farm price and that the other buyers probably would not raise the bid, or else they knew that the buyer was reliable and dependable. In addition, the number of bids obtained seemed to depend upon the relationship between the supply and demand for broilers at the time the birds were ready for market, and upon the producers' ability to locate interested buyers.
In 1953 Gerald (11) reported that more than 60 per cent of the broilers shipped out of Georgia went to markets in the North Central States. Gerald stated that the sources from which live birds were obtained and the manner of assembling them seemed to be related to the distance of the farm from the processing plant and the newness of the plant. For North Georgia, more than 80 per cent of the supply of live broilers was obtained from farms less than 40 miles from the plant. The distance between processing plants and production point affected costs of procurement in at least three ways: (1) shrinkage of live broilers in transit from farm to plant, (2) truck and labor costs, and (3) communication between processing plant and farm. Gerald pointed out that the difficulty of communication encouraged the maintenance of middlemen between processors or other type of primary buyers and producers.

(In 1953 the average broiler grower produced 3,000 birds per farm every 12 to 14 weeks, or a quantity sufficient to keep the typical Georgia processing plant operating for one hour. Therefore to operate for 40 hours per week over this period, the manager of the processing plant would have had to maintain contact with more than five hundred such producers.)

The assembly costs were adjusted by paying at two levels for the area. One was for broilers picked up and weighed at
the farm by the processor and the other was for broilers delivered to the plant by the feed dealer or producer.

Gerald reported that a limiting factor in attempting to distinguish differences in competition for supplies between processors is the actual use of the reported prices by processors in bidding for broilers. Some producers, feed dealers and a few processors stated that reported prices were applicable only during periods of stable prices. As the prices of broilers rose, those processors who had little control over their supply found that they had to pay above the reported prices. The reverse was true as the market weakened. A number of dealers who had no steady outlet reported that they accepted less than the reported prices for broilers.

Anderson (1), indicated that producers in a deficit area who sell to local markets have a price advantage over producers who sell to distant markets. The seasonal peak of broiler prices occurred in the fall during the period studied (1947-1948). However, this variation was not great--averaging three to four cents per pound. The seasonal peak of live broiler prices during the last six years (1953-1958) has occurred during the spring and early summer months.

Christian (6) in an analysis of broiler production and marketing in Mississippi, reported that the relationship among
markets tended to remain relatively constant even in a period of changing prices, and that growers selling on out-of-state markets received about the same prices as those selling to local markets.

In a study of Missouri broiler prices during the period 1946 to 1952, Miller (19) concluded that the prices followed a downward trend from a high of 24 cents per pound in 1946 to a low of 11 cents per pound in the winter of 1950-51, and then rose slightly to approximately 14 cents in the fall of 1952. Based on a regression line, the trend was steadily downward from 20 cents per pound in 1946 to approximately 12 cents per pound in 1952.

A study of broiler prices by Lasater (15) in 1950 indicated that they tended to fluctuate with the general price level and were influenced by quality, weight, size of brood, type of market, distance to market, breed and experience in producing and selling broilers.

In a study of the quality and farm price of Delaware broilers, Smith (28) reported on the Eastern Shore Poultry Grower's Exchange which sells poultry by auction method. He felt that under this system, the growers would be better informed about market prices, and more buyers would inspect individual flocks. This should result in a flock bringing a price warranted by supply and demand conditions.
Price Determination and
Market Information

In 1948 Cable (5), reported that there was very little
difference between the average monthly prices as reported by
the market news agencies for Northwest Arkansas and the
average monthly prices received by the producers covered
in the study. Broiler prices followed the general seasonal
price trends as exhibited by the Chicago, St. Louis, Fort Worth
and New Orleans broiler markets.

Results obtained by Purdue (24) in its study on the price
and production of broilers were in substantial agreement with
those obtained by Cable. In the short run (one week) there was
practically no relationship between price changes in one major
market or another; each had its own supplies and demands.
However, on the slightly longer period of one month, the average
prices of the various markets situated together were more
closely associated, and for distant markets, were almost totally
unrelated. During the period of a year, random price variations
tended to offset each other. Of the major markets available to
Indiana producers (Chicago, Detroit and Cincinnati) there were
no significant price differences in yearly average prices. The
Chicago market and areas in the southern part of Indiana had
relatively low prices.
In an appraisal of New York City live poultry market reports, Laurent (16) concluded that the market reports, from the standpoint of adequacy (but not accuracy), were satisfactory in most respects. The degree of coverage varied widely between and within market classes of poultry, the coverage being greater during periods of rising prices and on high volume days.

Pritchard (21) in a study on pricing eggs in central markets during 1955 reported that although quotation pricing\(^1\) is widely used in the egg trade, neither the trade nor the farmers are fully satisfied with it. Among the more important objections have been claims that

1) the quotations usually understate the true market value of eggs. The common practice of paying premiums over the quotations on nearly all eggs is cited as evidence supporting this charge.

2) prices fluctuate far more than basic supply-demand conditions warrant.

3) the quotation can be manipulated easily by skillful traders on the "inside."

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\(^1\)Quotation pricing is the practice of applying a set of differentials, agreed upon by the trade, to a base quotation published in the U.S.D.A. Market News Report or in a private market report such as the Price Current published by the Urner Berry Company. Therefore, the price quotation for Grade A Large white eggs published by the Market News Service is a base quotation and does not represent the actual market value of these eggs at the wholesale level.
Pritchard reported that in Los Angeles nearly all of the supply of market eggs comes from near-by, relatively large, specialized egg ranches. Many of these ranches produce from 50 to 100 cases of high quality eggs a week, and production rates are fairly uniform, seasonally.

Approximately 20 producers' bargaining associations of 5 to 10 producers each bargain annually with dealers on contracts which determine methods of establishing prices to producers and other terms of trade. Although these written contracts probably cover less than 15 per cent of the Los Angeles market receipts, they seem to set the pattern for less formal agreements between dealers and producers on several times as many eggs.

Prices to producers are based on prices to retailers as reported by the Federal-State Market News Service, and average 4 to 6 cents under the top of the range of reported prices to retailers for Grade "A" large eggs in 30 dozen cases at the distributors warehouses. Prices for the same eggs in cartons delivered to stores average about 4 cents higher.

Pritchard noted that prices to retailers seem to fluctuate less often and less widely than do wholesale prices - prices to wholesalers. The influence of retailers interested in merchandising rather than speculative profits may contribute to this relative stability.
The rigid quotation pricing system in Los Angeles appears to limit severely the ability of dealers to vary operating margins. This may encourage greater attention to problems of plant efficiency and merchandising. Gross farm-to-retail price spreads average about 15 to 16 cents a dozen, and are among the lowest margins in major U.S. cities. This same rigidity in the pricing system seems to create obstacles to efficient disposal of occasional temporary surpluses of eggs.

Pritchard noted that Los Angeles egg prices appear to be related to volumes of local receipts and to storage holdings, but are more closely correlated with receipts in west coast primary markets and with egg prices in New York.

In Chicago Pritchard et al. (22) reported that there are at least two distinctly different systems of assembling, distributing and pricing of eggs in competition in the market.

Over 40 per cent of Chicago egg receipts are handled by large corporate food chains with fully integrated egg marketing operations.

The second type is the traditional wholesaler. Informal quotation pricing agreements provide for determination of transaction prices on the basis of both the New York and Chicago wholesale egg quotations. The Chicago Mercantile
Exchange provides facilities for trading in eggs both for immediate and future delivery. Most of the traders on the daily spot call for eggs are wholesalers and breakers. Typically less than 0.5 per cent of the estimated receipts of the metropolitan area are traded on the spot call. This trading provides the principal basis used by a private market reporter who quoted the market daily. The U.S.D.A. market news service reports on wholesale and exchange trading and related information, but it does not provide information on prices paid and received for consumer graded and cartoned eggs by the firms handling most of the eggs received and sold in the Chicago metropolitan area.

The situation is somewhat similar in St. Louis. However, the chain food stores are generally not fully integrated and buy eggs through independent distributors of cartoned eggs. In addition the egg breaking companies are an important segment of the market.

The St. Louis egg prices and related information are collected and reported by the St. Louis office of the U.S.D.A. market news service and also by a private market reporting company. Pritchard reported that quotation pricing methods do not appear to be used, and a formal mechanism for establishing egg quotations does not exist. Pritchard felt that the present
methods of pricing and reporting prices of eggs in St. Louis appear to be generally satisfactory. Participation in the pricing process apparently is broader than the small group of firms generally considered to be the leaders.

In an article entitled "Deficiencies revealed in Chicago, N. Y. egg prices" in the January issue of the Southeastern Poultryman and Virginia Poultryman, Pritchard (23) stated that the serious deficiencies in the present system of establishing egg quotations have developed primarily because the egg industry, in adopting more direct marketing channels, all but destroyed the essential basis of the traditional price making process. At the same time the industry has continued to rely for price leadership on the dwindling number of firms that traditionally have performed this function. Pritchard stressed that price information and price reporting therefore must also be decentralized.

Pritchard stated that there is a growing need in large cities for market reports on retail prices and prices paid by retailers for cartoned eggs and for reports on volumes of eggs moving into retail channels. In producing areas, the primary reports becoming of increasing value are on prices paid producers, on prices received by assembler-distributors, and on volumes of eggs moving from farms to first receivers.
In an investigation of the pricing of eggs at wholesale in New York City, Gerald et al. (12) reported that less than 1 per cent of the estimated annual receipts in the metropolitan area are traded on the New York Mercantile Exchange.

The traditional system of marketing eggs through terminal market wholesalers has been declining in importance for many years as more direct, integrated, marketing procedures have developed.

This has raised a question of the representativeness of the quotations and it is felt that if base pricing is to become more efficient, consideration should be given to means of broadening the trade participation in exchange trading.

Gerald stated that current methods of establishing wholesale egg prices in New York City may be satisfactory for the traders in that market, but the use of New York egg quotations in setting prices in other cities and in distant producing areas is considered questionable. Since few eggs are actually sold on the Exchange, there is some doubt that this trading accurately reflects actual supply and demand conditions in the market. The use of these quotations for setting egg prices in other markets where conditions may be quite different may result in unsatisfactory prices.
Gerald recommended that the basis of trading should be broadened and the news services expanded to provide more market information such as prices at country points, prices to retailers, movements of eggs from farms into trade channels and movements of eggs through retail outlets in large cities.

In both the pricing of eggs and broiler price determination, the quotation published in the U.S.D.A. Market News Report tends to be determined by very few actually negotiated prices. In the egg trade the prices paid for eggs are determined by a set of industry agreed upon differentials applied to a base quotation. In the broiler industry the prices paid for broilers are determined by applying a differential to the published price quotations emanating from a certain market area. Those two pricing systems are similar, except that, in the broiler industry, there is not ONE commonly accepted base to be used as the base quotation, although the Georgia "mostly" live broiler market quotation is being used as such a base by a large number of buyers. Another difference is that there is no common agreement as to the size of the differential to be applied to this base. At the present time this differential is partially determined by competitive forces. In Ohio the differential commonly being used is 1 cent over the Georgia "mostly" live broiler market quotation published in the U.S.D.A. Market News Report.
In 1953, Cowert (8) reported that the prices quoted for Georgia broilers are the results of prices offered by processors and received by feed dealers, suppliers and processors. These prices are the "top mostly" quotations of the Daily Market Report. Waugh (29) stated in 1952 at a National Marketing Workshop meeting that the broiler industry reports needed more detailed and more accurate market information since decentralized marketing has developed with the growth of large scale processing and distribution of farm products. Waugh suggested that some Governmental assistance was needed to help counterbalance the great deal of imperfect competition that has developed.

Crouse (9) also recommended more detailed market information. He recommended that the reporting of chick placements be changed so that the number of broiler chicks be separated from farm chick placements, and that the number of chicks sexed and not sexed in the proportion sold also be reported. The major sources of economic outlook information used by farmers, according to Smith et al. (27), were, farm papers and magazines, newsletters, radio and agricultural college publications. Cable (5) reported that 95 per cent of the broiler growers contacted in the study of marketing practices in Northwest Arkansas used the radio as a source of market
Information. Newspapers were used by 90 per cent of these growers while 80 per cent also used feed dealers and broiler buyers as additional sources of local prices and market news.

In an analysis of the Market News Service in Ohio, McCormick (18) advised that a minimum of three daily livestock market news broadcasts were necessary to give adequate coverage of the market. He recommended that the reports include the range of prices as well as the "mostly" price. In addition, a breakdown of receipts by grade or classification would be advantageous for the producer. McCormick also advocated the inclusion of trend information both short and long time, as an aid to marketing and production planning.

McCallister et al. (17) in an economic and statistical analysis of Federal-State Broiler Market News Reporting in North Georgia, reported that in 1957, North Georgia processors sold an average of 5.1 million birds per week. This quantity exceeds the amount sold from any other producing area, or through any terminal market. The birds are processed and prepared "ready-to-cook" within the state, and sold by telephone to buyers in the North Central, Southern and Atlantic states. This type of marketing, with buyers and sellers widely scattered, requires more accurate and complete market information than was necessary when the traditional central market system was widely used.
Waugh reported that in 1954 the Atlanta market news reporter was in contact with 25 poultry processors in the area and 86 of the approximately 225 feed dealers. The reporter called an average of 8 processors and 7 feed dealers each day. In July of 1955 the coverage was expanded to include, as nearly as practical, all processors every day. In reporting live broiler prices for purposes of reflecting day-to-day price changes, the reporter was handicapped because only about 5 per cent of live birds in North Georgia were sold at a price agreed upon at the time arrangements for delivery were made. Moreover, many of these sales were special deals, either for a few birds of a specific weight or birds needed on short notice to complete a processors' order for dressed birds, and did not necessarily reflect general market conditions. The market reporter, in an effort to formulate a meaningful live bird price report with extremely limited data, relied heavily on his personal interpretation of demand conditions for dressed birds as obtained from processors, and supply information as obtained from processors and feed dealers.

Nearly all sales of live birds in Waugh's study were negotiated between feed dealers and processors on the basis or returns over a period of time, rather than negotiating each individual lot. This fulfilled their need for a dependable sales
outlet for the birds that came off farms week after week. When the birds were grown on contract, the sale price sometimes affected the growers returns. There was a need to satisfy the grower that the sale was fair. Therefore the Market News Report was used to set the daily paying prices, and was used by the processors without dealer confirmation. Thus the prices received by growers were always in line with those that the growers heard over the radio and read in the newspapers.

Only in selling dressed broilers was there any substantial volume of day-to-day trading in which specific prices were negotiated on individual lots.

McCallister (17) reported that growers' returns depended on the contract provisions which were quite variable. Even though a grower might be able to obtain and compare in detail two or three contracts (which is usually not the case), he would have difficulty arriving at a decision as to which contract was most favorable. The only common denominator of the contracts was the realised returns to growers per pound of broiler produced. As an aid in contract negotiations, McCallister recommended a new kind of market information giving average returns realized by growers for raising broilers, classified according to feed conversion rates achieved. In decisions to hold back or advance
sales of broilers of marketable age (8 to 11 weeks), McCallister stated that information on available and prospective supplies was indicated to be more useful than reported "market tone". The reporting of "market tone" was found to be correlated with short time cyclical variations in price, and there were differences of opinion in the industry as to whether or not it was intended as a price forecast. McCallister concluded that the reporting of day-to-day price changes could be done better in terms of dressed bird rather than live bird prices.

**Marketing Margins**

In an analysis of the marketing margins for poultry and eggs in the United States and selected cities Gray (13) found that farm-retail marketing margins for frying chickens increased about 13 per cent in the eight-year period from 1949 to 1956. The margins increased in spite of marked improvements in marketing and processing techniques, largely because of higher labor costs and other costs. Part of this increase was due to more services being provided by marketing firms. Changes in margins from month to month within a single year generally exceeded year-to-year changes. Short time lags in price adjustments and seasonal factors accounted for most of the monthly variations.
The farm-to-retail price spread for ice-packed fryers moving through processors, wholesalers and independent retail stores was reported by Conlogue (7) to be 20 to 22 cents per pound during the year 1955-56. When large volumes of fryers moved directly from processors through chain retailers, the spread was 15 to 16 cents per pound in Chicago and 19 to 20 cents in Minneapolis-St. Paul. For fryers sold through both types of stores, farmers in Georgia, Alabama and Arkansas received an average of 30 cents per pound (based on ready-to-cook weight). Farmers near Chicago received 33.3 cents per pound and those in Minneapolis-St. Paul area received 32.3 cents per pound. Conlogue reported that most handlers, processors, wholesalers and retailers operate on relatively narrow margins for fresh ice-packed poultry. (Processors of ice-packed fryers in Alabama, Arkansas and Georgia operated on an average margin of 7.7 cents per pound).

In a report on broiler production and price relationships Brandow (4) reported that the average spread between the farm price at Del-Mar-Va during 1947-1950 and the wholesale dressed price at New York was 7.2 cents. Brandow also reported that major price and production movements occurred simultaneously in all production areas. No area appeared to maintain a price superiority over any other area, or to lead in initiating a price
or production change. Seasonality in prices is much less noticeable than in placements, but there appears to be a tendency for prices to be higher during late spring and late summer, and low in late fall, winter and mid-summer. The lack of a strong seasonal price pattern may indicate that producers are matching the effects of seasonal changes in demand for broilers by varying production.

Gerald et al. (11) in a report on the marketing of Georgia broilers through commercial processing plants, stated that in 1953, the spread between prices paid for live birds and prices received for eviscerated broilers by Georgia processors was approximately 17 cents per pound. However only 8 cents of this 17 cent spread was actually obtained by the processors for use in paying operating costs and for profits. The remaining 9 cents represented the net loss due to evisceration and shrinkage.

In a study of marketing margins for eggs and frying chickens in the United States and selected cities Gray et al. (14) reported that in 1958 farm-retail price spreads for ready-to-cook frying chickens averaged 21.9 cents a pound, a decline of 0.1 cent from 1957. Retail prices averaged 47.4 cents a pound, and farm values (based on payment to producers for 1.37 pounds of live weight, the equivalent to 1 pound ready-to-cook weight) averaged 25.5 cents per pound in 1958. These annual averages
were the lowest in 9 years, and they reflected, in part, pricing practices at the retail level designed to market increasingly large volumes of fryers and, in part, increases in production and marketing efficiency. Since 1952, retail and farm prices for fryers declined every year except one (1955). During the same period, farm-retail price spreads remained relatively stable, while those for most other farm food products increased. Gray stated that some of the principal factors which have contributed to lower costs and price spreads for marketing frying chickens have been (1) changes in technologies of production, processing and distribution; (2) the increase in size of production and marketing units; and (3) the tendency among retail stores to use fryers as low margin special sales items.

Gray reported that retail store spreads accounted for 57 per cent of the total farm-retail spread in 9 cities in 1958. The farm-retail price spreads were higher in Los Angeles and San Francisco than in the other 7 cities because most of the birds sold in these two cities were shipped from processing plants located in Alabama, Arkansas, Georgia, Mississippi and Texas. Atlanta had the lowest prices at all market levels in 1958. Although farm values for frying chickens retailed in Los Angeles in 1958 were only 0.4 cent a pound higher than those sold through retailers in Atlanta, prices to retailers and retail prices
in Los Angeles were respectively 5.9 and 12.7 cents per pound higher.

**Production and Marketing Contracts**

In a study of integrated vs. independent broiler production in the south, Roy (25) stated that all growers whether independent or integrated received the same wage payment - approximately 2.2 cents per pound. In 1952-53, the independent growers had a cost structure of 2.6 cents per live pound lower than the integrated growers, but the latter received 2.4 cents per live pound compared with only 2.0 cents for independent growers. This situation was repeated in the 1955-56 study. Since the independent growers could not make any more money than integrated growers, and since the production and marketing risks were greater, the independent growers tended to become integrated.

In a summary of selected recent studies on broiler financing and contracting, Beckler (3) indicated that the most important characteristics of broiler production favoring the use of large amounts of short-term credit were; (1) the high proportion of cash costs - feed and chicks comprise 85 per cent of the total production costs; (2) the periodic flow of income resulting from the reliance upon the batch system which produces 4 - 5 flocks annually; (3) the unwillingness of many farmers to assume the
risks of self financing arising from production and marketing risks; (4) the possibility of quick returns with available labor and buildings, coupled with the lack of capital.

Feed manufacturers and their dealers comprise the largest source of production credit - supplying some degree of production credit to over 90 per cent of the broiler growers. Broiler processors and hatcheries also engage in limited financing, usually as a joint venture with feed dealers.

Beckler reported that commercial banks and production credit associations do little direct financing of broiler production because many of the growers cannot meet their credit requirements. However, the commercial banks do play an important role in broiler production by furnishing credit to other financing agencies such as feed dealers, hatcheries and processors, most of whom have sufficient net worth to obtain 90 to 180 day operating loans. The Farmers Home Administration has made loans for building and equipping broiler houses.

Beckler indicated that there were three distinct but related trends in broiler financing in the eight years from 1950 through 1957:

1) The number of growers using dealer credit has increased steadily. Even those capable of self-financing have been turning to indirect financing. The primary motivative factors are
"package deals" and reduction of risk through pooling risks and sharing profits.

2) There has been a significant shift away from open account's share and flat fee plans to feed conversion plans.

3) There has been a steady increase in both horizontal and vertical integration.

Beckler listed several important types of financing plans that are currently in use in the broiler industry:

1) Open account plan. Under this type of plan, the creditor furnishes money or materials, supplies and services required for the production period. Records are kept and a charge is made for interest - usually 6 per cent. This plan is easy to administer, transfers the least risk to the creditor and permits the producer the greatest freedom of action. The producer retains title to the birds and little if any management responsibility is placed on the creditor.

2) Flat fee plan. This plan was preferred by 57 per cent of the large dealers contacted in the study. The dealer furnishes the chicks, feed, medication and other supplies, and retains title to the birds. The grower furnishes the labor, equipment, buildings, fuel and litter and is paid a flat fee per head, or per pound of broiler sold, by the creditor. The dealer absorbs any loss incurred, and either retains all profits after deducting
losses or else divides the profit with the grower.

3) Share plan. This type is predominant in Virginia. Under this plan the dealer furnishes the chicks, feed, medicants and sometimes the fuel and litter. The dealer retains title and makes some management decisions. The grower furnishes labor, equipment and buildings, and receives a share of the profits. The profit may be split 50-50 or even 90-10, but the most common split is 75-25, with the grower receiving the larger portion.

4) Feed conversion plan. This is the most popular plan in Georgia and is replacing flat fee and share plans. The dealer furnishes the feed, chicks, and sometimes the medicants, fuel and litter. The dealer retains title to the birds and assumes any loss. The grower supplies the labor, equipment and buildings, and is paid on the basis of his feed efficiency.

5) Salary or labor contract plan. This plan insures a fixed return to the grower, based on the number of broilers started. The dealer supplies the usual items, retains title to the birds and keeps all profits resulting from the production and marketing operations. The grower supplies the labor, equipment and buildings. This plan is now used by few growers.

Chattel mortgages and conditional sales contracts were also used as a basis for credit by growers in Texas and Washington
in 1955. These terms are almost invariably a portion of any financing plan. In addition, the grower must accept field supervision. The producer must have his flock booked with some processor or else the financing agency could determine when and to whom the birds would be sold.

Beckler reported that most agencies have some net worth requirements, the amount and form of which varies considerably. Most growers must either own their fixed capital or show ability to maintain rental payments for the production period. The grower must also be able to demonstrate sufficient liquidity to meet family living expenses. Most agencies require grower experience, but some had provisions for new growers. A good feed conversion ratio was considered an important asset in obtaining credit.

Under all types of financing plans, charges are made for grower or production credit. These charges may take the form of increased margins to cover interest, risk and uncertainties, but the grower receives services for these charges which include technical advice on feeding, disease, and general poultry flock management.

There were three predominant methods of charging for credit:
1) A quoted interest rate or service charge specifically for credit

2) A quoted additional charge for chicks furnished on credit

3) A discount for cash payment for feed

Most feed dealers or other financing agencies use a 6 per cent interest charge, applied in various manners so that the price paid by the grower was strongly influenced. Some used one dollar per ton of feed and one-half cent per chick additional charge for credit, and a discount of one per cent if the bill was paid within ten days.

Dealers had two main sources of credit: (1) Trade credit, usually for 90 days, with the interest rates ranging from 0 to 6 per cent; (2) Commercial banks, usually for 90 days, with 5 to 6 per cent interest charges. The banks usually require a mortgage or a good financial statement for security.

Bebout (2) reported that a producer's cost of financing under the open account plan averages about 1 cent per chick, with an additional 1 cent added for a no-loss plan. Under the other plans of financing, a grower's account is charged with at least as high a price for chicks as under the no-loss plan. Under all financing plans feeds are charged to growers' accounts at no discount in price. Dealers charge more, or
widen their margins on chicks and feed in proportion to the risk involved, and in guaranteeing producers a return for their labor and capital.

In the study on financing the production and marketing of Texas broilers, Bebout found no significant differences in the production efficiency of open account and cash producers; however, in each case the producer assumed all of the risk. Substantial savings were made by producers who paid cash for their feed and chicks. On the basis of each 1,000 birds produced, they saved, on the average, $24.00 in feed cost and $13.00 in chick cost over open account producers. This is an average of 1.36 cents per pound of broiler produced, excluding hired labor and overhead costs. Any of the other financing plans used by growers indicated less savings and higher costs to the grower, but there were less production and marketing risks for them to assume.

After adjusting for price differences, Bebout reported that the cash growers received a net return of 30 dollars per 1,000 birds sold more than the open account credit growers. In all cases the dealers provided the same services to the open account and cash producers as they supply to those financed under heavier risks.

Christian (6) reported that dealers, in addition to serving as sources of credit, and as the medium through which
information on disease control and other technical information was passed on to the grower, actively participated in 73 per cent of the production decisions and 80 to 85 per cent of the marketing decisions.

Christian reported that the total direct cost of production per pound of broiler in 1954 was 23.9 cents per pound under the cash basis; 25.8 cents under the open account basis and 29.2 cents under the flat fee plan. Prior to any deduction for depreciation and interest on investment or labor, cash growers received a weighted average return of 3.3 cents per pound of broiler sold as compared with 2.26 cents for flat fee and 1.0 cents for open account growers.

The availability of credit has not been a limiting factor in expanding the total volume of broiler production in Mississippi. There seems to be a relatively high degree of competition among feed dealers to secure the patronage of growers. Growers on the other hand found it difficult to determine what they were being charged for credit.

In an analysis of grower risks, Beckler (3) stated three major risk categories:

1) Price declines below out-of-pocket production costs
2) Disease and mortality
3) Difficulty of finding a suitable market
Beckler summarized a discussion on the advantages of direct and indirect financing as follows:

**Direct Financing.**

1) lower interest rates on loans
2) discount on feed or chicks for paying cash
3) greater freedom for the grower in marketing and in making other management decisions
4) more profit for the efficient grower

**Indirect Financing.**

1) growers share risks with dealer
2) complete growing and marketing service from dealers
3) minimum security requirements to obtain financing

In an analysis of financing western broiler production, Naden (20) reported that short term financing is available through a variety of plans or packages. The differentiation of plans defies comparison, reduces emphasis on price competition and stresses service. Naden reported five conditions for credit which were in agreement with those reported by Beckler:

1) Chattel mortgages or conditional sales contracts
2) Field supervision
3) Must have a specific buyer
4) Must have experience in broiler production
5) The net worth of the operation

Naden reported that the chief causes of instability in the broiler industry were the short production period, the ease of entry, the nature of the costs (largely production costs), the inadequacy of planning and the ready availability of credit.
Naden stated that industry must use more price analysis, outlook information and forecasts. It must adjust output to long-run market demand and discourage profit seekers' responding to short-run stimuli.
METHODOLOGY

In studying the relationship of Ohio farm prices of broilers to the methods used in marketing them, and to the prices quoted in terminal markets, as complete a list as possible of the universe to be studied (all broiler producers in the State of Ohio with a capacity of 2,000 broilers or more) was compiled. A basic mailing list of those in the broiler industry was available, but some of these, because of the nature of the broiler industry, would have discontinued their broiler enterprise prior to the initiation of the study, while others would have entered the broiler industry. This list was brought up to date with the assistance of the Poultry Extension staff at the Ohio State University and the County Agents in the state. A total of 602 names of broiler producers was thus obtained.

During the month of September 1958, a joint study, involving the personal interview technique, was conducted on a random sample of broiler growers in Meigs County, Ohio. Rural sociologists from the Department of Agricultural Economics and Rural Sociology and Marketing Economists from the Department of Poultry Science co-operated in a socioeconomic study of
the effects of integration, or contract broiler production, on broiler growers. Meigs County was selected for two principal reasons: (1) it is the largest and most concentrated area of broiler production in Ohio, (2) it was assumed to be the most highly integrated\(^1\) county in Ohio.

A highly structured questionnaire which also included questions involving motivation techniques\(^2\) such as sentence completions, story completions, and picture stimuli, was pretested on selected broiler growers in the vicinity of Plain City, Ohio. After revision, the questionnaire was again pretested and then printed in its final form.

A sample of two-thirds of the broiler growers in Meigs County was selected to be interviewed by a sequential random sampling\(^3\) of all known broiler growers in Meigs County. The names of these growers were listed alphabetically, in series of three, and then a random sample of two of the first three broiler growers was chosen by making a random selection of one, the remaining two, then, were to be interviewed. (For example the broiler growers, arranged in alphabetical order, were assigned consecutive numbers from 1 to 72 inclusive.

\(^1\)Broiler growers utilizing production contracts as a means of financing their broiler operations are, for the purposes of this study, considered to be integrated.


\(^3\)Marketing Research, *op. cit.*, p. 325.
These numbers were divided into series of three, thus, 1, 2, 3; 4, 5, 6; ....... 70, 71, 72. By using a sequential random sampling procedure a random selection of one number from the first group would automatically determine all of the producers to be included in the study. Therefore if the number 2 had been selected, the sample would consist of broiler growers whose numbers corresponded to 1, 3, 4; 6, 7, 9; ....... 69, 70, 72. Each of the 72 broiler growers was given an equal and unchanging chance of being selected for inclusion in the sample.

On November 24, 1958, a questionnaire (Appendix - Exhibit I) composed largely of those questions relating to economics and marketing which had been pretested in the Meigs County study was mailed to the remaining 530 broiler growers involved in the study. This questionnaire was coded so that the respondents could be identified. Those no longer growing broilers were asked to return the questionnaire in the enclosed postage-free envelope.

A second questionnaire (Appendix - Exhibit II) was mailed to the non-respondents on January 26, 1959. As in the case of the first mailed questionnaire, those broiler growers who had discontinued growing broilers were asked to return the questionnaire. The questions asked were identical to those asked in the first questionnaire, but those questions relating entirely to
their costs of production and operation were omitted. Results from the first questionnaire, and from the Meigs County study, revealed that while the broiler growers were not adverse to divulging this information, in many cases it was either not in a suitable form, or else it was not available at all. It was also felt that the response to the questionnaire could be increased by using a shorter form.

During the month of March 1959, a selected sample of the processors in Ohio was interviewed, using a non-structured personal interview technique. These processors were selected so that those processing the majority of the broilers in Ohio would be included in the study, as well as a portion of those who operate on a comparatively minor scale. It was not feasible to stratify the approximately 600 processors in Ohio, since sufficient information of the type necessary for that purpose was not available. Further, the majority of the estimated 600 processors in the state are of extremely small size, and cater to specialized markets consisting of small independent retailers, restaurants and consumers.

The market news reporters responsible for reporting the live broiler markets in Ohio were also interviewed to ascertain their methods of operation and their function in formulating the live broiler market quotations.
The daily market report issued by the Federal-State Market News Service in Columbus was used as a source of price quotations in studying the relationship of Ohio farm prices of broilers to the prices quoted in terminal markets.

For the purposes of this study, those broiler producers having production contracts as a means of financing their broiler operations shall be considered as being integrated broiler producers, and those relying on other sources of credit, or on personal savings to finance their operations will be considered to be independent broiler growers. Those growers who have marketing agreements or marketing contracts, but who do not have production contracts shall also be considered to be independent broiler growers.

The terms producer, grower, broiler grower or broiler producer shall be used interchangeably and shall have the same connotation.

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4 A contract between the broiler grower and feed company, processor or hatchery, or a combination of the three, for the purposes of providing feed, chicks and other supplies necessary in the broiler growing operation. Marketing agreements are usually an integral part of these contracts.

5 A Marketing agreement is a formal or informal agreement between the broiler grower and a processor in which the processor agrees to buy the broilers either at a stipulated minimum price or at a price based on a stipulated market quotation.
PART II

MARKETING OF LIVE BROILERS BY BROILER GROWERS IN OHIO
NUMBER, CLASSIFICATION AND DISTRIBUTION OF RESPONDENTS

During September, 1958, a sequential random sample of two-thirds of the broiler growers in Meigs County, Ohio, were interviewed. Completed interviews were obtained from 40 of the possible 49 broiler growers included in this part of the study. The 9 broiler growers from whom interviews could not be obtained had either leased their facilities to other broiler growers, or else they were converting their buildings for other purposes. Some of these buildings were idle in September.

At the time of the study, 25 of the 40 broiler growers were using some type of production contract, while the remaining 15 were obtaining their financing by means other than production contracts.

During November of 1958, and January 1959, 530 questionnaires were mailed to broiler growers in Ohio (excluding those in Meigs County). These growers were asked questions relating to their methods of marketing broilers, the prices received and their sources of market information, and their use of contracts.
for broiler production (Appendix - Exhibit I). A total of 316 returns were received. However, only 126 of these replies were completed by broiler growers currently engaged in the production of broilers and were usable for this study. Ten growers indicated that they either processed and retailed their broilers or else they sold broilers frequently, in small lots, and hence were unable to supply any information of the type requested. The remaining 180 respondents replied that they were no longer growing broilers (Table 1), and therefore did not complete the questionnaire.

The 40 replies obtained in the Meigs County study are included in the analysis, thus a total of 166 replies were used in this study. Of this number, 63 had production contracts and 103 were classed as independent broiler producers.

**Average Number of Broiler Produced**

Replies from 164 producers indicated that broiler production in Ohio tends to be on a relatively small scale. Of these growers, 97 produced less than 30,000 broilers each year (Table 2). However, the producers ranged in volume of production from a low of 1000 broilers per year to a high of 208,000 per year.

In the first classification, 19 of the 27 producers grew less than 4 lots of broilers per year, and in the second class, 18 of
### TABLE 1

PERCENTAGE OF RETURNS FROM QUESTIONNAIRE MAILED TO 530 BROILER GROWERS IN OHIO

<table>
<thead>
<tr>
<th>Type of Respondent</th>
<th>Number of Replies</th>
<th>% of Usable Replies</th>
<th>% of Total Replies</th>
<th>% of Total Questionnaires Mailed</th>
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<td>Independent Producers</td>
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<td>69</td>
<td>28</td>
<td>17</td>
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<td>2</td>
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<td>-</td>
<td>57</td>
<td>34</td>
</tr>
<tr>
<td>Non-respondents</td>
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<td>-</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>530</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

\(^1\)Includes producers who grow many small lots of broilers and sell them to small local processors; and producers who process their own broilers.

\(^2\)Producers that are not currently engaged in broiler production.

The 37 producers grew less than 4 lots of broilers per year.

The majority of the broiler growers (94) grew 4 lots of broilers per year. However, a few growers who reported that they grew and sold a relatively large number of lots of broilers had a disproportionate effect on the average number of lots sold,
TABLE 2

DISTRIBUTION OF BROILER GROWERS BY TOTAL ANNUAL PRODUCTION OF BROILERS

<table>
<thead>
<tr>
<th>Total Production of Broilers (October 31, 1957 to November 1, 1958)</th>
<th>Number of Producers</th>
<th>Average Number of Lots Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 but less than 10,000</td>
<td>27</td>
<td>2.5</td>
</tr>
<tr>
<td>10,000</td>
<td>37</td>
<td>3.5</td>
</tr>
<tr>
<td>20,000</td>
<td>33</td>
<td>4.0</td>
</tr>
<tr>
<td>30,000</td>
<td>18</td>
<td>4.3</td>
</tr>
<tr>
<td>40,000</td>
<td>14</td>
<td>4.9</td>
</tr>
<tr>
<td>50,000</td>
<td>13</td>
<td>4.7</td>
</tr>
<tr>
<td>70,000 and over</td>
<td>12</td>
<td>4.6</td>
</tr>
<tr>
<td>Other producers(^1)</td>
<td>10</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>164</strong></td>
<td><strong>3.8</strong></td>
</tr>
</tbody>
</table>

\(^1\)Includes those producers processing and retailing their own broilers, and those growers who sell frequent small lots of broilers.

largely because of the low number of producers in each classification. Sixteen producers reported that they grew more than 4 lots of broilers. This can be accounted for by the practice of staggering the schedules of two or more broiler houses so that the income, expenses and labor are spread more evenly
throughout the year. The remaining 10 producers sold broilers frequently and in small lots, or processed their entire production in their own processing plants.

The figures in Table 2 do not represent the true potential capacity (based on four lots of broilers per year) of the broiler growers contacted in this study because 23 per cent of the producers reported that they grew less than four lots of broilers per year. These producers are largely included in the first two classifications of Table 2 (1,000 but less than 20,000 broilers).

If the number of broilers produced were adjusted to 4 lots per producer per year (Table 3), the average production would be increased from 29,600 broilers per year to over 31,000 broilers per year (computed from primary data).

The total volume produced by these 164 broiler growers consisted of 4,985,900 broilers which represents approximately 27 per cent of all broilers grown in Ohio in 1958.

Geographic Distribution of Respondents

While 40 of the respondents were located in one county (Meigs), the remaining 126 producers replying to the mailed questionnaire were widely dispersed over the State of Ohio (Figures 1, 3 and 4).
TABLE 3

DISTRIBUTION OF PRODUCERS
BY TOTAL YEARLY CAPACITY
(Adjusted to Four Lots of Broilers per Producer per Year)

<table>
<thead>
<tr>
<th>Total Adjusted Production of Broilers</th>
<th>Number of Producers</th>
<th>Number of Lots Sold (adjusted to 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 but less than 10,000</td>
<td>14</td>
<td>4.0</td>
</tr>
<tr>
<td>10,000 &quot; &quot; &quot; 20,000</td>
<td>34</td>
<td>4.0</td>
</tr>
<tr>
<td>20,000 &quot; &quot; &quot; 30,000</td>
<td>47</td>
<td>4.0</td>
</tr>
<tr>
<td>30,000 &quot; &quot; &quot; 40,000</td>
<td>20</td>
<td>4.0</td>
</tr>
<tr>
<td>40,000 &quot; &quot; &quot; 50,000</td>
<td>17</td>
<td>4.0</td>
</tr>
<tr>
<td>50,000 &quot; &quot; &quot; 70,000</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>70,000 and over</td>
<td>12</td>
<td>4.0</td>
</tr>
<tr>
<td>Other producers¹</td>
<td>10</td>
<td>n.a.</td>
</tr>
<tr>
<td>TOTAL</td>
<td>164</td>
<td>4.0</td>
</tr>
</tbody>
</table>

¹Includes those producers processing and retailing their own broilers, and those growers who sell frequent small lots of broilers.

Figure 1 shows the degree of distribution of the broiler industry in Ohio. While there are areas of concentrated broiler production, broilers are produced, as judged by the distribution of the respondents, in all but 14 of Ohio's 88 counties. Meigs
DISTRIBUTION OF THE RESPONDENTS IN OHIO REPLYING TO THE MAILED QUESTIONNAIRE (1958)

FIGURE I

KEY
- 30 and Over
- 20 - 29
- 10 - 19
- 5 - 9
- 1 - 4
- 0
County, with an estimated 72 broiler growers is the largest single area of concentrated broiler production in Ohio.

The 1954 Census of Agriculture reported that there were 1580 farms in Ohio reporting commercial broilers. These farms produced more than 14 million broilers (Figure 2). The large percentage of replies obtained in this study (34 percent) from former broiler growers who had gone out of broiler production, and the reports from the county agents in north-west Ohio that most of the broiler growers in their area had discontinued growing broilers and had changed to commercial egg production or the raising of turkey broilers, indicates that the number of farmers growing commercial broilers has been greatly reduced during the period 1954 to 1958. During 1954, Henry and Fulton Counties reported that they had 174 and 118 broiler growers respectively. The number of returns from broiler growers in Fulton County was less than 30, while less than 10 replies were received from Henry County.

Meigs County produced the largest number of broilers in 1954 (1,368,000) although they reported only 77 broiler growers. This study revealed that there were approximately 72 broiler growers in Meigs County in September, 1958. One of the reasons that could explain why the number of Meigs County broiler growers remained fairly stable is the fact that this is an
DISTRIBUTION OF BROILER GROWERS
IN OHIO, 1954

Source: 1954 Census of Agriculture

FIGURE 2
established poultry area in Ohio. The poultrymen in Meigs County had formerly been engaged in commercial egg production before they changed to producing broilers. In addition to this poultry background is the fact that much of the land in this area is not amble because of the steeply sloped terrain, therefore there are few opportunities for alternative sources of farm income. A large number of the broiler growers contacted in the Meigs County study were part-time farmers. Generally their wives looked after the broilers during the day and they helped at night. These factors, plus the financing afforded the broiler growers by means of production contracts, partially explain the stable number of broiler growers in the area.

Figure 3 shows the distribution and number of respondent broiler growers in Ohio. Questionnaires were returned from 73 of the 87 counties surveyed by the mailed questionnaire, however usable replies were received from only 52 of the 88 counties included in this study. These replies generally came from those areas with concentrated broiler production. A return of 100 per cent was received from 4 counties contacted in the study. A response of 50 per cent or better was realized by 14 counties, while 38 counties had a return of over 25 per cent. The remaining
NUMBER AND DISTRIBUTION OF USABLE RETURNS FROM BROILER GROWERS IN OHIO

* Personal Interview

FIGURE 3
14 counties had a response ranging from 8 to 24 per cent of those broiler growers contacted in the study.

Figure 4 shows the number of respondents per area, as well as the total number of broilers produced per year by the respondents. Approximately 28 per cent of the growers residing in the northeastern section of Ohio responded to the mailed questionnaire. These 47 producers grew over 1,000,000 broilers during the period October 31, 1957 to November 1, 1958. Their average production per broiler grower was 22,443 broilers, which was the lowest average production reported by any area in the state.

The next highest percentage of replies came from the producers living in the southwestern section of the state. Over 26 per cent of the producers contacted by the questionnaire responded. These 39 producers grew approximately 1,500,000 broilers during the period studied, or an average of 39,806 broilers per grower.

The northwestern part of the state had the lowest number of returns of the broiler grower schedules. A usable questionnaire was returned by 28 per cent of these growers. These 19 producers grew more than 600,000 broilers during the year, and averaged 34,813 broilers per producer.
DISTRIBUTION, NUMBER OF RESPONDENTS, AND THEIR TOTAL PRODUCTION OF BROILERS, BY AREA

Number of growers (upper figure)
Total production (lower figure)

FIGURE 4
Since the personal interview study was made of the broiler growers in Meigs County, the largest single broiler growing county in Ohio, no reliable estimate of the per cent of the questionnaires returned can be calculated. However, the 51 producers in the area that either replied to the questionnaires or were interviewed, produced an average of 34,812 broilers each, or a total of over 1,600,000 broilers.
Relationship of the Area in Which Broilers are Produced to the Price Received

The producer questionnaires were classified according to area (Figure 3), and an analysis was made of the relationship between the farm price received for live broilers and the area in which they were produced.

A total of 562 lots of broilers, and the prices received for them, were reported by the respondent producers. These were distributed as follows:

**TABLE 4**

**NUMBER OF SALES AND AVERAGE FARM PRICES REPORTED BY PRODUCERS FOR BROILERS SOLD IN OHIO, BY AREA**

<table>
<thead>
<tr>
<th>Area in Which Broilers Were Grown</th>
<th>Number of Prices Reported</th>
<th>Average Price Per Pound of Broiler (live weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwestern Ohio</td>
<td>58</td>
<td>19.77 cents</td>
</tr>
<tr>
<td>Southwestern Ohio</td>
<td>140</td>
<td>19.26</td>
</tr>
<tr>
<td>Northeastern Ohio</td>
<td>170</td>
<td>20.09</td>
</tr>
<tr>
<td>Southeastern Ohio</td>
<td>194</td>
<td>19.29</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>562</strong></td>
<td><strong>19.57</strong></td>
</tr>
</tbody>
</table>
The hypothesis was tested that there was no difference in the prices received for live broilers by producers residing in different areas of the State of Ohio.

Analysis of variance of the combined data revealed a computed "F" value of 5.650, which was considered to be very highly significant at the 5 per cent level. The computed "F" value was considered to be significant at all levels up to and including the 0.001 per cent level. Thus the general hypothesis was not accepted. Therefore the area in which a producer resided did have an effect on the price received by him for live broilers.

Analysis of variance was computed on the various possible combinations of areas, and the "F" test applied to each combination. The results of these analyses are given in Table 5.

The data in Table 5 indicate that producers residing in the North Eastern section of Ohio received an average farm price for broilers which was significantly greater than the average farm price received for live broilers by producers residing in the southern half of Ohio. Although the average farm price for live broilers received by the producers residing in the northwestern section of Ohio was approximately one-half a cent per pound greater than that received by producers residing
TABLE 5

COMPUTED "F" VALUES FOR ALL POSSIBLE COMBINATIONS OF THE FOUR AREAS IN THE STATE OF OHIO

<table>
<thead>
<tr>
<th>Area Combination</th>
<th>F Values (5 Per Cent Level)</th>
<th>Computed F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined areas</td>
<td>2.605</td>
<td>5.650**</td>
</tr>
<tr>
<td>Northwest X Southwest</td>
<td>3.841</td>
<td>2.218</td>
</tr>
<tr>
<td>Northwest X Northeast</td>
<td>3.841</td>
<td>1.049</td>
</tr>
<tr>
<td>Northwest X Southeast</td>
<td>3.841</td>
<td>1.889</td>
</tr>
<tr>
<td>Southwest X Northeast</td>
<td>3.841</td>
<td>13.801**</td>
</tr>
<tr>
<td>Southwest X Southeast</td>
<td>254.32</td>
<td>78.12</td>
</tr>
<tr>
<td>Northeast X Southeast</td>
<td>3.841</td>
<td>13.522**</td>
</tr>
</tbody>
</table>

**Very highly significant

\[ 1/F (F value less than 1.) \]

in the southern half of Ohio, this difference was not considered to be great enough to be considered significant. Similarly the average price received by producers in the northwestern area was only one-quarter of a cent per pound less than that received by producers in the northeastern area. This spread was also considered to be statistically not significant.
Relationship of the Size of Producer to the Price Received for Live Broilers

The producers responding to the mailed questionnaire were classified according to their annual production of broilers, and the prices that they received for broilers were recorded. The hypothesis was tested that the size of the producer had no relationship to the price received for live broilers. The average price per pound received for live broilers, as reported by the respondents was approximately 19.44 cents. The largest deviation (one-half a cent) from that price was received from those producers who had a total yearly production of over 30,000 but less than 40,000 broilers. These producers reported an average price of 19.96 cents per pound received for live broilers at the farm.

Analysis of variance of the combined data was computed and the "F" test applied. The "F" value for $N_1 = \infty$ and $N_2 = 6$ reported in Croxton and Cowden (page 762) was 3.669 while the computed "F" value was 1.397. A difference as large as that reported could occur by chance alone and did not represent a real difference in the samples. Since the level of significance was set at the five per cent level, there is the possibility of making an incorrect decision five times out of a hundred, or five per cent of the time.
On the basis of this sample, the capacity of a producer (as judged by the yearly average production) has no affect on the price received for live broilers.

**Relationship of Prices of Broilers Sold to Processors of Different Capacities**

The processors who were reported to have purchased the broilers sold by the respondents were classified according to their average weekly production of dressed broilers (Table 6).

**TABLE 6**

**RELATIONSHIP OF SIZE OF PROCESSOR TO PRICES RECEIVED BY PRODUCERS**

<table>
<thead>
<tr>
<th>Average Number of Broilers Processed per Week</th>
<th>Number of Prices Reported</th>
<th>Average Price Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5,000 broilers</td>
<td>178</td>
<td>19.77</td>
</tr>
<tr>
<td>5,000 but less than 20,000</td>
<td>61</td>
<td>19.31</td>
</tr>
<tr>
<td>20,000 &quot; &quot; 40,000</td>
<td>109</td>
<td>19.45</td>
</tr>
<tr>
<td>40,000 &quot; &quot; 60,000</td>
<td>68</td>
<td>19.40</td>
</tr>
<tr>
<td>Over 60,000 broilers</td>
<td>77</td>
<td>19.04</td>
</tr>
</tbody>
</table>
The hypothesis was tested that there was no relationship between the prices received by producers for live broilers and the size of processor to whom the broilers were sold.

The data were analyzed and the F test was applied. The computed F value was 1.4398, while the F value for \( n_1 = 4 \) and \( n_2 = 489 \) (infinity) at the 5 per cent level as reported in Croxton and Cowden (page 759) was 2.372. Therefore the hypothesis was not rejected. Contrary to statements made by small processors (under 5,000 broilers processed per week) contacted in this study there was no significant difference in the prices reported by producers for live broilers sold to processors of varying capacity.

The Relationship of Farm Prices Paid to Producers for Live Broilers Sold on Different Market Quotations

The producers who reported that their selling price was based on a certain market report were classified according to the market quotation used and the prices received for live broilers sold on that market quotation were tabulated (Table 7).

There were a few lots of broilers reportedly sold on the Columbus market, but the number was too small (15) to be analyzed without the risk of seasonal bias. Prices appeared to be lower during the late fall and winter months, and higher during the spring and summer months (Chart 1).
CHART I - THE MID-MONTH FARM PRICES FOR BEEF CUTOFF IN THE UNITED STATES AND OHIO, 1952-1959

TABLE 7

AVERAGE FARM PRICES RECEIVED BY OHIO BROILER GROWERS FOR LIVE BROILERS SOLD ON DIFFERENT MARKET QUOTATIONS

<table>
<thead>
<tr>
<th>Market Report</th>
<th>Number of Lots of Broilers</th>
<th>Average Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Ohio</td>
<td>83</td>
<td>20.29</td>
</tr>
<tr>
<td>Southern Ohio</td>
<td>112</td>
<td>18.94</td>
</tr>
<tr>
<td>Georgia</td>
<td>91</td>
<td>19.47</td>
</tr>
</tbody>
</table>

The hypothesis was tested that there was no difference between the prices received by producers for live broilers sold on the three different market quotations.

The data were analyzed and an F test applied. The F value at 5 per cent level was 2.996 while the computed F value was 7.743. Therefore the hypothesis was not accepted. Therefore there is a significant difference between the prices received by broiler growers who sell on the basis of different market quotations.

Further analysis revealed that there was no significant difference in the prices received by Ohio producers for live broilers sold on either the Southern Ohio - Southern Indiana...
market quotation, or on the North Georgia live broiler market quotation. There was a highly significant difference in the prices received by producers selling on the Northern Ohio market quotation when compared to the prices received by producers selling on the Southern Ohio live broiler market quotation. When the prices received by producers selling on the Northern Ohio quotation were compared to the prices received by producers selling on the North Georgia live broiler market quotation there was a significant difference at the 5 per cent level, but not at the 1 per cent level.

The producers selling on the Northern Ohio live broiler market quotation have a distinct price advantage over those producers selling on the Southern Ohio quotation, and a slight price advantage over those selling on the Georgia quotation.

Relationship of Prices Paid to Independent Producers to the Book Value or Price of Broilers Produced Under Contract

The data from those producers who reported that they were independent or did not have production contracts was compared to that from producers having production contracts (Table 8).

The hypothesis was tested that there was no significant difference between the prices received by independently
TABLE 8
COMPARISON OF PRICES RECEIVED BY INDEPENDENT AND INTEGRATED BROILER PRODUCERS

<table>
<thead>
<tr>
<th>Type of Producer</th>
<th>Number of Sales Reported</th>
<th>Average Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>316</td>
<td>19.6</td>
</tr>
<tr>
<td>Integrated</td>
<td>187</td>
<td>19.3</td>
</tr>
</tbody>
</table>

financed broiler growers for live broilers and the book values or prices reported by integrated broiler producers (those depending on production contracts as a means of financing their broiler operations). The limit was set at the 5 per cent level (F value = 3.841).

The data were analyzed and an F value of 2.627 was computed. Since this is less than the F value reported in Croxton and Cowden, a difference as large as that reported could occur by chance alone and did not represent a real difference in the samples. The hypothesis was not rejected.

1The live farm price used by integrators in calculating the financial outcome of the broiler growing operation.
There is no statistical difference between the book value of contract broilers and the prices reported by the independent producers.

The result of the price analysis indicate that a broiler grower can exert little or no effect on the prices he receives for live broilers. Only those growers residing in the northeastern section of Ohio, and those selling on the Northern Ohio live broiler market quotation appeared to receive a significantly different, or higher, price for their broilers.

A producer could not increase his selling price per pound of live broiler by selling to a different class of processor, or by increasing the size of his operation. Neither was there any statistical difference between the book value reported for broilers from under production contract and the price received by independent producers for live broilers.

Selling Practices of Ohio Broiler Growers

The majority of producers contacted in this study (48 per cent) preferred to sell to one processor regularly (Table 9). However, 39 per cent of these producers were financed by production contracts. The remaining 61 per cent of those producers selling to one processor did so because (1) they considered him to be reliable and fair; (2) since their broilers were to be sold on an agreed upon market quotation they saw no
### TABLE 9
SELLING PRACTICES OF OHIO BROILER GROWERS

<table>
<thead>
<tr>
<th>Type &amp; Number of Dealer to Whom Broilers Sold</th>
<th>Number of Respondents</th>
<th>Number of Bids Received From Buyers (Percentage of Respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>One Processor</td>
<td>83</td>
<td>48</td>
</tr>
<tr>
<td>Two Processors</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>Three &quot;</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Four &quot;</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Several &quot;</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Processors &amp; Live Haulers</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Live Haulers</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Processor-Producers</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Not Classifiable</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

*Producer selling to several processors but not classifiable because of the lack of sufficient information.*

advantage, and often a disadvantage, in changing processors;

(3) some producers felt that there was only one reputable dealer, or else there was only one large dealer, in their area, hence
there was no opportunity for bargaining; and finally, they felt that they had to make arrangements for the sale of their birds before they were ready to be sold. Many producers reported that their birds were "booked" or committed to a particular processor before the chicks were placed in their broiler house. Several producers stated that they felt that it was necessary to deal with one processor so that they might be able to sell their broilers during periods of surplus production, when he might otherwise refuse to take them.

Those producers who sold to more than one processor generally had either changed from one processor to another during the course of the year studied, or else they habitually sold each lot to several dealers. Very few broiler growers sold each lot of broilers to a different processor.

Approximately 6 per cent of the respondents habitually sold their broilers to live haulers, and 4 per cent changed from one type to the other during the period of October 31, 1957 to November 1, 1958.

Over 94 per cent of the respondents reported information concerning the number and type of outlets utilized in the sale of live broilers.
Number of Bids Received by Producers

The large majority of respondents indicated that they received only one bid for their broilers. Those who replied that they did not receive any bids either sold their broilers on the current day's market quotation, or did not consider the price quoted by the processor to be a bid.

The majority of the respondents, 71 per cent, indicated that they sold their birds to three or fewer processors during the period studied. Of this number, 63 per cent received one bid or less. Of the entire sample, 55 per cent of the respondents received one bid or less for their broilers. This is an indication of the widespread practice of buying broilers according to the current market quotation for live broilers, as well as the practice of dealing regularly with one or a few processors.
USE OF MARKET INFORMATION
BY OHIO BROILER GROWERS

Use of Market Information by
Independent Broiler Producers

The broiler growers in Ohio were asked to indicate their
sources of market information and to comment on the adequacy
of this information. The respondents reported that they used
an average of approximately 2 sources of market information
(Table 10).

From the above table it is evident that the U.S.D.A.
mailed news reports are received by the majority of growers.
A few growers complained that they were unable to obtain the
report despite repeated requests, while others complained that
their "subscription" was cancelled when the Market News reporting
officers were consolidated at Columbus, Ohio.

Those broiler growers who produced less than 1,000 broilers
annually tended to make less use of the published market news
information than those producing larger numbers of broilers
(Table 11).

The most used sources of market information by all classes
of independent broiler producers are (a) the U.S.D.A. mailed
**TABLE 10**

**SOURCE OF MARKET INFORMATION USED BY 97 INDEPENDENT BROILER GROWERS**

<table>
<thead>
<tr>
<th>Source of Market Information</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>a. U.S.D.A. Mailed News Reports</td>
<td>60</td>
</tr>
<tr>
<td>b. Radio and Television</td>
<td>36</td>
</tr>
<tr>
<td>c. Newspapers</td>
<td>31</td>
</tr>
<tr>
<td>d. Buyers</td>
<td>18</td>
</tr>
<tr>
<td>e. Servicemen</td>
<td>16</td>
</tr>
<tr>
<td>f. Other Growers</td>
<td>10</td>
</tr>
<tr>
<td>g. Trade Magazines</td>
<td>6</td>
</tr>
<tr>
<td>h. Privately Mailed Reports</td>
<td>6</td>
</tr>
<tr>
<td>i. Other Sources</td>
<td>0</td>
</tr>
</tbody>
</table>

news reports; (b) radio or television market news reports; (c) newspapers and (d) buyers.

**Use of Market Information by Integrated Broiler Growers**

Those broiler growers in Ohio who were using production contracts as a means of financing their broiler operations were
## TABLE 11

**USE OF MARKET INFORMATION BY DIFFERENT CLASSES OF 97 INDEPENDENT BROILER GROWERS IN OHIO**

<table>
<thead>
<tr>
<th>Source of Market Information</th>
<th>Total Production of Broilers (percentage of producers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000 to 19,999</td>
</tr>
<tr>
<td>a. U.S. D.A. Mailed News Information</td>
<td>57</td>
</tr>
<tr>
<td>b. Radio and Television</td>
<td>40</td>
</tr>
<tr>
<td>c. Newspapers</td>
<td>30</td>
</tr>
<tr>
<td>d. Buyers</td>
<td>17</td>
</tr>
<tr>
<td>e. Servicemen</td>
<td>20</td>
</tr>
<tr>
<td>f. Other Growers</td>
<td>7</td>
</tr>
<tr>
<td>g. Trade Magazines</td>
<td>0</td>
</tr>
<tr>
<td>h. Privately Mailed Reports</td>
<td>10</td>
</tr>
</tbody>
</table>

140 producers  239 producers  318 producers

asked questions with regard to their use of and the adequacy of their sources of market information. These questions were identical to those asked of the independent broiler growers.
The average integrated broiler grower reported that he used approximately two different sources of market information. The number of sources of market information ranged from 0 to more than 5 different sources.

Table 12 indicates that the majority of the integrated broiler

**TABLE 12**

**SOURCES OF MARKET INFORMATION USED BY 57 INTEGRATED BROILER GROWERS**

<table>
<thead>
<tr>
<th>Source of Market Information</th>
<th>Percentage of Growers</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. U.S.D.A. Mailed News Reports</td>
<td>66.7</td>
</tr>
<tr>
<td>b. Newspapers</td>
<td>41.2</td>
</tr>
<tr>
<td>c. Radio or Television</td>
<td>27.5</td>
</tr>
<tr>
<td>d. Servicemen</td>
<td>19.6</td>
</tr>
<tr>
<td>e. Buyers</td>
<td>11.8</td>
</tr>
<tr>
<td>f. Other Growers</td>
<td>9.8</td>
</tr>
<tr>
<td>g. Trade Magazines</td>
<td>5.9</td>
</tr>
<tr>
<td>h. Privately Mailed Reports</td>
<td>5.9</td>
</tr>
<tr>
<td>i. Other Sources</td>
<td>0.0</td>
</tr>
</tbody>
</table>
growers in Ohio use three major sources of Market Information: (a) The U.S.D.A. mailed news reports; (b) radio and television market news programs; and (c) market news information published in newspapers. The other sources of market news information in Table 12 appear to be of less importance to the integrated broiler grower.

The integrated broiler growers contacted in this study reported that they used the same sources of market information as do the non-integrated broiler growers. However, they appeared to place more emphasis on the U.S.D.A. mailed news reports and Newspapers, and less emphasis on information obtained from other growers than did the independent broiler growers. The producers using production contracts placed slightly more importance on the servicemen furnished by the contracting organization (usually a feed dealer but occasionally a hatchery or a processor supplied the serviceman) as a source of market information than did the independent growers.

The fact that the U.S.D.A. market news service live broiler market report is stressed to a greater degree by the integrated broiler producers than any other source of market information can be explained by the fact that the majority of the production contracts in use today base the book value of the broilers grown under contract on a specific broiler market
report. The book value is of immediate concern to the broiler grower, even though he is guaranteed a certain income per broiler sold for the use of his facilities and labor. In all cases where there is a profit sharing agreement, the broilers must be booked at the quotation or the differential from the quotation on the stipulated day specified in the contract in order to calculate the financial outcome of the production operation.

A large percentage of the contracts reported to be in use by the respondents in this study have a profit sharing agreement. However, the integrated broiler growers reported that "there is never any profit left to be distributed at the end of four lots of broilers". In each case there has apparently been a loss (or losses) incurred during the contract year which were sufficient to offset any profits accruing from the growing operation.

The broiler growers whose annual average production was less than 10,000 broilers stated that they did not use the U.S. D. A. report, but received their market information from buyers, newspapers, other growers and radio or television. The number of respondents in the classification (1,000 but less than 20,000) was so small that little if any significance can be attached to the representativeness of their answers (Table 13).
## TABLE 13
USE OF MARKET INFORMATION BY DIFFERENT CLASSES OF 57 INTEGRATED BROILER GROWERS IN OHIO

<table>
<thead>
<tr>
<th>Source of Market Information</th>
<th>Total Production of Broilers (percentage of producers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,000 to 19,999</td>
</tr>
<tr>
<td>a. U.S.D.A. Mailed News Reports</td>
<td>20</td>
</tr>
<tr>
<td>b. Newspapers</td>
<td>60</td>
</tr>
<tr>
<td>c. Radio or Television</td>
<td>20</td>
</tr>
<tr>
<td>d. Servicemen</td>
<td>20</td>
</tr>
<tr>
<td>e. Buyers</td>
<td>20</td>
</tr>
<tr>
<td>f. Other Growers</td>
<td>20</td>
</tr>
<tr>
<td>g. Trade Magazines</td>
<td>10</td>
</tr>
<tr>
<td>h. Privately Mailed Reports</td>
<td>0</td>
</tr>
<tr>
<td>i. Other Sources</td>
<td>0</td>
</tr>
</tbody>
</table>

10 producers  31 producers  16 producers
Adequacy of the Market Information Used by Ohio Broiler Growers

The broiler growers contacted in this study were asked to rate the adequacy of their sources of market information (Table 14).

**Table 14**

Adequacy of Market Information Used by 97 Independent and 57 Integrated Broiler Growers in Ohio

<table>
<thead>
<tr>
<th>Rating</th>
<th>Percentage of Replies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Independent</td>
</tr>
<tr>
<td>Excellent</td>
<td>0</td>
</tr>
<tr>
<td>Good</td>
<td>7</td>
</tr>
<tr>
<td>Adequate</td>
<td>14</td>
</tr>
<tr>
<td>Fair</td>
<td>7</td>
</tr>
<tr>
<td>Poor</td>
<td>8</td>
</tr>
<tr>
<td>Don't Know</td>
<td>6</td>
</tr>
<tr>
<td>No Answer</td>
<td>58</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The above table shows that the majority of the broiler growers who replied to the question "how adequate is the information contained the market reports?" felt that the market information as published by the Market News Service is adequate. However, many of those respondents made a suggestion by which they thought that the news service might be improved. Several producers advocated a radio market report daily at 11:30 A.M. or at 12 noon. These growers stated that the mailed market reports, and those published in the newspapers arrived too late to be of any direct value. They stated that often the prices had changed by the time they received the mailed information. They urged that the market report be given daily at a specified time, rather than at unpredictable hours. Thus they would be able to plan to be listening during that time (one producer remarked that "you can't sit around all day waiting for the broiler market to be broadcast").

Almost 15 per cent of the independent respondents indicated that they considered the market information to be adequate, but many added that there were times when the prices paid to producers were not in agreement with those published in the market report. Approximately 4 per cent of the independent respondents stated that they did not receive any report.
A large percentage of the independent broiler growers refused to comment on the adequacy of the Market News Service. They stated that "they had no way of knowing" whether or not the reports were accurate. A few growers stated that they "paid no attention to the market reports" because "they had to take whatever price was offered them." Some growers indicated that they were only interested in the report four times per year (when they sold their broilers).

Many of the respondents criticized the market report emanating from the Southern Ohio area for having too much variation or too wide a range of prices quoted. The market report frequently quotes a range of prices paid to producers for live broilers as wide as five and even six cents per pound. This wide range of reported prices causes confusion and dissatisfaction among those growers selling on the Southern Ohio Market. Many producers feel that "the dealers don't report accurately" and that the reports are "only as accurate as those who report."

One producer replied that the "U. S. D. A. live broiler market report is a waste of the tax payers money where chickens are concerned." A producer-processor replied that "I feel that the market report as it is issued for Southern Ohio has no value to either the farmer or processor, or at best is working against
both. " This respondent stated that the price spread of four
to five cents either forces them to buy dressed broilers or
go to Kentucky to buy live poultry which is sold on the Georgia
market. This, he claims, leaves the smaller growers without
a market and therefore they quit the business of raising
chickens.

This respondent made a further statement that confirms
the feeling obtained when talking to small processors in Ohio.
He stated that "perhaps the large processors give out a report
of one high price to get a large spread, knowing that most
small processors buy on the high market, feel that they can
force us out this way."

There is an apparent feeling stated by a few producers
and processors that the U.S.D.A. report actually makes the
market. "I am sure that if the U.S.D.A. report continues as it
has for the last few weeks, there will be no need for it as there
will be no one left to send it to." "Our market in Ohio is determined
by the U.S.D.A. service calling processors to see what they are
paying or are willing to pay" stated one producer. However,
"it is a known fact that processors can make more money on
cheap chickens than on higher priced..... so I'm sure that they
wouldn't help our market price - so I don't think they should even
be contacted, other than to check availability of birds."
Several producers replied to the question of the adequacy of the market reports by stating that the "price is set by two large processors."

The Market News Service was also criticized for not publishing enough market information. The percentage of broilers sold at "undetermined prices" was mentioned by several respondents as an undesirable characteristic, while the "mostly" quotation was criticized as being confusing by other broiler growers.

The integrated broiler growers also rated the adequacy of the market news reports. Approximately 20 per cent of these growers replied that they felt that the market news reports were adequate. Their suggestions for improving these reports were very similar to those given by the independent broiler growers.

A few producers commented that they liked the weekly summary section and thought that it was a good service; others commented that they appreciated the outlook information published in some of the trade magazines. They felt that this type of information should be made more readily available to the broiler grower.

In response to the question "how adequate is the information contained in the market reports?" one respondent replied "how
can we say if it is valid information or not." This comment closely parallels that reported by an independent broiler grower. Several growers stated that they didn't know how adequate the information was, while a few others said that there was no way to answer the question.

Generally, the integrated broiler growers felt that the market information was "adequate" or "satisfactory" or "serves the purpose." However, a few stated that they felt it to be inaccurate, that it did not contain enough information, and that the information would be "O.K., if the dealers would conform to it." One processor stated that the "dealers don't report accurately," while another grower said that he "paid no attention to them" (market reports). Apparently he felt that he had to accept whatever price was offered to him since he could do nothing to obtain a higher price.

It appears that the majority of the producers used the market news report in an effort to keep informed as to the trends in broiler prices, so that they might know approximately what price to expect when they sold their broilers. The U.S.D.A. market report, since it reports all of the major broiler markets, plus those in Ohio, is well suited to the producers needs in this respect. This market report was received by a majority of all of the broiler growers responding to the questionnaire.
However, a larger percentage of those producers utilizing production contracts as a means of financing their broiler operations reported the receipt of the U.S.D.A. Market Report than did the independent broiler growers.

**Market Reports Used as a Reference in Determining Expected Prices by Ohio Broiler Growers**

The majority of the independent producers in this study indicated that they used three market reports as a reference in determining the prices that they expected to receive for their broilers (Table 15), while almost all of the integrated broiler growers used only two market reports. The independent broiler growers use both the Northern and the Southern Ohio live broiler market reports. In addition approximately 10 percent of the respondents used the North Georgia live broiler market report as a basis of reference.

The Southern Ohio or Georgia live broiler market reports are used in almost all of the production contracts as a base for computing the profits or losses for the contract operation. Very few contractors base their paying price, or their "book value" on either the Northern Ohio, or the Central Ohio live broiler market reports. However, there are a few small processors or retail stores who do have a guaranteed price per pound for live broilers based on one of these markets.
## TABLE 15

**MARKET REPORTS USED AS A REFERENCE FOR PRICE DETERMINATION BY 97 INDEPENDENT AND 56 INTEGRATED BROILER GROWERS IN OHIO**

<table>
<thead>
<tr>
<th>Market Report</th>
<th>Percentage of Producers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Independent</td>
</tr>
<tr>
<td>Northern Ohio</td>
<td>17</td>
</tr>
<tr>
<td>Southern Ohio</td>
<td>29</td>
</tr>
<tr>
<td>Central Ohio</td>
<td>3</td>
</tr>
<tr>
<td>North Georgia</td>
<td>11</td>
</tr>
<tr>
<td>Shenandoah Valley</td>
<td>1</td>
</tr>
<tr>
<td>No Answer</td>
<td>40</td>
</tr>
</tbody>
</table>

\(^1\)Approximately two-thirds of these respondents had production contracts that were not dependent on a market quotation (Guaranteed Price).

Approximately two-thirds of these producers who did not indicate the market report used by them as a reference for price determination had production contracts that were entirely independent of the market conditions. That is, they were either being paid a flat price per pound of live broiler sold, with no profit sharing, or else that were paid a certain amount per day or per week adjusted to the number of broilers sold, again with no profit sharing clause in the contract.
Only 8 per cent of the integrated broiler growers responding to the questionnaire did not supply any information with regard to the nature of their contracts or the nature of their remuneration.
USE OF PRODUCTION CONTRACTS
BY OHIO BROILER GROWERS

Percentage of Respondents Using Production Contracts

Thirty-eight per cent of the respondents who indicated that they were currently engaged in the production of broilers during the period studied had production contracts, or were integrated broiler growers.

Usable replies were obtained from only 88 per cent of these respondents. The remaining 12 per cent either did not have, or know, the information requested, or else would not divulge it.

Of the total number of usable replies from integrated broiler growers, 52 per cent indicated that they had had other contracts before they accepted their current contract, while 45 per cent of the integrated broiler growers had not previously used a production contract. Table 16 indicates the percentage of the integrated broiler growers included in this study that accepted a contract during the period 1951-58 inclusive.
TABLE 16
PERCENTAGE DISTRIBUTION BY DATE OF ACCEPTANCE
OF CURRENT PRODUCTION CONTRACTS BY
56 INTEGRATED BROILER GROWERS IN OHIO

<table>
<thead>
<tr>
<th>Date</th>
<th>Percentage of Integrated Broiler Growers Accepting Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>4</td>
</tr>
<tr>
<td>1952</td>
<td>2</td>
</tr>
<tr>
<td>1953</td>
<td>0</td>
</tr>
<tr>
<td>1954</td>
<td>0</td>
</tr>
<tr>
<td>1955</td>
<td>2</td>
</tr>
<tr>
<td>1956</td>
<td>22</td>
</tr>
<tr>
<td>1957</td>
<td>30</td>
</tr>
<tr>
<td>1958</td>
<td>27</td>
</tr>
<tr>
<td>Not classifiable</td>
<td>3</td>
</tr>
<tr>
<td>n.a.</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
</tr>
</tbody>
</table>

Nature of Production Contracts

There is considerable interest and only a limited amount of research findings on the topic of contract farming.
Some observers view contract farming as one of the most important agricultural developments in recent years. Others see it as a major threat to the family-sized farm. Interest in contract farming has generally increased in the past few years, as the practice has gained widespread use in broiler raising.

In the early years of the broiler business, the success of a relatively small number of broiler growers prompted many others to enter the broiler business. This trend continued through the year 1955, which was a period of generally favorable prices. The following year, 1956, a large number of growers began raising broilers. The resultant increase in production so depressed the broiler market that many growers were in financial distress due to high feed and building costs and low broiler prices.

It was at this point that production contracts first became important. Prior to this time almost all of the growers were independent, although some of them had agreements with processors to take their broilers when they were grown out to 3 or 3-1/2 pound average at 9 to 10 weeks of age.

The major feed companies in the area promoted contracts with the growers in order to keep them in the broiler business, and thus ensure the continued use of their feed.
Hatcherymen in the area also were active in promoting contracts with the growers. They saw contracts as a means of making more efficient use of their facilities by scheduling production for at least a year in advance. This removed much of the uncertainty and risk of cancellation of orders that formerly plagued the industry.

The majority of growers entered into contracts of the following order:

![Diagram of contract relationships]

The grower generally contracted with the feed dealer. The latter, in turn, contracted with the hatchery and the processor. The feed dealer usually initiated and supervised the contract with the grower.

Of course there were some instances of the grower contracting directly with the hatchery or processor as shown in the above diagram by the dotted lines. However, this type of contract was not common.
The contracts when first offered continued for four lots (one year) and guaranteed the grower 10 cents per bird for all the broilers marketed. The broiler grower generally furnished the buildings, equipment and labor, while the feed company supplied the feed, chicks, medicants and supervision. However, the feed companies soon decided that the guaranteed price was too high, and recently began offering new contracts (also for one year's duration) in which the feed company reduced the guarantee to the producer. This was largely the result of higher production costs coupled with lower broiler prices, resulting in lowered returns, or losses, to the contractors.

At the time of the study, consideration was being given by growers to a new type of sliding scale contract by which the more efficient growers are able to increase their earnings. One company is offering this contract, with two options. The first is essentially a "sliding scale" by which the grower subtracts his feed conversion figure from his average weight per bird and multiplies the result by a factor taken from a table, which would yield the cents per pound of broiler (live weight) received by the grower. This table or sliding scale, is so constructed that the factors diminish in size as the bird become older. In order to make more money per bird than the average broiler grower, the grower must produce a heavier bird at a better (lower) feed
conversion at an earlier age. The average grower would realize about five cents per bird.

The second option is for the grower to take 90 per cent of the profits at the end of each lot of broilers.

At the present time, the large majority of contracts provide for a division of the profits (if any) remaining at the end of four lots of broilers on a 50-50 basis between the grower and the contractor. The general feeling of the grower is that "there will never be any profit - ever."

The production contracts encountered in the study varied from very little integration (in the case of the grower who is self-financed and has an agreement with a processor to take his birds at a definite price or market quotation) to the highly integrated grower who works for a weekly wage. There was a more or less "average" kind of contract; but there were also several other types of contracts.

The large majority of contracts stipulated that the grower furnish buildings, equipment, and labor (in accordance with their specifications) as well as either the litter or the catching labor. The contractor, on the other hand, agreed to supply all of the other necessities, such as feed, chicks, medicants, heating fuel, electricity, insurance, and either the litter or the catching labor. The contractor also assumed most of the production
and all of the price risks involved in broiler growing.

Although there are innumerable variations to be found in broiler contracts, the majority of the contracts reported by the integrated broiler growers in Ohio were fairly similar (Table 17). The integrated growers in Ohio were asked to indicate who supplied the various production items, and who made the production and marketing decisions under their present contract.

Most of these contracts net the grower 6 to 7 cents per bird marketed, regardless whether (1) stipulated at 2 cents per pound live weight sold to processor and half of the profit at the end of the year, or (2) the sliding scale type contract.

In 11 per cent of the contracts, the grower supplied all of the production items, and in one-half of these contracts, the grower made all of the management and marketing decisions. These contracts guaranteed the grower a fixed price (e.g. 20 cents) per pound for all broilers produced. The grower made the decision with regard to sources of supply.

In only 4 per cent of the cases did the contractor make all of the management and marketing decisions, and in 2 per cent of the cases all of these decisions were reported to have been made jointly. In the remaining 89 per cent of the contracts a portion of these decisions were made jointly or were made partly
### TABLE 17

**PRODUCTION, MANAGEMENT AND MARKETING DECISIONS ASSUMED BY INTEGRATED BROILER GROWERS IN OHIO**

<table>
<thead>
<tr>
<th>Production Item Supplied by Integrated Growers</th>
<th>Respondents</th>
<th>Management &amp; Marketing Decision Made by Integrated Growers</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Buildings</td>
<td>55</td>
<td>100</td>
<td>23</td>
</tr>
<tr>
<td>Equipment</td>
<td>55</td>
<td>100</td>
<td>22</td>
</tr>
<tr>
<td>Labor</td>
<td>42</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>Litter</td>
<td>19</td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td>Feed</td>
<td>6</td>
<td>11</td>
<td>48</td>
</tr>
<tr>
<td>Chicks</td>
<td>6</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Medicine and Drugs</td>
<td>10</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Veterinary Service</td>
<td>11</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Heating Fuel</td>
<td>29</td>
<td>53</td>
<td>14</td>
</tr>
<tr>
<td>Electricity</td>
<td>23</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Catching Labor</td>
<td>28</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>29</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>16</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>
by the contractor and partly by the grower. For example the grower may have a preference for chicks from a certain hatchery, and if this meets with the approval of the contractor, may obtain his chicks there, or else he may be allowed to choose a hatchery from several alternatives offered by the contractor. The decision as to type of buildings and equipment are usually left up to the grower but are subject to the approval of the contractor.

The above table (17) points out that while the integrated broiler grower has forfeited some of his management and marketing decisions in return for a guaranteed income per broiler produced (based on the number, or the number of pounds, of broiler sold), he is still able to exercise a considerable degree of influence in making many of the management decisions.

Those integrated producers contacted in the personal interview study in Meigs County, Ohio, stated that they retained a greater degree of their independence than they had anticipated before entering into a production contract. However, they also stated that since they were not financially responsible for their broilers, there was a tendency to be somewhat lax in their management.

Likewise the majority of the growers welcomed supervision from the contractor and felt that the serviceman was helping them
to do a better job of growing broilers. Many servicemen visited their growers twice a week. A few growers resented being told how to grow broilers and felt that it was an infringement of their independence. They attributed their increased performance to better flocks and feed and not to better management. Some other growers felt the servicemen might carry disease between broiler flocks.

Some of the respondents stated that there was no advantage in trying to produce a quality broiler since "they had never received any advantage for so doing." They felt that as long as the producer of mediocre broilers could earn as much as the producer of better broilers, then it was not worth the extra expenditure of time and effort. These producers would prefer some type of contract that would reward the superior broiler grower for his ability to grow a quality broiler.

**Profit Sharing by Integrated Broiler Growers in Ohio**

The majority of the integrated producers indicated that their contract embodied some type of profit sharing plan (Table 18).

Profit, in this study, refers to that portion of the gross income realized from the sale of broilers that remains after all expenses have been deducted. The following is taken from an
### TABLE 18

**PROFIT SHARING PLANS REPORTED BY INTEGRATED BROILER GROWERS IN OHIO**

<table>
<thead>
<tr>
<th>Plan for Distribution of Profit (percentage)</th>
<th>Number of Respondents</th>
<th>Percentage of Respondents With Production Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grower 100 0</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>Grower 90 10</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Grower 80 20</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Grower 50 50</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>Grower 15 85</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Grower 0 100</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Don't Know</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>No Answer</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Other*¹</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

*¹All of the profit returned to the grower after each lot of broilers.

**Note:** In all except the above case*¹ the profit was calculated on a yearly basis. All over expenses were returned to the grower.
actual transaction. The broiler grower sold five thousand broilers to the processor who claimed that he had to have them, in spite of the fact that the grower told him that they were not ready to be sold. These broilers were sold at eight weeks and two days of age, and weighed 3.1 pounds each. Although the following shows a net loss on the broiler operation, it does reveal the method of book keeping used by the integrators.

<table>
<thead>
<tr>
<th>INCOME</th>
<th>EXPENSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Weight</td>
<td>Feed $1,780.00</td>
</tr>
<tr>
<td>Tare</td>
<td>Chicks 650.00</td>
</tr>
<tr>
<td>Total</td>
<td>Litter 87.50</td>
</tr>
<tr>
<td>Less: No. Value</td>
<td>Light 87.50</td>
</tr>
<tr>
<td>Net</td>
<td>Fuel 50.00</td>
</tr>
<tr>
<td>Price</td>
<td>Guarantee 250.00</td>
</tr>
<tr>
<td>Gross Income</td>
<td>Total $2,767.50</td>
</tr>
<tr>
<td></td>
<td>$2,420.80</td>
</tr>
<tr>
<td></td>
<td>$346.70</td>
</tr>
</tbody>
</table>

The grower received 100 per cent of the profit remaining after 4 lots of chickens (1 contract year) in 32 per cent of the replies, and the profit was divided evenly between the grower and the contractor in 30 per cent of the cases. There were a few contracts in which the profit was given to the grower at the end of

---

2 The processor deducted 550 pounds (live weight) of broiler because they were considered to be too small.
each lot of broilers. In all cases of a loss being incurred, the contractor assumed the responsibility.

**Motivation for Accepting Contracts**

When the contracts were first (widely) offered to the farmers in 1956, the prices for broilers were very low and growers felt they would continue at this low, unprofitable level.

The contracting companies utilised this low price as an effective means of persuading the growers to accept a contract in order that they (the grower) could continue their broiler operations.

The farmers were not "coerced" into accepting these contracts. However, many of the growers did see them as their only salvation in time of need. This view was not discouraged by the contracting agents. Many growers had to make monthly installment payments on their broiler house mortgages; they needed to keep these houses full of broilers.

Those farmers who had the financial resources and who were efficient producers (and also fiercely independent) remained independent producers.

The farmers who claim that they were forced to accept a contract did so because of economic pressures and not because of pressure from the contractors. Part of this economic pressure
resulted from broiler houses being built on credit and on the strength of future broiler profits. When these profits failed to materialize, the growers were hard pressed for their mortgage payments and seized (voluntarily) on contracts as a means of making these payments.

Contracts have had little effect on either efficiency or on mortality. There are some growers who have experienced lower feed conversions and lower mortality while on contract; but they attribute a large per cent of this improvement to better feed and chicks rather than to better management. The growers may be rationalizing their improved efficiency; it may really be due to contractor supervision. One feed dealer feels that his contracts have improved the feed conversion and mortality of his growers under contract. However, he has mainly the small and previously inefficient grower under his contracts. Contracts had less effect on the efficiency of already efficient growers.

Satisfaction With Integration

The respondents in this study evidenced feelings concerning integration varying from satisfied to very unsatisfied. There is little actual dissatisfaction. The majority opinion is that contracts are necessary and "the coming thing." Few growers have the size and financial capacity to withstand the sudden economic
The broiler growers in Ohio contacted by this study were asked if they were earning enough money on their broiler operations to amortize their investment. Most of the respondents who answered this question (28 per cent) felt that they were not earning enough money to amortize their investment. However 25 per cent of these respondents stated that what they were getting was better than letting the buildings remain idle and receiving nothing.

Seven per cent of the respondents felt that they were doing satisfactorily while 4 per cent said that they did not know how they were doing. They replied that it was difficult to know whether or not they were amortizing their investment since it had been accumulated over a long period of time, and was difficult to evaluate.

A total of 64 per cent of the respondents did not comment or otherwise answer this question. It is felt that they did not do so because they did not have the necessary information available. This premise was substantiated by the personal interview study conducted in Meigs County which revealed that many broiler growers did not keep adequate records. These producers who did keep records often did not have them summarized. Producers who had production contracts generally had fairly meaningful
records. However these records were compiled by the contracting agency and not the grower.

In general, the integrated producers did not know what they were being charged for chicks, feed or other supplies that they used. They felt that since there was never any profit returned to them, and since they received a fixed income per pound of broiler or per broiler sold, then the prices that they were charged for chicks and feed and other charges were not meaningful to them. In the Meigs County study the producers under production contracts reported that they were paying at least 1 cent per chick and an average of 14 dollars per ton of feed more than the independent broiler grower. The majority of the independent growers obtained feed on 30 to 90 days credit, with very few producers paying cash for their supplies.

Present plans of the major contracting companies call for further integrating their sources of supply. They claim that there is not enough mark-up on the feed to support a contract system and that the chick costs too much in comparison with Georgia chick prices. They are presently planning to integrate with supply flocks and with the growers of the replacement stock. Their tentative plan is to have the chicks custom-hatched rather than becoming involved in the operation of the hatchery itself. In this way, they feel that there will be sufficient total mark-up
to carry the broiler operation at a profitable level.

An "ideal" contract must supply the grower with a reasonable labor income plus interest and depreciation on his investment. Another prerequisite is that the contract must compensate for better feed conversions, lower mortality, and higher quality broilers. This latter may require that the grower be paid on the basis of the grade of the dressed bird. There must also be an incentive for the broiler grower to assume responsibility and receive credit for his superior management. On the other hand the contracts must be economically feasible for the contracting parties.
PART III

PRICING OF LIVE BROILERS BY OHIO PROCESSORS
CLASSIFICATION GEOGRAPHIC DISTRIBUTION
OF PROCESSORS

A selected sample of the processors operating in Ohio was interviewed during March, 1959. The personal interview technique was employed using a non-structured questionnaire. These processors were asked their opinion as to the adequacy of the live broiler market reports issued by the Federal-State Market News Service, and were requested to suggest improvements that would be beneficial to all users of the information. Information was also sought as to their methods of buying live broilers and of establishing their wholesale selling prices.

A total of 29 interviews were completed from processors who ranged in size from those who averaged less than 2,000 broilers per week, to those who averaged more than 70,000 broilers per week. These processors were classified by the number of broilers processed per week (Table 19).

The geographic distribution of the processors contacted in this study is shown in Figure 5. The locations of these processors approximately correspond to the concentration of broiler production, as indicated by the returns from the producer questionnaire. Their operations are influenced by the areas of
TABLE 19
BROILER PROCESSORS CLASSIFIED
ACCORDING TO VOLUME

<table>
<thead>
<tr>
<th>Average Number of Broilers Processed per Week</th>
<th>Number of Processors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2,000</td>
<td>5</td>
</tr>
<tr>
<td>2,000 but less than 5,000</td>
<td>7</td>
</tr>
<tr>
<td>5,000 but less than 20,000</td>
<td>5</td>
</tr>
<tr>
<td>20,000 but less than 40,000</td>
<td>6</td>
</tr>
<tr>
<td>40,000 but less than 60,000</td>
<td>3</td>
</tr>
<tr>
<td>60,000 and over</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>29</td>
</tr>
</tbody>
</table>

Broiler production in neighboring states. For example, southwest Ohio has a larger number of processors than any other area. These processors formerly processed poultry from the neighboring farming areas, but now obtain a large proportion of their supplies of live poultry from the broiler production areas in Indiana and Kentucky. Likewise those plants situated near the other peripheral areas of Ohio draw a percentage of their live broilers from nearby states.
GEOGRAPHIC DISTRIBUTION OF PROCESSORS INTERVIEWED IN STUDY

FIGURE 5
Sources of Broilers

The processors contacted in this study evidenced a strong feeling of personal possession both in regard to their producers and in regard to their areas of supply of live broilers. They tended to think and act as if they had exclusive buying rights in their supply areas, and resented other processors buying broilers in "their" areas.

A few processors had attempted informal agreements with regard to these areas and the price that each would pay for broilers. However, this type of agreement was ineffective. Processors, when short of broilers, tended to disregard their trading areas and also current prices in their efforts to fulfill the needs of their clients for dressed poultry. Many of the processors stated that it was impossible to buy broilers at the "mostly" live broiler market quotation, and that they had to pay a premium ranging from one-half to two cents per pound, depending on the relative scarcity of broilers in their area, and their need for broilers. They stated that if the grower knew of this scarcity and of their need, he would hold out for the highest possible price. These processors remarked that only those broilers previously committed to be sold at the "mostly" live broiler market quotation could be purchased at that price.
The total yearly average number of broilers processed in 1958 by these 29 processors was approximately 30 million. Of this number approximately 40 per cent or 12 million birds were produced in Ohio. This represents approximately 68 per cent of the total number of broilers produced in Ohio in 1957 (in 1957, Ohio produced 17.6 million broilers and in 1958 the estimated production was 18.5 million broilers). The remaining 60 per cent of the birds processed in Ohio were grown in Indiana, Kentucky, West Virginia and Pennsylvania (Table 20).

**TABLE 20**

**SOURCES OF BROILERS PROCESSED IN OHIO IN 1958**

<table>
<thead>
<tr>
<th>Area</th>
<th>Average Number of Broilers Processed</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>per Week</td>
<td>per Year</td>
</tr>
<tr>
<td>Southern Ohio</td>
<td>134,110</td>
<td>6,973,720</td>
</tr>
<tr>
<td>Northern Ohio</td>
<td>74,950</td>
<td>3,897,400</td>
</tr>
<tr>
<td>Central Ohio</td>
<td>20,800</td>
<td>1,081,600</td>
</tr>
<tr>
<td>Indiana</td>
<td>199,340</td>
<td>10,365,680</td>
</tr>
<tr>
<td>Kentucky</td>
<td>122,250</td>
<td>6,357,000</td>
</tr>
<tr>
<td>West Virginia</td>
<td>16,250</td>
<td>845,000</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>7,000</td>
<td>364,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>574,700</strong></td>
<td><strong>29,884,400</strong></td>
</tr>
</tbody>
</table>
BUYING PRACTICES OF OHIO PROCESSORS

Buying Practices Used by Small Processors

The small processors (those who process under 5,000 broilers per week) purchased their live broilers almost exclusively from Ohio, with the majority coming from southern Ohio. They tended to buy their birds from either local producers or through a middleman such as a broker-processor or a live hauler. For this service they reported that they paid a brokerage fee, usually one-half cent per pound, plus a transportation charge of one cent per pound. In addition they were usually charged at the farm weight, and thus had to absorb the shrinkage that normally occurs when broilers are moved from the farm to the processing plant. For this reason, they preferred to pay a premium for locally produced broilers, since there was a shorter haul from farm to processing plant, and as a result, less shrinkage to be born by the processor. Another factor that strongly influenced their decision was their inability to buy broilers from other areas at competitive prices. Producers were reluctant to sell a portion of a flock without receiving a premium payment for the privilege. Likewise, truckers or live-haulers would not divide a load of broilers unless they received
an added incentive or premium over the current market quotation.

Almost all of the small processors contacted in this study reported that they were paying producers prices based on the Southern Ohio-Southern Indiana live broiler market quotation on the day of sale. Many reported that they were buying on the basis of one cent over the Southern Ohio "mostly" quotation, and a few reported paying a higher premium or else using the top quotation as the basis for determining the price to be paid for live broilers at the farm.

There was a trend toward using the Georgia "mostly" quotation as the base of trading with the common differential being one-half to one cent over the Georgia "mostly" live broiler market quotation on the day of sale or pickup from the farm.

Of the 12 processors contacted who processed an average of less than 5,000 broilers per week, 10 reported that the Southern Ohio-Southern Indiana live broiler market quotation published by U.S.D.A. Federal-State Market News Service was their chief source of market information, one used the Georgia quotation while one used both the Georgia and the Southern Ohio-Southern Indiana reports in his operations.
Buying Practices of Large Processors

The large processors (those who processed an average of over 5,000 broilers per week) tended to purchase more of their broilers from areas outside the State of Ohio. This was because there was not sufficient local broiler production to support a processing plant of their size and scale of operations. Also, since they were in direct competition with Georgia processors, they felt that it was necessary to buy as close to the Georgia market (pricewise) as possible. The majority of their supplies of live broilers originated in Indiana, Kentucky and Southern Ohio. Approximately two-thirds of these processors established their paying prices on the Georgia "mostly" live broiler market quotation, and paid producers a premium of one cent over the Georgia "mostly" on the day of sale. A few processors were basing their paying prices on one cent over the Georgia "mostly" quotation on the Friday previous to the day of sale.

The remaining one-third of the 17 large processors contacted in this study (who processed an average of over 5,000 broilers per week) reported that the Southern Ohio market report was their chief source of market information. The general basis used by these processors for buying broilers was the Southern Ohio "mostly" quotation on the day of sale, or on
The Friday previous to the sale. The basis for choosing Friday, rather than any other day was stated to be the fact that these processors were forced to commit themselves on Friday as to the prices that they would charge for dressed broilers during the following week.

**Determination of Selling Prices by Small Processors**

The small processors reported that they usually computed their base or low wholesale selling price by means of a formula. While the methods used varied in detail, the common type of formula determined the selling price by adding five to seven cents to their meat cost (based on a yield of 73 per cent) to cover processing and overhead costs. For example:

- Cost of live broilers at the farm - 17 cents per pound
- Average processing yield - 73 per cent of live weight
- Average cost of processing - 6 cents (including overhead and profit for dressed, ice-packed broilers in boxes)

Therefore meat cost equals 17 divided by 0.73 or 23.28 cents per pound. Wholesale selling price is then 23.28 plus 6 cents for a total of 29.28 cents per pound.

This is the lowest price that these processors would willingly accept for their dressed broilers.

**Determination of Selling Prices by Large Processors**

On the other hand, the base or wholesale selling prices for those birds processed by the large processors appeared to be established by competition from Georgia dressed broilers. The
large processors contacted in this study also used a formula to establish their base price, but they remarked that it was an ineffective procedure, since their clients, the chain stores, effectively determined their wholesale selling prices by quoting the price at which they could buy Georgia broilers (f.o.b. chain store warehouse). The processors remarked that it was a case of either accepting their price or else looking for another market for their broilers. Since the chain stores and large independent retailers sell approximately 90 per cent of all broilers dressed in the United States, and since only these large retail institutions are able to buy in sizable quantities, the larger processors are forced to deal with them. As one processor remarked "we, in the broiler processing business, are unique; instead of trying to sell something, as do all other manufacturers, we are trying to buy something. We have no control over the price that we receive for our product."

Most of the larger processors, in their dealings with their chain store clients were forced to commit themselves to a definite price at which they would sell dressed or ready-to-cook broilers one or often two weeks in advance of the delivery date. Since there was not sufficient margin available to allow for errors in judging the price trends, these processors attempted to purchase the bulk of their expected needs during the latter part of the week.
prior to their commitment. Many of the broilers purchased during the first part of the week were of a fill-in nature to supply the additional needs of their clients.

Some processors stated that there was a need for closer cooperation between the chain stores and their sources of supply. The chain store could advertise a special sale at such times as the processor had an anticipated surplus of broilers and thus relieve the market. Under the present system, the chain stores often plan their sales without adequate consideration of the availability of the necessary supplies of ready-to-cook broilers. This may result in broilers being processed before they have reached the proper size, or in the necessity to pay a price higher than warranted by general market conditions.

All of the processors contacted in this study bought their supplies of live broilers "on the market." They stated that there was not sufficient margin to allow them to pay more than their competition for broilers.

Role of the Processor in the Determination of Market News Quotations

The market news reporter contacted 14 of the processors included in this study (approximately 48 per cent of the sample) and requested information on the prices they paid to producers for live broilers and for other market information.
The market news reporter contacted 76.5 per cent of those processors who dressed an average of 5,000 or more broilers per week, and 8.3 per cent of the smaller processors. These contacts ranged from once a week to five times a week, with the mode being three times per week.

When the processors who were contacted by the market news reporter were asked how they arrived at the price they quoted him, 57.1 per cent replied that they quoted the price paid producers, or the farm price, and 21.4 per cent stated that their reply was based on the current market report, tempered by supply and demand conditions. Therefore 78.5 per cent of the processors reported that they quoted the "at farm" price to the market reporter. This is the expected reply to the question, since if they revealed that they quoted a price other than the farm price, they would be admitting that they were trying to manipulate the market report (consciously or unconsciously).

A few processors, 7.1 percent, reported that they gave the market reporter their opinion of what prices ought to be, and also reported their own supply and demand conditions as reflected in supplies of live broilers, and orders for ready-to-cook broilers.

There were some processors (14.4 per cent) who stated that they quoted the market news reporter the price that they
paid for live broilers, but that this was not necessarily the price paid to the producer. These processors stated that "I report the price that I pay for broilers....I tell the truth, but it may be somewhat misleading at times."

There was a general feeling among the processors that was often intimated but seldom stated that there was a considerable amount of manipulation of the market reports being attempted by quoting to the market news reporter prices other than at which the broilers were bought or sold.

The Market News Service was reported as contacting some integrated producers who were responsible for regularly selling large volumes of broilers. These producers were alleged to be quoting the market reporter prices that were higher than those actually paid by the processor. Thus a producer could report to the Market News Service that he sold his broilers for a cent or so more than he actually received, and thus attempt to raise the farm price of broilers.

The processors were also accused of manipulation by reporting prices that were either higher or lower than actually paid. Several processors claimed knowledge of broilers being purchased at prices higher than they were quoted to the market news reporter. (All such charges were unsubstantiated and no names were revealed, yet this seemed to be common knowledge among the various
The advantage of quoting a lower price would be to lower the market so that they might buy broilers more cheaply in the immediate future. The advantage in quoting a higher price is more immediate in that they might achieve a higher dressed price from the chain stores, and thus widen their operating margins.

Almost all of the processors complained that their competition (Georgia processed dressed broilers) had so depressed their market that they were operating at or below cost. A few processors remarked that since it cost the Georgia processors one and one-half to two cents per pound to ship their dressed broilers into Ohio, they were able to compete on an equitable basis and still pay their producers a cent over the Georgia mostly live broiler market quotation. The difference between profit or loss apparently depended on their relative dressing efficiency and their general overhead expenses.

Use and Value of Ohio Live Broiler Market Quotations to Ohio Processors

In response to a question regarding the adequacy of the Ohio live broiler market quotations, most processors contacted in the study were of the opinion that they were of no great value.

While the Southern Ohio-Southern Indiana live broiler market quotation is used extensively by small processors, and
is used to a moderate degree by the larger processors, the Central and the Northern Ohio reports are little used.

The small processors felt that the wide range in prices quoted on the Southern Ohio market reports was unjust and inaccurate. Many felt that either the report was being manipulated, or else the upper range of prices reported represented sales to second receivers or even third receivers, or were special lots and hence should not be reported as a farm price.

The Southern Ohio-Southern Indiana live broiler market quotation appears to be multi-modal in that three distinct price groupings are frequently present and roughly correspond to the Georgia "mostly" quotation and increases of one and two cents over this quotation. The total range of the Southern Ohio market quotation is often four to six cents, as compared to the usual spread reported by other market quotations of approximately two cents.

The small processors reported that they were forced to buy on the high range of the quotation, frequently paying either the top or a few hundred to a few thousand broilers. The Southern Ohio quotation (used by one third of the large processors contacted in this study) approximates the Georgia "mostly" live broiler market quotation plus a differential of one cent.

The processors contacted in this study preferred either a more accurate reporting of the live broiler market, with a
narrower range in the farm prices, or else using the Georgia live broiler market quotations all together.

Of the 29 processors interviewed in this study, not one used either the Central or the Northern Ohio live broiler market report in the determination of farm prices. Those who had used the Central Ohio report had changed to the Southern Ohio or the Georgia report as a basis for buying broilers. They stated that there was an insufficient volume of broilers being processed in the Central Ohio area to make a market. They estimated that a maximum of 60,000 broilers were being processed per week in Central Ohio. Those processors charged that the Columbus (Central Ohio) market was too erratic and was often too far out of line with the other live broiler markets to be of any real value as a base for buying or selling broilers.

Although a larger volume of broilers were being processed in the Cleveland area, the Northern Ohio market quotation was not used as a basis of price determination by any of the processors contacted in this study. A few processors stated that if the Northern Ohio live broiler market quotation were higher than those from other areas, due to a local shortage, they were forced to increase the differential from the Georgia "mostly" live broiler market quotation in order to secure a sufficient quantity of broilers to meet their obligations.
It was generally stated by the processors interviewed, that there was an insufficient volume of broilers being grown in Ohio to make a market. Georgia processed and marketed an average of five million broilers per week, while the 29 processors contacted in this study, market only one-half million birds per week.

The processors maintained that the Georgia live broiler market report is the meaningful one used in Ohio. While the Ohio processors may be affected by their local area reports, and thus pay a slight premium for locally produced broilers, they do not buy on the local report. Instead they increase the differential on the Georgia report for those broilers produced locally. This added cost is offset by savings in the hauling charges and the reduced shrinkage assumed by the processor.

Inadequacies of the Published Price Quotations Reported by Ohio Processors

In general, the opinions of those processors contacted in this study could be summarized by saying that the market reports published by the U.S.D.A. Federal-State Market News Service were adequate in nature and serve an important function, but

1) the market reports mailed to the processors arrive too late to be of immediate value. They are of more importance in giving the processor a feel of the market.
2) the range or spread in Southern Ohio-Southern Indiana price quotations is too wide to accurately reflect the general market conditions prevailing at the time.

3) the processors feel that the reports are easily manipulated.

4) processors feel that there is a considerable amount of second receiver pricing used in formulating the report.

5) there is an insufficient volume in the Central Ohio area to make a market, and there is too little use made of the report by poultry buyers to justify publishing a quotation for this area.

6) there is also little use made of the Northern Ohio quotation as revealed by the processors contacted in this study.

7) too few of the major reports of interest to the area carry volume-price reports.
PART IV

MARKET INFORMATION
COMPARISON OF THE OHIO AND GEORGIA LIVE BROILER MARKET QUOTATIONS

How Price Quotations are Formed

Davis\(^1\) in a report on the nature and scope of the market news service on Dairy and Poultry products stated that the purpose of the market news service is to provide unbiased information for the benefit of all users. Therefore the coverage in reporting a market must be as complete as practicable. The policy in reporting prices is to include prices for all classes and grades entering into current trading, insofar as is possible, in order that published prices will reflect actual marketing conditions. Davis also stated that since market reporting is an art and not a science, considerable leeway is given to local reporters to use their discretion in reporting the market. Thus if prices on individual lots appear to be out-of-line, or if the buyer refuses to indicate to whom he paid these prices, the reporter may omit this information from his report.

Price ranges are reported when goods of a given grade or class sell at more than one price. The reporting of price

ranges gives a complete picture of the current market situation; it avoids criticism of published prices as not being complete or accurate, and attempts to avoid "making the market", that is, reporting a price to be used solely for the purpose of providing a settlement basis between buyer and seller.

The U.S.D.A. Market News Service market reporter in Ohio was interviewed during March, 1959. This reporter was responsible for formulating the U.S.D.A. price quotations for live broilers for the Southern Ohio-Southern Indiana area. The interview was undertaken in an effort to determine the methods and procedures used by the market reporter in arriving at this quotation for live broilers.

The reporter said that he had a list of individuals that he regularly contacted. This list was composed of processors, live haulers, and other broiler handlers as well as egg dealers. Each day the reporter selected a sample of seven or eight handlers of live broilers to be contacted for information. The individuals comprising this list were rotated so that the desired information was not obtained from the same people each day. However, there were a few individuals that, because of the volume and importance of their operations, were included each day. These individuals were asked to report the number of broilers purchased at each price, and also to express their opinion of what
the broiler prices should be. This opinion was influenced by competitive conditions as well as the respondents own immediate position in the market.

The market news reporter stated that he tabulated the results of these telephone conversations and then prepared the information for publication. Accompanying the price information was a statement indicating his opinion of the market conditions prevailing in his area, as well as an estimate by the market reporter of what the price should be, in order to clear the market of all immediately available broilers.

Information was also obtained by the market news reporter on the prices paid by retailers for dressed ready-to-cook broilers. Each day a sample of the wholesalers and jobbers operating in the market area covered (in Ohio the wholesale prices of dressed, ready-to-cook broilers are reported for the Cincinnati; Columbus and Cleveland market areas) by the market report were contacted by the reporter who asked for their wholesale selling prices. This information was compiled and published in the U. S. D. A. daily market report. The processors included in this study, who stated that they were contacted by the market reporter, were asked what information they provided and how they arrived at the price they quoted to the reporter.

The processors stated that the market news reporter asked them what they paid or were willing to pay for live broilers. He
did not stipulate that the price reported should be the farm price, although he occasionally inquired whether or not it was the farm price, nor did he inquire whether or not this was a first receiver price. One processor stated that "I tell him what I paid for broilers. I tell the truth, but it may be somewhat misleading at times." This processor bought a large share of his broilers through a broker located in a large broiler growing area, and hence reported a price somewhat higher than the true farm price. Several other processors also reported that they gave the market reporter the price that they paid for broilers, but did not add that these birds were bought from a live hauler or another processor. This practice of reporting second receiver prices could partially explain the wide spread in the Southern Ohio market quotation that has occurred in recent months. (Price spreads of four and five cents have been common during the first quarter of 1959, while spreads of one and two cents, which occurred during the year studied, have not been commonly found during 1959.)

During the discussion of the market reports the processors, described the manner in which this market reporter handled the sales of broilers reported as being sold at undetermined prices. They stated that "he doesn't like these undetermined prices." Therefore he requests that the basis of sale be given to him so
that when the market information became available (prior to his deadline) he could include these sales as being concluded at definite prices, and thus avoid the appearance of undetermined prices in the price quotation, for example: If a processor bought five thousand broilers on Wednesday night with the basis of sale to be the Thursday "mostly" quotation plus one cent, this purchase would have to be reported to the market reporter as being at an undetermined price. However, the market reporter, if he knew the basis of sale, could include this purchase in the Thursday quotation as soon as the "mostly" quotation became apparent. Therefore no undetermined prices would be reported.

The Market News Service in the North Georgia area has circumvented the problem of undetermined prices by another method. This reporter publishes the "buyers offering prices and estimated volume up to 11 A.M. today, and the prices paid and reported volume for yesterday." Therefore, by lagging the producer quotation by one day, they report only transactions concluded at a definite price.

interrelationship of Ohio Live Broiler Market Quotations

The three farm price quotations for live broilers published by the U.S.D.A. Market News Service for the Northern, Central and Southern Ohio areas and the North Georgia live broiler
market quotation followed the same seasonal patterns. The
range of prices quoted for the Central Ohio and the Southern
Ohio-Southern Indiana broiler markets (Chart II) are almost
identical. The Southern Ohio live broiler market quotation
tended to fluctuate more in the daily price quotations than did
the Central Ohio live broiler market quotation (Chart III).
During the latter part of 1957 and early 1958 (November and
December of 1957 and January 1958), there did not appear to
be any distinct tendency for one market to lead the other in
price increases or decreases. However, during the remaining
portion of 1958, the Southern Ohio live broiler market quotation
appeared to lead the Central Ohio live broiler market quotation
by one day.

The high and low quotations for both of these markets
fluctuated in a like manner and at the same price level, except
for one period (June 6 to July 4) of one month when the Central
Ohio quotation for live broilers was one cent higher on both the
high and the low quotation than was the Southern Ohio farm price
quotation for live broilers.

The relationship between the Southern Ohio live broiler
market quotation and the Northern Ohio market quotation (Chart IV)
was very similar during the latter part of 1957 and the first part
of 1958. During this period the Northern Ohio quotation tended


to be more stable than the Southern Ohio quotation. During
the remainder of the period studied, the top of the range of
the reported price quotation tended to be equal or slightly higher
than the top of the Southern Ohio range. The Northern Ohio
quotation tended to fluctuate less often but as widely as the
Southern Ohio live broiler market quotation. The lower range
of the reported price quotation for this area was almost consistently
one cent above the lower range of the Southern Ohio-Southern
Indiana farm price quotations for live broilers. The Northern
Ohio range of farm price quotations had a similar relationship
to the Central Ohio quotation. Both the Northern and the Central
Ohio live broiler market quotations appear to fluctuate less often
than did the Southern Ohio quotation, but the magnitude of these
fluctuations was as great as those of the Southern Ohio live broiler
market quotations.

The three Ohio live broiler market quotations were very
similar. The top of the Southern Ohio live broiler market
quotation was also the approximate top for the Central and the
Northern Ohio live broiler market area quotations for broilers
purchased at the farm. The low range of reported prices quoted
on the Southern Ohio market report tended to be the low range of
the Central Ohio broiler quotation also, but was approximately
one cent below the bottom of the Northern Ohio areas live broiler
market quotation. The Southern Ohio quotation tended to lead the Central and Northern Ohio live broiler market quotations by approximately one day.

**Relationship of the Ohio Broiler Market Quotations to the North Georgia Broiler Market Quotation**

The Georgia "mostly" live broiler market quotation was used as a base for settlement and price determination by a large number of the processors in Ohio. Dressed or ready-to-cook broilers processed in this area were in direct competition with dressed broilers processed in Georgia and sold in Ohio. For these reasons, plus the fact that many of the growers and processors contacted in this study stated that the Georgia market effectively established the Ohio markets, the Georgia live broiler market quotation and the Georgia "mostly" quotation were used for comparison purposes.

A comparison of the Georgia mostly live broiler market quotation for broilers bought at the farm, with the Southern Ohio-Southern Indiana live broiler market quotation (Chart V) reveals that in almost every instance, the Georgia "mostly" quotation effectively reflected the low or bottom of the range of the Southern Ohio quotation. The entire range of prices quoted in the North Georgia area by the U.S.D.A. Market News Service could be contained within the range of prices quoted for
CHART V - THE GEORGIA "MOSTLY" LIVE BULLER MARKET JUDICATION AND THE RANGE OF THE FARM PRICE JUDICATION FOR THE SOUTHERN OHIO MARKET AREA, NOVEMBER 1, 1957 TO OCTOBER 31, 1958

the Southern Ohio market area.

The Georgia live broiler market quotation, as previously discussed, contains the buyers offerings and reported volume up to 11 A.M. and the prices paid and reported volume for yesterday. Thus the prices that the producers receive for live broilers are lagged one day in order to avoid reporting them as undetermined prices. Prior to the initiation of this practice a large percentage of the Georgia broilers were reported as being sold at undetermined prices. The Federal-State Market News Service in Ohio ceased to report these lagged prices early in 1959, and only reports the current buyers offerings and reported volumes of broilers at each price (although the Georgia market reporter continues to report the lagged prices).

The percentage of the intercompany sales reported by the Market News Service for the Georgia broiler market represent a substantial proportion of the broilers sold (up to 50 to 60 per cent of all broilers reported).

When the Georgia "mostly" broiler market quotation was lagged one day, almost every fluctuation was mirrored in the Southern Ohio quotation. The majority of the price fluctuations coincide with the low quotation, however those fluctuations that were not reflected in the bottom of the range, were reflected in the top of the range of reported prices.
Since the fluctuations of the Georgia live broiler market quotation led those of the Southern Ohio-Southern Indiana market area quotation, it was probable that the prices quoted in the Georgia live broiler market report were very influential in determining the prices to be paid in the Southern Ohio area. Reports from the producers and processors contacted in this study indicated that a substantial volume of the broilers processed in Ohio were purchased on the basis of the Georgia report. The producers and processors stated that they thought that the Georgia report determined the Ohio quotations. The fact that Georgia's production of broilers was more than twelve-fold that of Ohio tends to lend support to the premise that the live broiler price quotations reported for the North Georgia area (the nation's number one broiler area) were an important factor in price determination in other broiler production areas. This premise was further supported by the fact that over 60 per cent of Georgia's total broiler production was sold outside the state, and chiefly in the North Central States.

In the previous section dealing with the interrelationships of the three Ohio market quotations for live broilers, it was stated that these market quotations were very similar. Although the Central and Northern Ohio market area quotations tended to be more stable and fluctuate less often than the Southern Ohio
quotations, they followed the Southern Ohio quotations for live broilers very closely. When these market quotations were compared to the Georgia mostly live broiler market quotations, the comparisons were substantially similar.

The Central Ohio live broiler market quotation tended to lag approximately one or two days behind the North Georgia quotation (Chart VI). During the late fall and early winter (a period of generally low prices), the Central Ohio market area quotation lagged one day, and during the spring and early summer months (the high price period), the quotation lagged as much as three days, while during the late summer and early fall (prices are generally declining) the quotation appeared to lag about two days behind the North Georgia quotation for live broilers.

The Northern Ohio market area quotation for live broilers tended to follow the Georgia quotation when one was lagged by two days (Chart VII). This lag seemed consistent regardless of the season of the year (or the price level) in contrast with the Central Ohio quotation. The bottom of the range of price quotations for the Northern Ohio area tended to remain about one cent above the Georgia "mostly" quotation. This could be partially explained by the fact that it costs the processors in the Georgia area approximately one and one-half to two cents per pound to ship or truck dressed broilers into the Northern
CHART VI - THE GEORGIA "MOSTLY" LIVE BROILER MARKET QUOTATION AND THE RANGE OF THE FARM PRICE QUOTATION FOR THE CENTRAL OHIO MARKET AREA, NOVEMBER 1, 1957 TO OCTOBER 31, 1958

Ohio area. This indicates the degree of control the Georgia broiler industry may be able to exercise over both the live and the dressed prices of broilers in Ohio. These prices tended to be held at such a level that broilers processed in Ohio were sold to wholesalers or retailers at the same price that broilers processed in Georgia were quoted to these same retailers. For example; if broilers could be purchased at the farm in Georgia for 17 cents per pound, then their meat cost (based on a yield of 73 per cent) would be 23.28 cents per pound. If their average costs of operation were six cents, then their wholesale selling costs in Georgia would be 29.28 cents per pound. The transportation charge of approximately one and one-half cents per pound must be added to this figure to yield their wholesale selling price in Northern Ohio. This price was 30.78 cents per pound. The processors selling in the Northern Ohio area must be able to process and sell chickens for 30.78 cents per pound if they were to be able to sell their broilers to the chain stores and large independent retailers. In order to arrive at a wholesale selling price of 30.78 cents per pound they must be able to buy broilers at a maximum of 18 cents per pound. (30.78 less 6 cents operating cost equals 24.78 or their meat cost. Their live price is determined by multiplying their meat cost by their per cent yield, 24.78 X 0.73 equals 18.09 cents.)

1These figures are approximations only and will vary with the efficiency with which the various processors are able to operate.
If a processor can average a yield of higher than 73 per cent, or operate on a margin of less than six cents per pound, he will be able to pay more for broilers. If a processor does not sell his broilers in direct competition with those processed in Georgia, and other broiler areas, then his pricing formula can be more flexible.

If on the other hand, a Georgia processor can obtain (through bargaining with the retailers in the North Central States) a price of 30.78 cents per pound of dressed broiler, he can then calculate the maximum price that he can pay at the farm to Georgia broiler growers (which would be approximately 17 cents in this example). If this broiler processor also controls the growing operation, he can report the sale of these live broilers as an inter-company sale with a book value of 17 cents. This price is reported by the market news reporter and becomes a part of the market quotation.

Instead of the Georgia live broiler price quotation determining the Ohio live and dressed prices, it may be the case that the

\[ \text{Georgia sells approximately 60 per cent of the total number of broilers produced in the North Central States area. The chain stores and large independent retailers are reported to sell approximately 90 per cent of all of the dressed broilers produced in the United States. Therefore these retailers are in a reasonably strong bargaining position when dealing with their sources of supply.} \]
retailers in the North Central States are determining the Georgia live price, which in turn partially determines the Ohio live broiler market quotation.

**Origin of Receipts of Live Poultry Received at Cincinnati and Cleveland**

Ohio, a deficit broiler production state, has a population of 9.3 million people who consume approximately 363 million pounds of chicken or approximately 92 million live broilers. The total number of broilers produced in Ohio during 1957 was 17.6 million and during 1958 it was estimated that 18.5 million broilers were produced. Therefore Ohio must import a large number of live broilers from neighboring states (Table 21). The movement of broilers either in dressed ready-to-cook or in the live form from one state to another or from one area to another tended to keep the prices paid for live broilers in each of these broiler areas closely related.

The above table shows the sources of live broilers that were shipped or trucked into the Cincinnati and the Cleveland market areas. Since the majority of the broilers processed in Ohio originate outside of the state and since these broilers are competing directly with broilers grown in the State of Ohio, they have a major effect on the determination of the prices to be paid to Ohio broiler growers. The data obtained from the processors
### TABLE 21

**ORIGIN OF RECEIPTS OF LIVE BROILERS RECEIVED AT CINCINNATI AND CLEVELAND OHIO - 1957**

(Net pounds - in thousands)

<table>
<thead>
<tr>
<th>Supply Area</th>
<th>Cincinnati</th>
<th>Cleveland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>6,567</td>
<td>3,170</td>
</tr>
<tr>
<td>Kentucky</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Ohio</td>
<td>8,637</td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>2,203</td>
<td></td>
</tr>
</tbody>
</table>


Contacted in this study (Table 20) indicates that the processors buy a large percentage (approximately 60 per cent) of their broilers from broiler growers located in other states. The processors located in Cleveland and Cincinnati were not included in this study since they were numerous and small in size. Therefore the data in Table 21 does not include the purchases of live broilers made by the processors contacted in this study, or those located outside of these metropolitan areas.
RELATIONSHIP OF OHIO MARKET QUOTATIONS
FOR LIVE BROILERS TO THE PRICES RECEIVED
BY BROILER GROWERS IN OHIO

The relationship of the Southern Ohio farm price quotations for live broilers to the prices reported by Ohio broiler growers for broilers sold on the quotation are shown in Chart VIII. This chart shows that most of the prices reported by growers were included in the range of the price quotation published by the U. S. D. A. Market News Service. Since some broilers were sold on the basis of the previous Friday's quotation, and since there might be some error in the reported date of the sale, the majority of the prices not included within the range of quoted prices could reasonably be accounted for. However there were a few prices which deviated markedly from the range of the price quotation. These prices were approximately evenly divided above and below the range. Some of the prices occurring below the reported range could represent prices paid for off-grade broilers (broilers that are bruised at the farm or have poor feathering or are not in condition). The prices that were markedly above the quotation could represent prices paid for special lots of broilers or prices paid for broilers that were grown on a contract stipulating a
CHART V—THE SOUTHERN OHIO FARM PRICE QUOTATION FOR LIVE BROILERS AND THE PRICES REPORTED BY BROILER GROWERS IN OHIO FOR BROILERS SOLD ON THAT MARKET QUOTATION, NOVEMBER 1, 1957 TO OCTOBER 31, 1958

certain price. These special lots may be either heavier than average broilers or represent the efforts of a processor to fill his orders of dressed broilers.

The prices reported by producers selling on the Central Ohio live broiler market quotation were treated in a similar manner (Chart IX). Although only a few prices were reported, all but one of these were or could reasonably be contained within the range of price quotations published in the market report.

The relationship of the Northern Ohio farm price quotation for live broilers to the prices reported by broiler growers in Ohio who sold on that market quotation is shown in Chart X. This price quotation closely parallels the other Ohio market quotations. The chart shows that there are approximately one-third of the reported prices that are not included in the price quotation. This tends to substantiate a previous conclusion that producers living in the Northeastern section of Ohio and those selling on the Northern Ohio live broiler market receive significantly more for their broilers than do producers living in other areas.

The prices reported by producers that were markedly higher than the top of the Northern Ohio quotation are difficult to explain. There are only a few large processors in this area, but there are numerous small processors operating in the Cleveland area. The large processors, who were contacted by the market news reporter, report that they were buying broilers
CHART IX - THE CENTRAL OHIO FARM PRICE QUOTATION FOR LIVE BROILERS AND THE PRICES REPORTED BY BROILER GROWERS IN OHIO FOR BROILERS SOLD ON THAT MARKET QUOTATION, NOVEMBER 1, 1957 TO OCTOBER 31, 1958

CHART X - THE NORTHERN OHIO FARM PRICE JETATION FOR LIVE BROILERS AND THE PRICES COLLECTED BY BROILERS GROWERS IN OHIO FOR BROILERS SOLD ON THAT MARKET JETATION, NOVEMBER 1, 1957 TO OCTOBER 31, 1958

Cents per pound

with prices based on the Georgia quotation, tempered by the prevailing supply and demand situation in their area. This, perhaps, may explain the similarity between the Northern Ohio and the Georgia live broiler market quotations. The small processors contacted in the study reported that they were forced to pay a premium over the top Northern Ohio broiler market quotation in order to obtain the necessary supplies of live broilers. Therefore those prices which were markedly different from the published quotation could represent sales to these small processors, contract sales to small processors and retail-processors, and finally sales to processors for either special sizes or services such as selling in small lots, or sales to processors whose supplies of live broilers were less than their commitments for dressed broilers.

The prices reported by growers for broilers sold on the basis of the Georgia broiler market quotations are shown in Chart XI. Since the majority of these prices are above the Georgia range of published prices, it was evident that they were purchased at a premium over the Georgia quotation. Those few lots reported as being sold for less than the bottom of the range of reported prices were probably prices paid for off-grade broilers.
Since the majority of the prices reported for broilers being sold on the Georgia market were above the top of the range of reported prices, the hypotheses was proposed that the majority of these prices could be accounted for by a range of prices composed of the Georgia "mostly" quotation as the base or bottom of the range, and three cents over the Georgia "mostly" as the top of the range. Chart XII shows that this range did include the majority of the prices reported for broilers sold on the Georgia live broiler market quotation.

It was further proposed that this range of prices would include a majority of all the prices reported by producers in this study (Chart XIII). This chart included the prices reported by independent broiler growers and the "book value" prices reported by integrated broiler growers for broilers sold on the various market quotations, as well as a few prices reported by integrated broiler growers whose production and marketing contracts specify a minimum or an absolute price guarantee. This chart shows that all but a very few of the reported prices were included within this proposed range of prices. The majority of the prices not included within this range could be explained on the basis previously discussed.
CHART A-11 — THE PRICES REPORTED BY UNIQE MUNITER GROWERS AND THE RANGE OF THE GLÆGIAL "RUSTY" JUXTAPOSITION PLUS THREE CENTS, - NOVEMBER 1, 1937 TO OCTOBER 31, 1938

THE RELATIONSHIP OF THE OHIO LIVE BROILER MARKET QUOTATIONS TO THE WHOLESALE READY-TO-COOK PRICES OF BROILERS TO RETAILERS

Southern Ohio Live - Cincinnati
Wholesale Quotations

The relationship of the Southern Ohio live broiler market quotations to the wholesale ready-to-cook prices to retailers in Cincinnati is shown in Chart XIV. This chart reveals that the wholesale prices of broilers to retailers reported by the U.S.D.A. Market News Service were very closely related to the live broiler market quotations. The spread in price between the dressed broiler price and the live broiler price corresponded closely to the costs of processing and marketing these broilers, or approximately 12 cents per pound. The wholesale prices of dressed ready-to-cook broilers exhibit fewer minor fluctuations than did the live broiler prices. The practice of buying a sufficient quantity of broilers during the latter part of the week in anticipation of the supply of broilers needed the following week to fill the regular orders for dressed broilers partially explains the absence of the short term
fluctuations that were found in live broiler prices. The close relationship between the wholesale ready-to-cook prices and the live broiler prices tended to lend support to the hypothesis that the prices that a processor was able to pay for live broilers were largely determined by the prices that he was able to obtain for these broilers when sold on the dressed basis, at the wholesale level of trade. Thus the pricing of broilers appeared to be determined, not by the cost of production, processing and distribution, but by the wholesale prices to retailers. The wholesale price was largely determined by the prices that the retailer could obtain for dressed poultry. The range in the wholesale ready-to-cook prices to retailers was approximately three cents per pound during the late fall of 1957 and the early winter of 1958, and then narrowed to two cents, with occasional spreads of only one cent, during the remainder of the period studied.

Central Ohio Live - Columbus Wholesale Quotations

The relationship of the Central Ohio live broiler market quotations to the wholesale ready-to-cook prices of dressed broilers to retailers in Columbus is shown in Chart XV. The live prices as previously discussed were similar to those quoted in the U. S. D. A. Market News Service for broilers sold in the Southern Ohio and North Georgia broiler market areas. The
dressed broiler prices for the Columbus area exhibited much wider range and more violent fluctuations than those shown by the Cincinnati wholesale dressed prices (Chart XIV). These prices corresponded closely to the live broiler prices, but the spread between the wholesale dressed price and the live farm price of broilers was greater than that of any other market area studied, and averaged between 16 and 21 cents (16 cents between the bottom and 21 cents between the top ranges of reported prices). If those processors buying their supplies of broilers on the basis of the Central Ohio live broiler market quotation paid producers either the top price or a premium over the top quotation, then the margin between the top live price and the bottom wholesale price for dressed ready-to-cook broilers would be 14 or 15 cents, or more comparable to the margin realized by other processors. The analysis of the relationship of the prices paid to producers to the Central Ohio live broiler market quotations revealed that the majority of the broilers, as judged by the prices reported by producers selling on this market quotation, were bought on the top Central Ohio live broiler market quotation.

The spread between the bottom and the top of the reported range of wholesale prices averages between five and six cents. This spread was more than double that reported for either Cincinnati or the Cleveland wholesale prices of dressed broilers.
sold to retailers. This spread may be partially explained by the fact that the Market News Service of the U. S. D. A. is located in Columbus, Ohio, in the Central Ohio live broiler market area. There is a possibility that more of the smaller processors are contacted in this market area than in the other, more distant, area. The smaller processors tend to sell to small independent retailers which are not in direct price competition with the large chain stores present in this area. Neither are these small processors directly in competition with dressed broilers being shipped in from the North Georgia area. The small processors provide special services to these retailers that are unattainable from the large processors. For example the small processors will sell in very small quantities and deliver these broilers to the retailers store. These special marketing services increase the costs of the small processor, and therefore the prices that they were able to charge for dressed broiler tended to be higher than those charged by larger processors. If the above assumptions are true, and the market reporter did contact a larger number of local small retailers then the margin between the top and bottom of the wholesale quotation for dressed broilers sold to retailers could be partially explained.

The processors contacted in this study, who were dealing in the Central Ohio area, estimated that there were less than
60,000 live broilers being processed in this market area by Ohio processors. For this reason they felt that there was not sufficient volume of business being transacted, and the processors operating in the area were not large enough to make a market or to warrant quoting a market for the Central Ohio area. Less than two per cent of the respondents replying to the mailed questionnaire replied that they were using the Central Ohio market quotation for live broilers as a basis for price determination.

Northern Ohio Live - Cleveland Wholesale Quotations

Chart XVI shows the relationship of the Northern Ohio live broiler market quotation to the wholesale quotation for dressed ready-to-cook broiler prices to retailers in the Cleveland area. This chart is very similar to Chart XIV showing the relationship of Southern Ohio live broiler market quotations to the wholesale quotations for ready-to-cook broilers sold to retailers in Cincinnati. However the spread between the live and dressed wholesale prices tended to be about two cents greater. This increased spread (14 to 15 cents total) can be partially explained by the fact that the transportation costs for shipping broilers from the Southern Ohio area or from the North Georgia area were approximately one and two cents respectively. A large volume of poultry was shipped or trucked into the Cleveland
market by processors located in Georgia and Pennsylvania (Figure 6), and to a lesser extent by processors located in Tennessee, Maryland and Kentucky. The fact that over two-thirds of the receipts of poultry in the Cleveland market area originate in areas outside of Ohio may partially explain the higher wholesale prices reported by retailers for dressed ready-to-cook broilers. This spread may be further explained by the type of processor contacted by the market reporter, their selling practices and the competitive situation. If he contacted the smaller processors, the prices that small retailers paid for dressed broilers would be higher than those paid by the large national or regional grocery chains who buy from the large processors. These chain stores, because of the large volume of broilers sold through their stores are able to exert considerable influence in the determination of the prices that they pay for dressed broilers.

Origin of Receipts of Dressed Ready-to-Cook Poultry Received at Cincinnati and Cleveland from Major Broiler Producing Areas

Figure 6 shows the areas from which the major supplies of dressed broilers are transported to the Cleveland market. The North Georgia market area supplied approximately one-half of the total receipts of dressed broilers in the Cleveland area.
RECEIPTS OF PROCESSED POULTRY AT CLEVELAND FROM MAJOR BROILER PRODUCING STATES, BY ORIGIN, 1957
(Gross pounds - in thousands)


FIGURE 6
The effect that the Georgia market would have on the prices paid to processors and producers would tend to keep the two markets closely aligned, and separated by the amount of the transportation charge between Georgia and Cleveland.

A large volume of broilers produced and processed in Pennsylvania market area are also received in the Cleveland market area. These broilers would also exert an influence on the pricing of both live and dressed broilers.

Figure 7 shows the major sources of dressed broilers shipped or trucked into the Cincinnati market from broiler producing areas. Although Georgia transports a large volume of broilers into this market, the largest volume of dressed broilers reported to be shipped into the Cincinnati market originate in Kentucky. A lesser, but important percentage of the total receipts of dressed broilers reported originated in the West Virginia broiler producing area. The influence of these imports of broilers is also of major importance in the determination of prices to be paid to both producers and processors. Ohio produced a minor share of the total number of broilers moving through the Cincinnati market area, although a large percentage of Ohio's production of live broilers was grown in the southern half of the state. The trend exhibited by these figures (Figures 6 and 7) revealed that broilers tended to move from the south to the
RECEIPTS OF PROCESSED POULTRY AT CINCINNATI FROM MAJOR BROILER PRODUCING STATES, BY ORIGIN, 1957
(Gross pounds - in thousands)


FIGURE 7
north, and that very few of the broilers produced appeared to move in the opposite direction.

Figures 6 and 7 underestimate the amount of dressed broilers that are brought into Ohio. These figures deal only with the two major cities in Ohio (Cincinnati and Cleveland). However, the processors contacted in this study were not located in either of these two areas. These processors deal, to a limited degree, in dressed broilers purchased from processing plants located outside of the State of Ohio. Often it is less expensive to purchase dressed broilers to fill an order than it is to pay inordinately high live broiler prices. In order to provide their clients with broilers they buy dressed broilers and resell them often at no increase in price.
PART V

SUMMARY AND CONCLUSIONS
SUMMARY AND CONCLUSIONS

A study of the influence of broiler market quotations and the methods used in the marketing of broilers on the prices received by Ohio broiler growers was instituted in the fall of 1958.

A personal interview study was made of a random sample of the broiler growers in Meigs County, Ohio, in cooperation with Rural Sociologists from the Department of Agricultural Economics and Rural Sociology. Meigs County was the largest broiler producing county in Ohio, and was considered to be the most highly integrated.

During the fall of 1958 and the winter of 1959, a mailed questionnaire survey was made of all of the known broiler growers in Ohio, with the exception of those residing in Meigs County. A total of 530 questionnaires were mailed to these growers, and a return of 60 percent was realized. However, only 26 per cent of the total number of questionnaires were usable, the remaining 34 per cent were replies from former broiler producers who had discontinued growing broilers. The data supplied by the respondents, including that obtained in the Meigs County study was analyzed.
The results of the analysis indicated that producers residing in the Northeastern section of Ohio, and those selling broilers at prices based on the Northern Ohio market quotation received a significantly higher price for their broilers than did the other producers included in this study. This was largely as a result of the transportation charges between broiler production areas and the northern half of Ohio. The analysis also revealed that producers utilizing production contracts as a means of financing their broiler production operations received a "book value" price for their broilers that was not significantly different from the prices received by independent producers. The majority of the broilers sold in Ohio are purchased on the basis of a market report. Therefore, unless a producer lived in the Northeastern section of Ohio, or sold on the Northern Ohio live broiler market, he could not obtain a higher price for live broilers. Neither the average number of broilers produced nor the capacity of the processor to whom the broilers were sold had any significant affect on the prices received by producers.

The respondents indicated that they tended to sell regularly to one producer and that the majority of the producers received either one or less than one bid for their broilers. These broiler growers received an average of two different sources of market
information, but felt that they were only "adequate" as an accurate reflection of market conditions. Most of the respondents either stated that there was no way for them to measure the adequacy of these market reports, or they did not reply to this question. The integrated broiler growers responded similarly to these questions.

The majority of the integrated broiler growers accepted new production contracts during 1956 and 1957. The growers accepting contracts in 1956 had previously had a contract, while those accepting a production contract in 1957 had formerly been independent growers, or had recently begun producing broilers.

A sample of the processors in Ohio were personally interviewed to determine their use of the market information and their methods of pricing broilers. A total of 29 completed interviews were obtained. These processors ranged in size from those having an average weekly production of less than 2,000 broilers to those who averaged more than 60,000 broilers per week. These firms processed approximately 30 million broilers per year. Of this number, 40 per cent or 12 million broilers were produced in Ohio. This represents approximately 68 per cent of the total production of broilers in Ohio. The remaining 60 per cent of the broilers processed by these processors were grown in Indiana, Kentucky, West Virginia and Pennsylvania.
Approximately half of these processors were contacted by the Market News Service, but this number included all of the large processors contacted in this study except one. Slightly more than 78 per cent of these processors replied that they quoted the market news reporter the price that they paid for broilers at the farm; seven per cent stated that they gave the reporter an opinion and 14 per cent stated that while they reported what they paid for broilers, this price was not necessarily the farm price, since they purchased broilers from live haulers and brokers.

All of the processors contacted in the study stated that they purchased broilers on the basis of the price quotations published by the U. S. D. A. Market News Service. These price quotations were largely determined by the Georgia "mostly" live broiler market. The only Ohio market used to any degree by processors was the Southern Ohio-Southern Indiana live broiler market report. Little or no use was made of the Central and Northern Ohio broiler market quotations.

The small processors (under 5,000 broilers per week) contacted in this study stated that they had to pay a premium over the "mostly" quotation or pay the top price quoted in a certain market area in order to buy broilers. (The producers who reported that they sold to processors with an average
weekly capacity of 5,000 broilers or less did not receive a significantly higher price for their broilers.) The small processors stated that the imports of dressed broilers had increased the competitive pressures placed upon them, but since they did not sell to large chain stores, and other large retailers, they were able to maintain a more flexible pricing policy.

The large processors contacted in this study tended to use the Georgia "mostly" live broiler market quotation as a base for settlement and price determination. They stated that they were under severe competitive pressure from Georgia processors, and that the prices that they paid for live broilers were largely determined by the Georgia market. Those processors reported that the prices received for dressed broilers were determined by the prices that Georgia processors would accept or charge for dressed broilers, delivered to the store warehouses. These processors also stated that, unless a processor had birds committed to him either under a marketing agreement or under a production contract, it was impossible to buy broilers at the published "mostly" quotation for live broilers, and that they were forced to pay a premium in order to obtain the needed broilers. Many processors found it more profitable to buy dressed broilers than to pay a higher price for live broilers.
The processors contacted in this study stated that there was an insufficient volume of broilers being processed in the state of Ohio to make a market, and that the Georgia live broiler market report was the only meaningful one used in Ohio. They reported that they knew of no one who was using either the Northern Ohio or the Central Ohio market report, and that those who were using the Southern Ohio report wanted to use the Georgia market report. They said that they must use the same bases for buying broilers as did their competitors.

The Ohio market quotations were compared and their interrelationships studied. These market quotations were very similar, and followed the same seasonal trends as did the Georgia live broiler market quotation. The Northern Ohio quotations tended to be one cent higher than did those for Southern Ohio. This can be explained by the amount of the transportation charge for broilers shipped from the Southern into the Northern Ohio area.

The Georgia "mostly" live broiler market quotation was used as a base for comparison purposes, and the relationships between the Georgia "mostly" and the Ohio live broiler market quotations were studied. A very close degree of relationship was observed between these markets. The Georgia "mostly" live broiler market quotation was accurately reflected in the
low quotations or the bottom of the range of prices quoted for the Southern Ohio Market Area. This relationship was repeated for the other two Ohio market reports, with similar results. However, the bottom range of the Northern Ohio market report tended to average approximately one cent higher than the Georgia "mostly" live broiler market quotation.

Almost all of the prices reported by the broiler growers in Ohio included in this study can be explained by a three cent differential from the Georgia "mostly" live broiler market quotation. Each of the Ohio quotations cannot fully explain those prices reported by producers to be determined by that market report.

There was a very distinct relationship between the live broiler prices and the wholesale ready-to-cook prices of dressed broilers sold to retailers. There was a constant spread of 12 to 13 cents between the two quotations for the Southern Ohio market area (Cincinnati). This is explained by the cost of processing the broilers (including the shrinkage from live to a dressed basis) which averages approximately 12 to 13 cents. A similar relationship was observed between the live and dressed quotations published for Central and Northern Ohio by the U.S.D.A. Market News Service. The wider margins can be explained in a similar manner to that used above, however there is a transportation
charge of one or two cents per pound for dressed broilers being transported from Georgia or other major broiler production areas that must be considered in the explanation of this margin. This difference in the transportation charge between different areas accounts for a part of the previously unexplained differences in the observed margins between the live and the dressed prices.

The pricing of broilers appears to be determined by the prices that retailers, chiefly large chain stores (who handle approximately 90 per cent of all broilers sold), are able to secure for dressed broilers.

**Recommendations for Improving the Market News Reports**

1) Reduce the number of reports published so that only the pertinent major broiler area reports are widely circulated (especially eliminate reports similar to that published in the Central Ohio area).

2) Report all major broiler markets on a volume-price basis, and explain the low and high portions of the range so that producers and processors will know the true market value of their birds.

3) Specifically request first receiver prices of broilers and occasionally check sources of information for accuracy.

4) Check the prices quoted to the market news reporter and eliminate those of doubtful authenticity.

5) Broadcast the market news report daily at some specified time (11:30 A.M. is suggested).
6) Secure price quotations only from processors having a volume of over 20,000 broilers per week. Those having smaller volumes generally report that they have to pay a premium in order to obtain sufficient supplies of live broilers to fill their needs.

7) Report a dressed ready-to-cook market daily for the major broiler areas. Include volume-price data on the basis of wholesale prices charged by processors and paid by retailers. Since a very small minority of live broilers are actually bought by bargaining the price quotation thus established has doubtful representativeness of the true market conditions. Almost every truckload of dressed broilers were sold at a negotiated price and thus is more apt to reflect the broad supply and demand conditions actually existing in the market.
APPENDIX
NOTE: If you have not grown broilers during the last year, please disregard the following questions and return the Questionnaire to us in the enclosed postage-free envelope.

1. How many broilers did you sell during the past twelve months (Nov. 1, 1957 to Oct. 31, 1958)?

2. How many lots of broilers did you grow during the past twelve months?

3. What were the dates (month and day) between Nov. 1, 1957 and Oct. 31, 1958 on which you sold your last four lots of broilers?
   1st Lot_____, 2nd Lot_____, 3rd Lot_____, 4th Lot_____.

4. What price did you receive for each?
   1st Lot_____, 2nd Lot_____, 3rd Lot_____, 4th Lot_____.

5. Who was the buyer of each of these lots?
   1st Lot_____, 2nd Lot_____, 3rd Lot_____, 4th Lot_____.

   How were the prices determined?

6. If you are on a contract - What is the price specified in the contract (e.g. - 10 cents per bird or 2 cents per pound; etc)?

   ________________

7. If you are not on a contract:
   a. How many potential buyers did you contact before deciding to sell your birds?
      ________________

   b. What market report is used as your reference in bargaining or determining a price at which the birds will be sold?
      ________________

   c. How many actual bids or offers did you obtain before selling your broilers?
      ________________
8. Where do you get your market and price information? Please check below.

   a. U.S.D.A. mailed news reports
e. Newspapers
b. Trade magazines
c. Privately mailed reports
d. Buyers
e. U.S.D.A. mailed now reports
f. Other growers
g. Radio or T.V.
h. Servicemen
i. Other (please specify)

How adequate is the information contained in the market report?

<p>| 9. What was the total live weight of broilers sold for each of | Nov, 1, 1957-Oct, 31, 1958 |</p>
<table>
<thead>
<tr>
<th>the last four lots?</th>
<th>1st Lot</th>
<th>2nd Lot</th>
<th>3rd Lot</th>
<th>4th Lot</th>
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</thead>
<tbody>
<tr>
<td>10. What was the average weight per bird?</td>
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<td>11. What was the total amount of feed used for each lot?</td>
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<td>12. What was the total cost of this feed used for each lot?</td>
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<tr>
<td>13. What was the feed conversion for each lot sold?</td>
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<tr>
<td>14. What was the percent livability for each lot sold?</td>
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<tr>
<td>15. How many chickens did you sell in each of the last four lots?</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>16. What was the total cost of the chicks started for each lot?</td>
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<td></td>
</tr>
<tr>
<td>17. What were your Out-of-Pocket costs for each of the last four lots sold?</td>
<td>1st Lot</td>
<td>2nd Lot</td>
<td>3rd Lot</td>
<td>4th Lot</td>
</tr>
<tr>
<td>Heating fuel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other medicine and drugs</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
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<tr>
<td>Grit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Labor hired------------------ | 1st Lot 2nd Lot 3rd Lot 4th Lot
Other costs (specify)--------

17a. What is the average cost per lot of broilers, for the following:

18. What is your total investment in your broiler enterprise?

19. How much family labor is contributed - average number of man
    hours per week?

20. What is your estimated building cost?

21. What is your estimated equipment cost?

22. Have you ever grown broilers on a contract with a Feed Dealer,
    Hatcheryman, or Processor, or other financing organization?

23. When were you first on a contract?

24. Are you presently on a contract? Yes ( ) No ( ); With whom
    are you on contract?

25. Is it Verbal or Written contract?

26. Have you had other contracts? Yes ( ); No ( ); With whom were
    you on contract?

27. Under your present contract: (please check)

   A. Who supplies the following:  B. Who decides the following:
      Grower Contractor       Grower Contr.
   a. Buildings
   b. Equipment
   c. Labor
   d. Litter
   e. Feed
   f. Chicks
   g. Medicine & Drugs
   h. Veterinary Service
   i. Heating fuel
   j. Electricity
   k. Catching labor
   l. Insurance
   m. Interest

   a. Type of chicks
   b. Hatchery where
      chicks obtained
   c. Kind of feed
   d. Type of equip-
      ment and build-
      ings
   e. Management pro-
      cedures (feeders,
      floor and water
      space, etc.)
   f. Where marketed
   g. When marketed

-3-
28. Who owns the broilers?

29. Is there a profit sharing arrangement? If so, what is the basis for sharing the profit?

30. What market report is used in calculating the profit?

31. What differential from the market quotation is used in calculating the profit? (For example; 1 cent above the Georgia mostly, but not to exceed the tops.)

32. How well do you feel that you are doing under contract? Are you earning enough to amortize your investment?
NOTE: If you have not grown broilers during the last year, please disregard the following questions and return the Questionnaire to us in the enclosed postage-free envelope.

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   - 1st Lot
   - 2nd Lot
   - 3rd Lot
   - 4th Lot

4. What price did you receive for each lot sold?
   - 1st Lot
   - 2nd Lot
   - 3rd Lot
   - 4th Lot

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   - 1st Lot
   - 2nd Lot
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   - 4th Lot

How were the prices determined?

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   d. Buyers--
   e. Newspapers--
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   h. Servicemen--
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13. Have you had other contracts? Yes ( ); No ( ); With whom were you on contract?

14. Under your present contract (please check)
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   B. Who decides the following:

<table>
<thead>
<tr>
<th>Grower</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Buildings</td>
<td>a. Type of chicks</td>
</tr>
<tr>
<td>b. Equipment</td>
<td>b. Hatchery where chicks obtained</td>
</tr>
<tr>
<td>c. Labor</td>
<td>c. Kind of feed</td>
</tr>
<tr>
<td>d. Litter</td>
<td>d. Type of equipment and buildings</td>
</tr>
<tr>
<td>e. Feed</td>
<td>e. Management procedures (feeder, floor and water space)</td>
</tr>
<tr>
<td>f. Chicks</td>
<td>f. Where marketed</td>
</tr>
<tr>
<td>g. Med. &amp; Drugs</td>
<td>g. When marketed</td>
</tr>
<tr>
<td>h. Veterinary Service</td>
<td></td>
</tr>
<tr>
<td>i. Heating fuel</td>
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<td>j. Electricity</td>
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<td>m. Interest</td>
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BIBLIOGRAPHY
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I, William Richard Luckham, was born in St. Williams Ontario, Canada, June 9, 1931. I received my secondary education in the public schools of Simcoe, Ontario, Canada. My undergraduate training was taken at the Ontario Agricultural College at Guelph, which granted me the Bachelor of Science in Agriculture degree in 1955. From the Ohio State University, Columbus, Ohio, I received the Master of Science degree in 1957. While in residence there, I was a research assistant under the direction of Professor Raymond E. Cray during the year 1956-57, specializing in Poultry Marketing. I was re-appointed as a research assistant in July, 1957, and continued to specialize in Poultry Marketing under the direction of Dr. A. R. Winter and Dr. P. C. Clayton. I held this position for two years while completing the requirements for the degree Doctor of Philosophy.