

LANDMARK, INC. (B)
A Case Study of a
Regional Farm Cooperative

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April, 1972

FOREWARD

This case study was developed as a vehicle for class exposure to and discussion of actual management problems. It is not intended to illustrate either effective and ineffective management practices. Nor should this case be viewed in any sense as a research report. Rather, the intent is to provide the actual information that was available to a firm's management on a particular problem situation.

LANDMARK, INC. (B)

As the manager of the young and growing foods division of Landmark, Inc., a regional farm cooperative headquartered in Columbus, Ohio, John Schmidt was enthusiastic about the growth and future potential of the division, yet concerned about several critical decisions confronting him in 1971. With strong support from their Board of Directors, Landmark had moved rather rapidly into food marketing during the past five years. By 1971, the cooperative had become a major factor in egg processing and marketing in Ohio; was selling and distributing some fresh poultry; and held a 51% interest in two Farm and Dairy Stores--a possible convenience store chain in the embryonic stage. Since the Farm and Dairy Stores were managed by the minority partner, John's division was largely concerned about marketing poultry products, particularly eggs.

Landmark's entrance into egg marketing had come largely via acquisition of other cooperatives. Because of the rate of acquisitions and because several organizations were involved, John felt his division needed time to digest and evaluate their egg operations. However, because of the differences in the accounting systems of the various cooperatives acquired, it was difficult to merge operating and financial reports. In many cases, the data that John felt was needed for adequate controls and planning were just not available. Still he knew that several decisions had to be made in the near future; and that his boss, Bill McGreevy would be expecting some information of the intermediate range direction and strategy for the egg marketing operations. Should they expand further? Should some of their plants and distribution centers be closed or relocated? On what type of customers should they concentrate? What was the "best" basis for pricing eggs at different points in the marketing channel? Could they continue to serve small egg producers who were members of the cooperatives and yet be as efficient as their competitors? These were some of the decisions pressing upon John and his staff.

Background

In the middle fifties, several independent egg processing and marketing cooperatives operated within the state of Ohio. Due to their small size, potential scale economies were not realized. Considerable difficulty was also experienced in trying to balance the supply of eggs from producers (which fluctuated) with the needs of customers. Realizing their individual problems, six of these cooperatives formed a federated egg marketing coopera-

This case was prepared by Bruce W. Marion, Associate Professor of Agricultural Economics, The Ohio State University, with the assistance of Eric Brown, Research Assistant. It was developed as a basis for class discussion and is not intended to illustrate either effective or ineffective handling of administrative problems.

tive to sell surpluses occurring in the various egg plants. The Federated Egg Cooperative thus came into being. It was felt that this type of arrangement would give each of the six processors an outlet for excess production and that between them, Federated Egg would get a fairly constant supply of eggs.

By the middle sixties, however, the six cooperatives were again faced with changes in the nature of competition. Several large feed companies, actively competing for business, had encouraged larger egg producers to enter into contract arrangements. The contracts generally provided the feed manufacturer with the option of controlling the sale of eggs produced. While many of these producers continued to market their eggs through the co-ops, the contracts put the feed manufacturers in a much stronger position of control, and in turn placed a higher degree of vulnerability on each co-op for a dependable source of supply.

Contract arrangements had rapidly gained in popularity during the early sixties. By the mid-sixties, nearly one-half of the eggs supplied to the co-ops were produced under contract with feed manufacturers. This situation posed a significant threat to the co-ops, since the feed companies could choose to direct these eggs to other processors or even to build competing processing plants of their own.

Another problem of increasing magnitude was the prominent and powerful position held by large egg buyers. The small, specialized egg marketing cooperatives felt they were at a definite disadvantage in short-term marketing tactics. When a small co-op depended heavily on any one chain store buyer, that co-op was in a very vulnerable position. The switching of this one buyer to another supplier could literally put a small processing operation out of business. Thus, the processing cooperatives felt threatened from both sides of the marketing chain, largely because of inadequate size and market power.

To remain competitive, the egg processing cooperatives felt compelled to integrate further into the system. One alternative was to start their own feed business and contract with producers to assure a supply of eggs. While such a move would alleviate some of their supply problems, there was a question whether the individual cooperatives had adequate size to support an efficient feed operation; further, such a move did little to reduce their vulnerability in marketing eggs. Another alternative was to merge with an ongoing feed and contracting operation.

In early 1966, the Columbiana egg processing co-op (a member of Federated Egg) approached Landmark and offered them the opportunity of purchasing their egg operation. The offer provided an opportunity for Landmark, who was already heavily involved in the feed business, including some contracting with egg producers, to integrate forward into egg processing.

Landmark signed a purchase agreement with the Columbiana plant in early 1966. Almost immediately thereafter, Landmark was approached by three other members of the Federated Egg marketing group. The Napoleon, New Washington, and Wooster cooperatives all saw the logic of the Columbiana co-op's move and likewise offered to sell to Landmark. Landmark acquired the three additional plants during the 1966-69 period.

Gaining title to four of the six processors who had formed Federated Egg also gave Landmark control over Federated's marketing operation. At the suggestion of the two remaining processors, Landmark acquired full ownership of Federated in 1969. In total, the operations purchased by Landmark consisted of four egg processing plants, an egg breaking plant, and four sales and distribution centers in Cleveland, Columbus, Pittsburgh, and Marietta.

Landmark's Feed Operations

As a regional cooperative, Landmark serviced 72 local Landmark cooperatives, which in turn operated approximately 180 retail service outlets. Up until 1965, all feed was sold through the local cooperatives. The growing insistence of large producers for direct delivery of feed from the mill, thereby eliminating the costs and profit of local retail service outlets, caused a reappraisal of feed distribution policies. In 1965, Landmark started distributing feed direct to some of the large producers.

In 1967, Landmark bought Gold Star Feeds in Wooster, Ohio, which was heavily involved in contracting with poultry producers. This operation was maintained as a separate part of the Landmark Feed Division and was used to supply all direct delivered feed, and all contract producers.

By 1971, Gold Star supplied the egg producers under contract (about 1 million layers), plus many additional producers. The eggs produced under contract were not necessarily marketed through Landmark's foods division although the newer contracts being signed provided this additional aspect of control. Some of the newer contracts stipulated that Landmark, Inc. maintained ownership of the birds, supplied the feed, controlled flock management practices, and marketed the eggs. The individual producers largely supplied the facilities and labor under contract terms.¹

Thus, in 1971, the foods division was moving toward captive suppliers of eggs, yet was still considerably short of that. The division handled eggs from about 2 million layers, some of which were under contract with Gold Star Feed, some under contract with other feed manufacturers, and some under no contract.

Competitive Situation

John estimated there were 30 egg processing plants operating within the state as of 1971. These were operated by about 25 different firms, only three of which were cooperatives. The majority of these handled fresh eggs. There were also some processors dealing only with breaking and ungraded eggs for commercial use in fresh, dehydrated or frozen form.

¹Contract provisions varied. The producer normally received a minimum of 10% of the value of eggs produced plus the profits from the flock when they were sold at the end of the laying period. Some contracts called for 12% or 17% of the egg check with the profits from the sale of layers split between producers and Landmark. Three basic types of contracts are summarized in Exhibit 6.

Estimated figures for 1970 indicated that Ohio producers satisfied about two-thirds of the total consumption of eggs in Ohio. Ohio egg processors imported roughly one-half of the total eggs they processed--largely from western and southern states.

General Statistics for Ohio, 1970:

Eggs produced by Ohio producers	2.1 billion
Eggs marketed direct by producers	0.3 billion
Ohio produced eggs marketed through Ohio processors	1.8 billion
Total eggs processed by Ohio egg processing plants.	3.4 - 4.1 billion
Proportion of Ohio egg processor output sold in Ohio.	75 - 80 percent
Total egg consumption in Ohio	3.2 billion
Source: Direct from producers	0.3 billion
From egg processors	2.9 billion
(2.6 billion shell eggs and 0.3 billion in processed form)	

While Ohio egg processors supplied most of the eggs consumed in Ohio, this varied some depending upon supply conditions. During periods of surplus production, eggs from the south or mid-west were sometimes shipped into Ohio markets at slightly over breaker prices, causing serious competition and consternation for Landmark and other Ohio processors.

Landmark was the largest egg processor in the state, accounting for about 8 percent of the state's egg processing business. Two other Ohio egg processors were very close to Landmark in volume. One of these, Poultry Producers Cooperative, was the other major cooperative operation. This co-op had its center of operation in the west-central portion of the state (See Figure 1). While it sometimes competed for sales with Landmark, Poultry Producers sold a high proportion of its eggs to the Cincinnati, Dayton, and Richmond, Indiana markets which were not prime markets for Landmark eggs.

Up until 1969, Poultry Producers had owned 49 percent of Federated Egg. At that time, Landmark bought out their interest in Federated, but agreed to continue to market Poultry Producers' surplus eggs.

At different times during the past few months, the management and board of Landmark had considered the possibility of merging with Poultry Producers. The two organizations were on friendly terms, but the specific advantages and disadvantages of such a merger were difficult to assess. Although neither company had formally contacted the other about a merger, it was felt that both organizations would at least be receptive to a proposal and would give it serious consideration.

Two facts were in general agreement. If the merger were to occur, it would make the resulting combine the fifth largest egg processor in the nation. Merger would thus make both concerns less vulnerable to the loss of any large account.

Secondly, such a merger would reduce the two cooperatives to one, not only in fact, but also in the eyes of retail buyers. From past experience, John and his staff knew that chain organizations were reluctant to tie themselves to only one supplier. Would such a merger reduce the total business that the two cooperatives now held as separate and competing entities?

As John analyzed the accounts being served by Landmark, he found that only one 80-store chain was being supplied by both cooperatives. However, he also realized that if an account became dissatisfied with one of the co-ops and cancelled them as a supplier, the present arrangement allowed the other co-op to try to pick up the business. This would not be so likely if the two organizations merged.

Relationships with Egg Producers

Another question gaining importance in the Landmark operation concerned changing producer relationships. Because of the high cost of assembling and handling eggs from small producers, John and his staff had encouraged the plants to gradually raise the minimum number of cases required for eggs to be picked up at the farm. The various plant managers, however, held different views on such restrictions. The result was considerable variance in the average size of producers supplying the different plants.

The prices paid to producers reflected the lower cost of serving large producers. The price schedule used in 1970 was as follows:

<u>Volume Per Week</u>	<u>Price Basis</u>
A Under 25 cases	Farm run (ungraded) ²
B 25 to 49 cases	Farm price (graded)
C 50 to 300 cases	Farm price (graded) + 2¢
D Over 300 cases	Farm price (graded) + 2 1/2¢

The farm price was established for each processing plant area, using Urner Barry prices, plus information from the individual plant managers on local market conditions. John was not particularly happy with the use of Urner Barry prices as a benchmark since they reflected the market for a

²Farm run (ungraded) price was determined by management judgment to approximate the price of a fairly typical small lot of low quality eggs. The intent was to discourage small producers. In practice, the price difference from farm price (graded) varied according to supply conditions. When prices were low, there was little if any price difference since management felt producers were already being hurt.

small share of the eggs marketed in the U.S.³ However, until a better pricing base was developed, he felt it was the best available. Producers were paid once a week.

The concerted move to discourage small producers resulted in the average size producer tripling in just two years, from 30 cases per week in 1968 to 90 cases per week in 1970, and the number of producers being cut nearly in half.⁴ However, this action also posed some potential problems. Some of the small producers were old-time members of Landmark who produced eggs on a quasi-hobby basis. Some had also been instrumental in organizing the original egg processing cooperatives. Both John and Bill McGreevy recognized that some small egg producers might be sizeable accounts for other divisions of Landmark. Refusing to handle their egg business might result in losing their fertilizer, feed, or petroleum business. At the same time, however, John and Bill agreed that in order to compete with other large egg processors in the tightly coordinated egg system of the future, they had to continue their emphasis on large producers.

John felt they should be setting minimum acceptable weekly case levels, but did not know how high they should be. The average size of egg producers had been increasing so rapidly in recent years that whatever limit was made, it would probably have to be revised upward over time. Each time the lower limit was changed, it might generate adverse farmer reaction.

One alternative that had been tried to some extent was to reflect the diseconomies of servicing small producers through the prices paid for their eggs, plus a charge for farm pick-up. However, fully reflecting the added costs of servicing small producers might require so large a differential that producer dissatisfaction would be as great as dropping them altogether.

Size and Location of Plants



After discussing the situation with his staff, John recommended that the New Washington plant be closed. This was effected in January, 1971, and its processing volume transferred to the Napoleon (N.W.) plant. This left the foods division with three shell egg processing plants located at Napoleon (NW Ohio), Wooster (North Central Ohio), and Columbiana (NE Ohio). The Columbiana plant also had an egg breaking and freezing operation. The present location of Landmark and major competing plants are shown in Figure 1.

³Uerner Barry is a private price reporting service based in New York City. Originally, only NYC prices were reported. However, as the percentage of eggs marketed through New York continually declined, the sample was broadened. Prices are now collected from a non-random sample of large egg producers and processors in different parts of the country.

⁴By mid-1971, Landmark was being supplied by approximately 250 producers. About 30 of these produced less than 25 cases per week; another 5 produced over 25 but less than 50 cases per week. Many of these small producers were served by the Wooster plant.



FIGURE 1: Location of Ohio's Major Egg Processors

-  -- Landmark Plants
- X -- Major Competitive Plants
-  -- Other Co-operative Plants

The three plants operated with the following equipment and shift schedules:

- Napoleon (NW)--3 egg processing machines--1 work shift/day
- Wooster (NC)--1 egg processing machine--2 work shifts/day
- Columbiana (NE)--2 egg processing machines--1 1/2 work shifts/day

Each machine was capable of processing about 2,000 cases of eggs per week per shift. John estimated that a two machine plant operating two shifts per day represented the optimum operation (8,000 cases per week). However, this depended upon other factors such as size and density of producers (which affected assembly costs), distribution costs, etc. Figures 2 and 3 indicate the density of egg production in various Ohio counties in 1964.

Marketing Situation

In 1970, Landmark processed 1,065,900 cases of eggs. The source of eggs for the different plants, and the volume processed by various plants was as follows:

	Thousands of Cases Received From				Cases Sold	Gain or (Loss)	% Gain or (Loss)
	Producers	Transfers	Other	Total			
NW Plant	301.2	3.4	45.7	350.3	342.5	(6.0)	(1.7)
NE Plant	179.7	22.1	101.3	303.1	299.2	(2.0)	(0.7)
Wooster Plant	178.4	15.2	68.1	261.7	261.0	(0.7)	(0.3)
N. Central Plant	103.7	3.8	43.4	150.9	149.7	(1.3)	(0.8)
Total	763.0	44.4	258.5	1065.9	1052.3	(10.0)	(1.0)

The one million cases of eggs processed by the four plants were disposed of in the following ways:

Sold through sales and distribution centers: ⁵	
Columbus	41.0
Cleveland.	310.8
Marietta	<u>51.1</u>
Total	402.9 (38%)
Transferred to frozen food plant for breaking and freezing.	61.3 (6%)
Sold by sales offices at processing plants	588.1 (56%)

⁵The Pittsburgh distribution center was closed in October, 1969, since the Columbiana plant and sales personnel could more efficiently service this market.

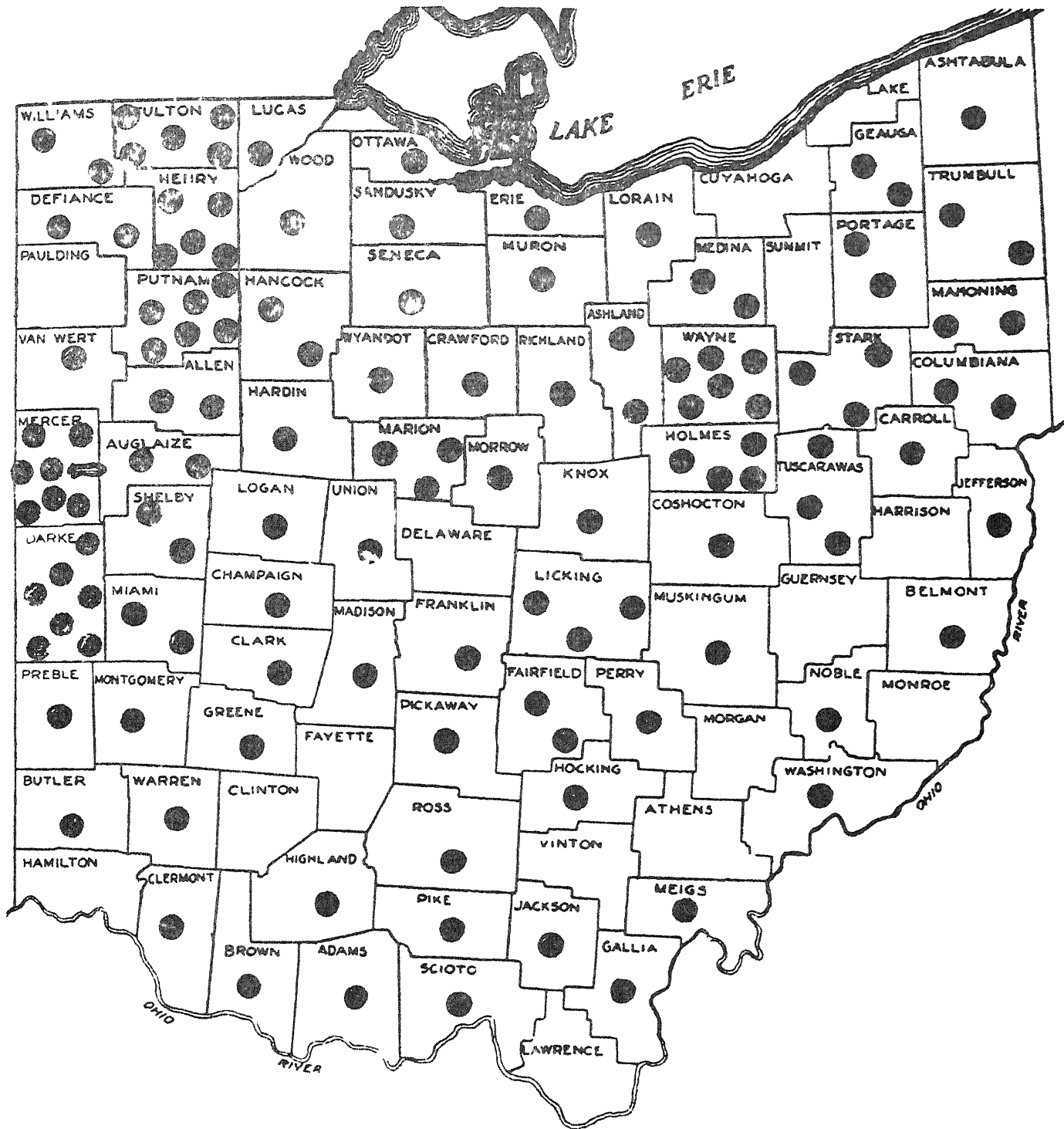


FIGURE 2: Number of Chickens Four Months Old or Older on Farms , 1964

Each ● = 100,000 or major part thereof

Source: U. S. Census

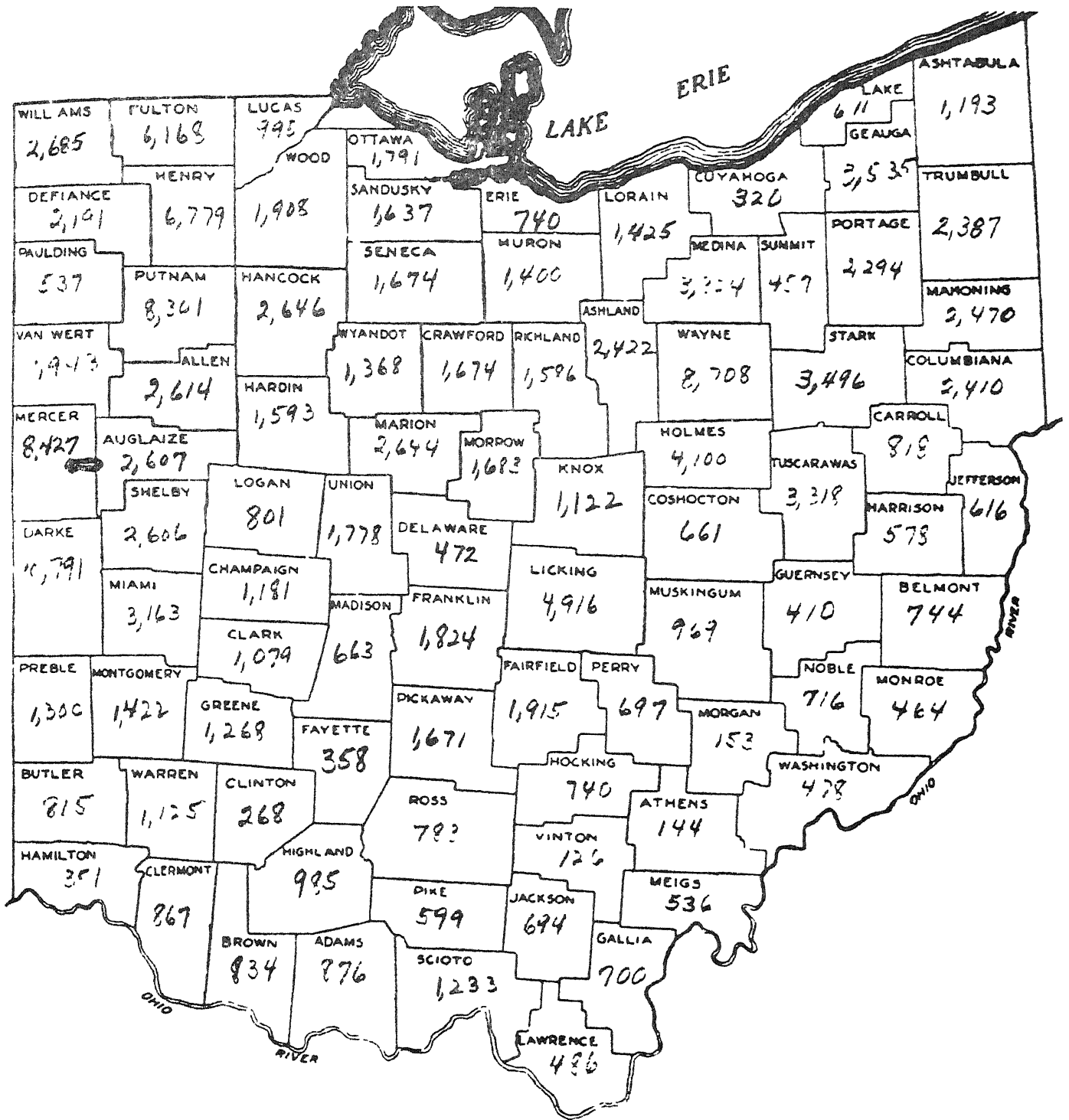


FIGURE 3: Sale of Eggs by County in Thousand Dozens, 1964
(State Total -- 166,860,976 dozen)

Source: U. S. Census

John estimated that 65 percent of their volume was sold to retail food stores, 10 percent to the institutional trade, and 25 percent to wholesale egg distributors.

The distribution of eggs from the four processing plants to the three sales and distribution centers and the frozen food plant are shown in Exhibit 1. As can be noted, the Cleveland sales office handled nearly three-fourths of the eggs marketed through these departments and about 30 percent of all eggs processed by the Landmark plants. In part, this was due to the sales personnel in the Cleveland division who had developed an effective program to assist retailers in generating more sales and gross profit from their dairy departments. This frequently involved a reduction in the number of items carried in the department, reallocation of display space, and more logical grouping of items within the department.

Exhibit 2 presents fairly typical operating results for a retail dairy department. While eggs frequently did not carry a high gross margin, they were very strong generators of profit per foot of shelf space because of their high inventory turnover. Efforts directed at increasing department profits by giving more space to the more profitable items, and less to the least profitable items generally resulted in the display--and sale--of eggs being expanded. This approach was favorably received by retail firms since dairy department sales and gross profits generally increased, and also provided benefits to Landmark.

The experience of the co-op in the Cleveland market convinced John and his staff that this was an effective method of selling eggs on a basis other than price. Their present merchandising approach to retailers included the proposition that if eggs were given 10 percent of the display space, they would contribute 20 percent of the sales and 25 percent of the gross profit in the dairy department. John recognized, however, that not all of their sales personnel could effectively work with retailers. Many were still oriented towards "selling eggs", rather than marketing or merchandising eggs. Many were clearly not retailer oriented.

Most of the eggs sold by Landmark were packed in retailer cartons. The foods division had recently developed a new styrofoam carton with the brand name Lovin' Eggs. This carton was being sold in 35 stores with a volume of about 800 cases per week without any advertising support.

The selling arrangement with many retail firms involved the use of formula prices pegged to the Urner Barry price. The surplus egg condition in early 1971 stimulated some movement away from formula pricing since retailers found they could frequently benefit by negotiating with several suppliers, some of whom were willing to make price concessions.⁶ John estimated that about one-half of the sales to institutional customers were on a formula basis.

⁶Formula pricing arrangements stipulated the method for determining the exchange price between Landmark and customer (so many cents above or below the Urner Barry price, FOB retail warehouse or store). The quantity exchanged was normally not stipulated, however, allowing customers to buy all or none of their weekly needs from Landmark. Where formulas were used, they were renegotiated at the discretion of either party.

Since the individual plants and sales and distribution centers were separate profit centers, a transfer price was necessary when eggs from the processing plants were sold through one of the three sales and distribution centers, or when shipped to the frozen food plant. Transfer prices were based upon Urner Barry prices plus or minus adjustments depending upon whether the eggs were bulk or cartoned, and upon who performed the transportation. The foods division staff recognized, however, that the method of calculating transfer prices could not only significantly affect the profitability of the various profit centers, but could also influence the degree of cooperation and the level of intra-company cohesiveness.

Questions concerning the procedures for establishing transfer prices and allocating overhead expenses cast doubts on the validity of the operating statements for the different profit centers. Were the losses shown for the distribution centers (Exhibit 1) accurate reflections of their operations, or were the processing plants benefitting at the expense of the distribution centers? (Exhibit 3). By mid-1971, John had had the accounting procedures adjusted so that consolidated statements could be developed without double counting or causing serious distortion. (Exhibits 4 and 5). These provided a more accurate picture of the overall operations, but still did not provide John with much of the detailed data that would be helpful in dealing with the problems and decisions he faced. He knew, however, that several of the decisions would not wait.

Exhibit 1: Source of Eggs and Volume Handled by Three Distribution Centers and Frozen Food Plant, 1968-69 and 1969-70.

Source of Eggs:	Thousands of Cases						Frozen Food		Total All Four Divisions	
	Columbus		Cleveland		Marietta		1969-70	1968-69	1969-70	1968-69
	1969-70	1968-69	1969-70	1968-69	1970	1969				
Northwest Plant	6.2	5.7	104.1	54.1	*		25.4	13.3	135.7 ^a	73.1 ^a
Northeast Plant	---	---	29.0	71.7	*		18.4	11.8	47.4 ^a	83.5 ^a
Wooster Plant	.5	.2	120.0	129.0	*		7.5	2.6	128.0 ^a	131.8 ^a
North Central Plant	<u>34.3</u>	<u>37.1</u>	<u>57.7</u>	<u>61.6</u>	<u>*</u>		<u>10.0</u>	<u>1.9</u>	<u>102.0^a</u>	<u>100.6^a</u>
Total Landmark Plants	41.0	43.0	310.8	316.4	51.1		61.3	29.6	464.2	389.0 ^a
Poultry Producers	57.0	57.6	51.2	11.2	*		16.5	19.0	124.7 ^a	87.8 ^a
Other	<u>1.7</u>	<u>12.6</u>	<u>.1</u>	<u>.2</u>	<u>32.3</u>		<u>6.4</u>	<u>5.9</u>	<u>40.5</u>	<u>18.7^a</u>
Total Cases Received	99.7	113.2	362.1	327.9	83.4		84.2	54.5	629.4	495.5 ^a
Cases Sold:							(Pounds Sold) ⁺			
Direct**	50.0	57.0	304.3	277.1	*					
Through Warehouse	<u>49.3</u>	<u>55.7</u>	<u>57.8</u>	<u>50.8</u>	<u>*</u>					
Total Cases Sold	99.3	112.7	362.1	327.9	83.9		2,780.7	1,964.2		
Cases (Short) Over	(.4)	(.5)	0	0	.5		(Per Pound)			
Selling Price Per Dozen	.486	.430	.518	.4694	.399		.283	.264		
Gross Margin Per Dozen	.012	.010	.010	.0092	.030		.064	.068		
Expenses Per Dozen	.027	.024	.009	.0096	.034		.089	.096		
Net Savings Per Dozen	(.015)	(.014)	.001	(.0004)	(.004)		(.025)	(.029)		

a -- Doesn't include eggs sold through Marietta

* -- Detailed break-down of source of eggs sold through the Marietta distribution center is not available. Note that data for Marietta are for calendar year since this distribution facility was originally affiliated with the Wooster plant and had a different fiscal year than the other three operations which originally were part of Federated Egg. Combining the figures thus involves some distortion.

+ -- Pounds yield per case of eggs was 33.62 in 1969-70. Thus, a selling price of 28.3 cents per pound was equivalent to 31.7 cents per dozen.

** -- Direct sales refer to those where the eggs are delivered to the customer by the processing plant and hence are never handled by the distribution center.

Exhibit 2: Example of One Week Operating Results for Retail Dairy Department

DAIRY DEPARTMENT SUMMARY

Store #999

PRODUCT	Dollar Sales	Percent Dept. Sales	Dollar Gross Profit	Percent Gross Profit	Percent Dept. Gross	Percent Shelf Feet	Ave. Dollar Inventory	Inventory Turnover	Return on Inv.	Sales Shelf Foot	GP Shelf Foot
Milk	\$ 493.39	21.9%	\$ 52.51	10.6%	14.1%	4.4%	\$ 71.42	6.2	73.5%	\$69.66	\$ 7.4
Milk Beverages	62.87	2.8	15.63	24.9	4.2	1.7	6.73	7.0	232.2	22.86	5.6
Cream and Cr. Subs.	61.57	2.7	13.30	21.6	3.6	4.8	37.85	1.3	35.2	7.99	1.7
Butter	232.96	10.4	25.06	10.8	6.7	5.0	179.28	1.2	13.9	29.27	3.1
Margarine	226.80	10.1	41.65	18.4	11.2	8.6	509.59	.4	8.2	16.44	3.0
Cheese	498.89	22.2	81.47	16.3	21.9	3.7	297.41	1.4	27.4	83.15	13.5
Cottage Cheese	98.99	4.4	22.82	23.1	6.1	3.0	20.58	3.7	110.9	21.03	4.8
Processed Cheese Loafs	57.89	2.6	14.18	24.5	3.8	7.2	244.35	.2	5.4	4.96	1.2
Sliced Processed Cheese	100.88	4.5	21.33	21.1	5.7	5.2	270.45	.3	7.9	11.93	2.5
Store Packaged Cheese	0	0	0	0	0	0	0	0	0	0	
Prepared Natural Cheese	129.05	5.7	23.57	18.3	6.3	12.8	232.11	.5	10.2	6.23	1.1
Grated and Specialty Ch	36.26	1.6	7.12	19.6	1.9	9.6	119.98	.2	5.9	2.34	.4
Cream Cheese	30.95	1.4	6.70	21.7	1.8	4.5	60.54	.4	11.1	4.27	.9
Cheese Spreads and Foods	12.62	.6	1.77	14.0	.5	4.5	67.24	.2	2.6	1.74	.2
Sour Cream and Dips	55.47	2.5	14.34	25.8	3.8	3.7	34.53	1.2	41.5	9.24	2.3
Biscuits and Dinner Rolls	45.68	2.0	5.14	11.3	1.4	3.2	41.50	1.0	12.4	8.77	.9
Cookies and Pastry	21.61	.9	4.58	21.2	1.2	8.1	73.90	.2	6.2	1.66	.3
Miscellaneous	84.75	3.7	21.57	25.5	5.8	10.0	140.80	.4	15.3	5.24	1.3
TOTALS	\$2,250.63	100.0%	\$372.74	16.6%	100.0%	100.0%	\$2,428.26	0.8	15.4	\$13.96	\$2.3

Exhibit 3: Annual Operating Results, Four Egg Packing Plants, 1970

	Total Dollars	Dollars Per Case
<u>INCOME</u>		
Total Sales	14,243,259	12.54
Cost of Sales	<u>11,541,837</u>	<u>10.16</u>
Gross Margin	<u>2,701,422</u>	<u>2.38</u>
Cases	218,009	.19
Cartons	<u>653,553</u>	<u>.58</u>
Total Container Cost	<u>871,563</u>	<u>.77</u>
Net Margin	1,829,858	1.61
Other Income	26,603	.02
Total Income	<u>1,856,462</u>	<u>1.63</u>
<u>EXPENSE</u>		
Plant	861,886	.76
Administrative	203,744	.18
Trucking	575,303	.51
Sales	<u>62,745</u>	<u>.06</u>
Total Expenses	<u>1,703,679</u>	<u>1.50</u>
Net Operating Savings	<u>152,782</u>	.14
General Expense	<u>122,629</u>	<u>.11</u>
Net Savings	<u>30,153</u>	<u>.03</u>
Dividend Requirements	26,468	

Exhibit 4: Consolidated Monthly Income Statement, Food Division,
Landmark, Inc., August, 1971

	\$	%
SALES		
Eggs	\$ 939,149	74.4
Poultry	309,540	24.5
Dairy Products	<u>14,193</u>	<u>1.1</u>
	<u>\$ 1,262,882</u>	<u>100.0</u>
GROSS MARGINS		
Eggs	\$ 268,225	21.2
Poultry	23,424	1.9
Dairy Products	<u>1,167</u>	<u>0.1</u>
Total Gross Margin	<u>\$ 292,816</u>	<u>23.2</u>
OTHER REVENUE		
Contract Services	<u>\$ 20,888</u>	<u>1.7</u>
Total Gross Revenue	\$ 313,704	24.8
EXPENSES		
Packaging Materials	\$ 91,078	7.2
Plant Operations	194,829	15.4
Sales Costs	<u>15,660</u>	<u>1.2</u>
Total Expenses	\$ 301,567	23.8
SAVINGS	\$ 12,137	1.0

Note: Exhibits 4 and 5 include the processing plants, distribution centers and frozen egg operation combined.

Exhibit 5: Consolidated Balance Sheet, Food Division, Landmark, Inc.,
December, 1970

<u>ASSETS</u>	(000)
Current Assets:	
Cash	\$ 270.8
Accounts Receivable (Net)	1,251.4
Inventories	319.7
Prepaid Expenses	<u>25.2</u>
Total Current Assets	\$ 1,867.1
Non-Current Assets:	
Fixed Assets (Net)	\$ 740.0
Investments	<u>649.3</u>
Total Non-Current Assets	\$ 1,389.3
Total Assets	\$ 3,256.4

LIABILITIES

Current Liabilities	\$ 1,239.2
Non-Current Liabilities	655.7
Net Worth	<u>1,361.4</u>
Total Liabilities	\$ 3,256.4

NOTE: The processing plants represented 80 percent of total assets,
one-half of which were non-current.

Exhibit 6:

Basic Types of Table Egg Production Contracts
and the Obligations of Each Party Concerned

	<u>Producer</u>	<u>Contractor</u>
Market Contract	<ol style="list-style-type: none">1. Provides birds, feed, supplies, buildings, equipment, and labor2. Follow egg quality program prescribed by contractor	<ol style="list-style-type: none">1. Agrees to take all eggs produced2. Pays for eggs based on quality and volume received
Producer Contracts		
A. Credit type	<ol style="list-style-type: none">1. Provides labor, equipment, and buildings2. Markets all eggs and fowl to most favorable outlet3. Pays for use of birds, interest charges on credit extended, bears all risks-- profit or loss	<ol style="list-style-type: none">1. Provides birds, feed, medication, and other supplies.2. Charges 6 percent interest on accounts due3. Does not share profit or loss
B. Control quantity and quality of egg supply	<ol style="list-style-type: none">1. Provides labor, equipment, and buildings2. Receives flat fee and/or incentive payments for resource supplies3. Follows flock management practices recommended by contractor	<ol style="list-style-type: none">1. Provides birds, feed, medication, and other supplies2. Controls management of flock and egg processing, including distribution

Source: A. William Jasper, "Contracts for Table Egg Production in the United States," paper presented to 13th World's Poultry Congress, August, 1966.

CHANGES IN THE EGG INDUSTRY AND PROJECTIONS FOR 1980

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ABSTRACT: *The egg industry has expanded slowly during the last 2 decades and is expected to grow slowly during the 1970's. Improved management, breeding, and feeding efficiency have contributed to an increase in the number of eggs produced per hen and to less feed required per dozen eggs. Structural changes, such as larger producing units and growth in contracting played an important role in the development of present production and marketing practices. Per capita consumption of eggs has declined. Total consumption of eggs is expected to expand during the 1970's but at a slower rate than population increases.*

KEY WORDS: Egg production, egg consumption, egg prices, egg projections.

INTRODUCTION

Many changes have occurred in the egg industry since the advent of specialized flocks for egg production. The development of the broiler industry from the spring fryer markets resulted in more emphasis being placed on the development of laying flocks for the sole purpose of producing eggs more efficiently.

Egg output expanded slowly prior to World War II--from 33 billion eggs in 1922 to 40 billion in 1940. Production

expanded rapidly during the early 1940's and totaled 59 billion in 1944. Following the curtailment of wartime needs, output declined and did not recover to earlier levels until 1950. Since then, production and consumption have trended slowly upward (table 1).

But the increase in consumption has not kept pace with the growth in population, so consumption of eggs per person has declined. ^{1/}

TRENDS AND DEVELOPMENTS IN PRODUCTION

Production: Egg production during the 1950's expanded at an average annual rate of about 1 percent despite a 4-year decline at the beginning of the period. Since 1960, egg production increased at 1-1/2 percent a year. The increase in production prior to 1960 resulted from about a 2 percent annual increase in the rate of lay as the number of layers declined by over 1 percent a year. After 1960 the larger production was caused by a small increase in both layer numbers and rate of lay (figure 1).

The number of layers fell from 340 million in 1950 to 295 million in 1960, then trended upward to 317 million in 1967. Layer numbers declined in 1968 and

^{1/} For a more comprehensive treatment of changes in the egg industry, see Rogers, George B.; Conlogue, Robert M.; and Irvin, Ruth J., Economic Characteristics of and Changes in the Market Egg Industry, ERS, USDA, MRR No. 877, April 1970.

Source: Poultry and Egg Situation 262, Econ. Research Serv., U.S.D.A., June, 1970.

Feed cost is a major factor in egg production, accounting for around half of total cost. USDA computes the average feed units used to produce 100 eggs. ^{2/} Feed required to produce 1 dozen eggs in

1969 was about a pound lower than in the early 1950's. Industry and research reports indicate that in recent years around 5 pounds of feed were required to produce a dozen eggs.

CHANGING STRUCTURE AND LOCATION

The number and size of egg producing units have changed dramatically during the past 2 decades. More eggs are being produced by fewer producers in a system that is moving towards more coordinated production. Production has shifted geographically and many changes have occurred in the marketing system for eggs.

Fewer But Larger Producers: ^{3/} The number of farms selling eggs fell sharply from 2.4 million in 1949 to 527,000 in 1964. In 1949 most eggs were produced on a relatively small scale, often part-time poultry enterprises and on general farms. Farms with less than 400 chickens 4 months old and older accounted for two-thirds of all eggs sold in 1949. But most of the small laying flocks have disappeared from the scene and egg production has become concentrated on larger more specialized farms.

Comparable data were not reported in the 1964 Census. But in 1964, farms with less than 400 chickens 4 months old and over accounted for less than a fifth of all chickens of this age on farms. This compares with 76 percent in 1950. Also in 1964, about 16,000 farms selling 50,000 dozen or more eggs accounted for more than two-thirds of all eggs sold. The largest 1,000 farms selling eggs in 1964 produced over a fifth of all eggs and the same 1,000 farms sold twice as many eggs as 422,000 farms selling less than 5,000 dozen each. Although 1969 census data are not yet available, they likely will show that producers have continued to decline in number but increase in size.

In recent years, forced molting or recycling of hens has been used more widely as a production technique in large

specialized operations. Hens that have about finished laying for the season are taken off feed for a period of time to induce molting. After the molt is completed the hens are kept for another production period. Although they normally do not produce as many eggs or as good quality, some industry reports indicate that under some price situations the realized net return for the laying period can be higher than replacing the flock with pullets.

The decline in the number of laying flocks and the trend to larger operations reflect many factors affecting the supply and demand for eggs.

Growth of Contract Production: Contract production has played an important role in the changing structure of the egg industry. However, contract production has not been used in the egg industry to the extent of that for the broiler and turkey industries.

Only a small proportion of total egg production was under contract in the late 1950's--probably less than 5 percent. ^{4/} By 1968, eggs produced under some type of contractual arrangement between the grower and other firms associated with the

^{2/} Hodges, Earl F., Consumption of Feed by Livestock 1940-59, ERS, USDA, PRR No. 79, March 1964.

^{3/} Data from Bureau of Census, 1964 U.S. Census of Agriculture, Livestock, Poultry, and Livestock and Poultry Products, Vol. II, Chapter 2.

^{4/} Baker, Ralph L., Integrating Egg Production and Marketing. AMS, USDA, MRR No. 332, June 1959.

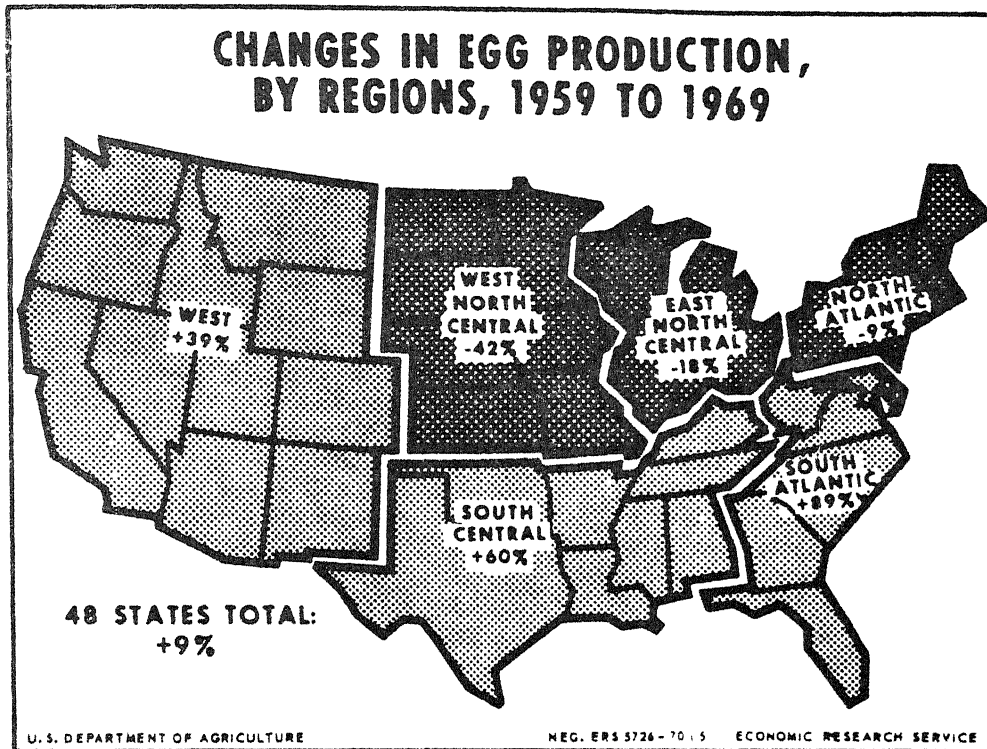


Figure 2

industry were estimated to account for 30 to 35 percent of total egg production. ^{5/}

Egg handlers, feed companies, and producers developed contract production and owner integrated programs to help solve quality, supply and cost problems and expand outlets for feed. Growers entered into contract programs so they could expand operations, reduce risks, acquire financial and technical assistance, and establish market outlets.

Contract production involves a contract to produce eggs under certain conditions. A typical contract widely used is where the pullets, feed and most other inputs are furnished by the contractor, and the producer furnishes housing facilities and the necessary labor. The eggs belong to the contractor and the producer is usually paid a fixed amount on the basis of eggs produced and often with provisions for an additional incentive payment based on efficiency of production and quality of eggs produced.

Geographic Shifts in Production:

Egg production over the years has tended to shift to the South and West. Production increased 75 percent in the South from 1959 to 1969 and increased 39 percent in the West, while output in the North fell over a fourth. Most of the decline was in the North Central region (figure 2). In 1959, the West North Central region accounted for more than 25 percent of total production but fell to less than 14 percent in 1969. The South Atlantic region, the smallest producer in 1959, increased from 12 percent of the total in 1959 to over a fifth in 1969. The South Central region's share also increased from 14 percent to over a fifth. Thus, the South increased its share of production from 24 percent in 1950 to 42 percent for 1969 (table 2).

^{5/} Gallimore, William W. and Vertrees, James G., A Comparison of Returns to Poultry Growers. ERS, USDA, MRR No. 814, February 1968.

Six of the 10 largest egg producing states in 1969 were in the South. During the early 1950's much of the production was concentrated in Iowa, Minnesota, Illinois, Ohio, Indiana, and Wisconsin. These States all ranked in the top 10 in 1950 and produced nearly a fourth of the eggs. By 1969 all of these, except Iowa and Indiana, had been replaced by Southern States.

Marketing Changes: Changes have come about in egg marketing over the years, largely in conjunction with the trend to larger size and declining number of production units. Most eggs are marketed as shell eggs--about 83 percent in 1969. About 10 percent of production goes for processed egg products, 6-8 percent for hatching purposes and less than half a percent for export.

As shell eggs move from producer to consumer, channels of movement may vary. Eggs may move direct from producer to consumer or they may pass through buying stations to assemblers, to wholesale distributors, to retail outlets and then to the consumers. Prior to the 1960's, around two-thirds of the eggs moved through wholesale distributors to retailers and institutional buyers. ^{6/} Approximately half of the eggs handled by these firms came from producers and the remainder from assembler-packers. Since 1960, assembler-packers have become predominant. Their share has risen substantially as the proportion of eggs passing through wholesalers has declined by at least 50 percent. In recent years, large producers have tended to ship their eggs direct to wholesale markets or to sell them direct to large retail outlets.

The location of facilities for grading and cartoning of eggs also has changed. These operations were first performed largely by wholesalers in central markets. To provide closer control over the quality of eggs being offered to customers, chain stores began to grade and carton eggs and bypass the wholesaler. Improved procedures in recent years have switched much of the grading and cartoning back towards the producing end, primarily to assembler-

packers. Costs of these operations generally are lower in producing areas than in the egg room of the retailer. Also, producers are cartoning an increasing proportion of eggs.

Processed eggs take a small but growing share of the market. The use of eggs for processed egg products has trended upward both in quantity and as a proportion of production. In the early 1950's, 10 to 12 million cases or about 6 percent of total egg production went into processed egg products. Although below year-earlier levels, eggs used in processed egg products in 1969 totaled 16 million cases, about 9 percent of production. Processed egg products go primarily to commercial food manufacturers or institutional food firms, with relatively small amounts going to consumer markets or industrial outlets. ^{7/}

Consumption Growth Slow: Total use of eggs has trended slowly upward, from 4.9 billion dozen in 1950 to 5.3 billion in 1969. Consumption increased during the 1950's, declined in the early 1960's, and has moved slowly upward since 1963. Over the two decades, consumption increased less than the increase in population, resulting in a decline in per capita use of eggs (table 1).

Population of the 48 States increased from 152 million in 1950 to over 200 million in 1969. Per capita consumption of eggs averaged 390 eggs a year in the early 1950's but declined to 317 eggs in 1963. Since 1963, per capita consumption has fluctuated with no clear trend evident.

While national per capita disposable income gained from less than \$1,400 in 1950 to over \$3,000 for 1969, egg prices generally declined. This resulted in a

^{6/} Rogers, George B. and Voss, Leonard B., Pricing Systems for Eggs, ERS, USDA, MRR No. 850, May 1969.

^{7/} James, Harold B., Jr., Processed Egg Products: A Marketing Opportunity, ERS, USDA, Marketing and Transportation Situation, February 1969.

dollar purchasing more eggs in 1967 and 1968 than in most other years since 1950, while the same dollar would purchase less of most other food items. For example, in recent years, retail prices of eggs have been considerably lower relative to meats. In 1947-49 a pound of Choice beef at retail was equivalent in price to a dozen (large Grade A) eggs and a pound of pork was equivalent to 0.8 dozen of eggs. By 1967-69 the price of a pound of beef at retail was equivalent to 1.6 dozen eggs, and a pound of pork was equivalent to 1.3 dozen eggs.

Prices Decline: Egg prices have generally trended downward since the late 1940's. Prices paid to producers for eggs averaged 46 cents a dozen in 1947-49. Since 1950, prices generally trended downward to a low of 31 cents a dozen for 1967. Prices showed some recovery in 1968 and were particularly strong in 1969, rising to their highest levels since the early 1950's. A small reduction in egg output, strong consumer demand, relatively high meat prices and increased quantities of eggs going for both hatchery use and breaking purposes contributed to the 1969 strength.

Even though prices of eggs trended downward over the years, per capita egg use also declined. Demand for eggs

appears to have been tempered by a number of factors. Less strenuous work for much of the population has reduced the need for a large breakfast. And with more married women in the labor force, eggs for breakfast have been replaced by cereals and sweet rolls or no breakfast. Also, people in general are more concerned about weight and health problems. Adverse publicity in recent years about cholesterol and its possible effect on health likely has reduced the demand for eggs.

Methods of determining basic price levels for eggs have not kept pace with the rapid changes in production and marketing over the years. In 1966, Congress appropriated special funds to USDA for a study of how market eggs are priced and what changes should be made to improve or change the present pricing systems for eggs more nearly to reflect changes in the demand for and supply of eggs.

A large amount of research work on pricing and related subjects has been completed and published. In mid-1969 a committee was formed, largely from the industry, to study and make recommendations for change in egg pricing methods. On May 20, 1970, this committee issued its recommendations and held a public meeting June 4 to discuss them.

PROJECTIONS

Prospects for the egg industry during the 1970's, like those for other agricultural enterprises, depend on many factors--not only those peculiar to the egg industry, but also those affecting consumer incomes and preferences and the supplies and relative costs of closely competing products. The projections for eggs are based on the following assumptions, some of which may not materialize: (1) Population increase not expected to quite match the 14 percent growth of the sixties; (2) continued general economic growth, with a period of easing inflationary pressures followed by a slower rise in the general price level; (3) high employment levels and rising labor costs;

and (4) continued low prices for eggs relative to prices of red meats.

Production and Use to Expand Slowly: Egg production and use will continue to expand slowly during the 1970's--probably at around 1 percent a year. Thus, output in 1980 is projected around a tenth above the 5.7 million dozen in 1969. Such growth in the market for eggs may require only a small increase in the number of layers. How many more will largely depend on the rate of lay. Output per hen will likely continue to increase slowly--to around 230 eggs per year by 1980, compared with 220 in 1969. If this occurs, the projected growth in the market for

1980 would require an expansion of about 5 percent in the number of layers--from the 313 million in 1969. However, if the practice of recycling old hens gains substantially, the rate of lay might not gain and could trend downward.

Imports of eggs and egg products likely will add little to the egg supply. Imports of eggs during the 1960's averaged less than 0.1 percent of U.S. production. Although imports may show some increase, they are expected to continue to be of minor importance in the 1970's.

Exports of eggs at the end of the decade likely will be near recent levels of 40-50 million dozens. Eggs used for hatching--both for broiler and egg-type chicks will increase, possibly to 550 to 560 million dozens by 1980. Most, if not all, the increase in hatching eggs

use will go for larger broiler production. Egg production going for export and hatching purposes would account for about 10 percent of projected production, compared with 7 percent in 1969.

Per Capita Use to Slip: Total use of eggs is expected to increase around a tenth over the decade, slightly less than the projected growth in population; and more eggs will be used for hatching. Thus, per capita consumption of eggs likely will continue to trend slowly downward--declining by perhaps around 5 percent from the 316 eggs consumed in 1969. The decline will be in table eggs as consumption of processed eggs is expected to gain. Quantity of shell eggs going into such production by 1980 may average substantially above the equivalent of 31 eggs used per person in 1969.

Table 1.--Eggs: Supply and utilization, 1950-69 1.

Year	Supply						Utilization								
	Production 2/	Imports 3/	Beginning stocks 4/			Total supply	Ending stocks	Exports and shipments			Domestic disappearance			Per capita	
			Commer- cial	USDA	Total			Commer- cial	USDA 5/	Total	Eggs used for hatching 6/	Civilian			
												Mili- tary 7/	Total		Per capita
Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	Mil. doz.	No.		
1950	5,404	20	53	206	259	5,683	356	30	150	180	200	71	8/4,875	389	
1951	5,322	8	52	304	356	5,686	108	39	215	254	228	155	4,941	393	
1952	5,323	8	63	45	108	5,439	54	54	11	65	218	118	4,984	390	
1953	5,307	7	54	---	54	5,368	38	58	---	58	227	117	4,928	379	
1954	5,402	4	38	---	38	5,444	69	64	---	64	224	101	4,986	376	
1955	5,407	2	69	---	69	5,478	73	63	2	65	228	91	5,021	371	
1956	5,500	2	73	---	73	5,575	88	59	5	64	256	80	5,087	369	
1957	5,442	1	88	---	88	5,531	68	50	---	50	252	83	5,078	362	
1958	5,442	2	68	---	68	5,512	49	39	5	44	287	70	5,062	354	
1959	5,542	1	45	---	45	5,588	65	50	4	54	280	63	5,125	352	
1960	5,339	3	65	---	65	5,407	51	42	2	44	282	63	4,967	334	
1961	5,358	3	51	---	51	5,412	48	40	2	42	302	64	4,956	328	
1962	5,403	2	48	---	48	5,453	50	32	---	32	303	70	4,998	326	
1963	5,345	1	50	---	50	5,396	44	42	1	43	304	67	4,938	317	
1964	5,435	2	44	---	44	5,481	46	30	2	32	312	76	5,015	318	
1965	5,474	1	46	---	46	5,521	41	39	---	39	333	94	5,014	314	
1966	5,540	15	41	---	41	5,596	28	41	---	41	365	102	5,060	313	
1967	5,836	4	28	---	28	5,868	71	55	---	55	361	110	5,271	323	
1968	5,773	6	71	---	71	5,850	56	46	---	46	364	108	5,276	320	
1969 9/	5,744	9	56	---	56	5,809	34	41	---	41	394	83	5,257	316	

- 1/ Beginning in 1960, includes Alaska and Hawaii.
- 2/ Estimated farm output plus nonfarm production estimated at 10 percent of farm production in 1950-54. Beginning in 1955, this adjustment was reduced 1 percentage point per year to zero in 1964.
- 3/ Shell eggs and the approximate shell-egg equivalent of dried and frozen eggs.
- 4/ Storage stocks include shell eggs and the approximate shell-egg equivalent of frozen eggs. In 1950-56 commercial storage holdings also included the shell-egg equivalent of reported stocks of dried eggs solids.
- 5/ Beginning in 1955 exports under the Mutual Security Act of 1951 and USDA donations to Territories.
- 6/ Estimated on the basis of chickens hatched.
- 7/ Includes USDA donations to military and military feeding of civilians in occupied territories.
- 8/ Excludes storage losses of 1 million dozen in 1950.
- 9/ Preliminary.

Table 2.--Eggs. Number produced by regions and for the U.S., selected years, 1940-64

Year	North Atlantic	East North Central	West North Central	South Atlantic	South Central	West 1/	United States
----- Millions -----							
1940	6,298	8,593	10,415	3,443	6,618	4,340	39,707
1945	8,335	11,389	16,913	4,669	9,583	5,332	56,221
1950	10,137	11,743	16,690	5,156	8,786	6,442	58,954
1955	10,993	11,091	16,584	5,546	7,347	7,365	59,526
1960	10,040	10,798	15,113	8,084	8,789	8,778	61,602
1965	9,986	9,673	11,860	11,333	12,382	10,458	65,692
1966	9,765	9,485	11,158	12,186	13,144	10,746	66,484
1967	9,839	9,832	11,251	13,285	14,482	11,342	70,031
1968	9,639	9,759	10,075	13,541	14,672	11,584	69,270
1969	9,772	9,311	9,457	14,402	14,398	11,585	68,925

1/ For 1960, Hawaii is included in the West, since 1960 both Hawaii and Alaska.

Table 3 .--Poultry and eggs: Civilian per capita consumption, 1960-69

Year	Eggs			Chickens			Turkeys	Total poultry
	Shell	Processed	Total	Broilers	Farm	Total		
----- Number -----								
----- Pounds -----								
1960	306	28	334	23.3	4.7	28.0	6.1	34.1
1961	298	30	328	25.8	4.2	30.0	7.4	37.4
1962	296	30	326	25.6	4.3	29.9	7.0	36.9
1963	290	27	317	26.9	3.8	30.7	6.8	37.5
1964	287	31	318	27.5	3.5	31.0	7.3	38.3
1965	285	29	314	29.4	3.9	33.3	7.4	40.7
1966	283	30	313	32.2	3.8	36.0	7.8	43.8
1967	289	34	323	32.7	4.4	37.1	8.6	45.7
1968	288	32	320	33.0	4.4	37.4	7.9	45.1
1969	285	31	316	35.1	4.1	39.2	8.4	47.6

APPENDIX B, LANDMARK, INC., (B) ¹

COORDINATION OF PRODUCTION, INPUT-SUPPLYING, AND MARKETING

Structural Evolution of the Egg Industry

In the early days of the poultry industry, the poultryman performed many functions. He frequently kept a breeding flock, hatched his own chicks, grew out his own replacements, and sold live or dressed surplus cockerels, cull pullets, and fowl at the farm. He hauled eggs and poultry to local buying stations, stores, and consumers, made his own equipment, handmixed his own feed, and did considerable experimenting with feeds, strains of birds, remedies for diseases and parasites, and management. In a sense, his operations were vertically integrated. But he performed many of these functions as much from necessity as from choice, since the industry was composed mainly of small, decentralized units.

This type of industry gradually gave way to one characterized by increased specialization. Better communication and transportation developed, new methods were used and new services offered, and new technology made larger production and marketing units feasible. Breeding and hatching functions left the

¹This section contains selected excerpts from "Economic Characteristics of the Changes in the Market Egg Industry," MRR 877, Economic Research Service, U. S. Department of Agriculture, April, 1970.

individual farm, as specialized strains for meat or egg production were developed. Feedmixing passed largely to the commercial mills. Large-scale commercial equipment, feed supplement, and disease-control (remedies and vaccines) companies emerged.

Many of the producer's functions came to be performed by others. Mills and feed stores began to handle equipment, supplies, and remedies. Commercial slaughtering plants and egg-handling plants came to the farm for supplies and began to perform additional marketing functions for the farmer. Many of the organizations selling inputs to the producer and marketing his poultry and eggs were farmer cooperatives. Public agencies and private firms went into scientific research.

In the last two decades, the egg industry has entered a third stage of structural evolution. This stage has involved reintegrating various functions vertically and horizontally under an overall management. While economies of scale and the need for greater utilization of capacity have forced a general trend toward fewer and larger units, other forces have promoted a similar trend toward large-scale coordination. Among these forces are: the possibilities for accelerating the adoption of production technology; the need for increased product standardization to supply mass-merchandising outlets; the need for a way of more effectively meeting the capital requirements of a mechanized and commercialized agriculture; and the need to obtain greater bargaining power and promote more orderly marketing. Conglomerate integration has also moved into egg production, including the input-supplying segments of the industry, as a means of minimizing risk and assembling financial strength. This development is not yet as widespread in egg production as in broiler production, but it is continuing.

Following a pattern similar to developments in the broiler industry after World War II, contract production and financing of egg production by input-supplying and marketing firms increased rapidly during the late 1950's and 1960's. As with broiler production, the tendency has been for contracting to supplant looser financing arrangements, and for more contracts to stress flat-fee or production-efficiency payments rather than market prices, in determining producer returns.

Also during the 1950's and 1960's, there was an expansion of quality-control programs and marketing agreements. But these remain somewhat unique for eggs. Under quality-control programs, the packing plant establishes a list of desired practices relating to the management and feeding of layers, the strains of birds to be kept, and the gathering and holding of eggs. These practices may be required or recommended for producers; flock supervisors may visit farms at given intervals to check on compliance. With marketing agreements, the packing plant attempts to get producers to agree to sell all or a given share of their eggs to the plant. The effort is essentially one to achieve a stable volume for the packing operation. With contract production, the contractor typically handles or arranges for marketing the eggs. Thus, an element of stability in plant volume is added for the contractor's plant or the plant to whom he sells.

Specialized egg-marketing cooperatives, and other types of cooperatives that handle eggs as a sideline, have long played an important role in packing and marketing eggs for producer-members. Some of these cooperatives still handle producers eggs in the quantities and qualities that producers choose to sell through them. Other cooperatives have instituted quality-control programs and concluded marketing agreements with their producers. The pricing basis for producers under quality-control programs or marketing agreements is often different from that for those who use the cooperative to dispose of surpluses of particular grades and sizes. Cooperatives also sell major production inputs, such as feed, as well as equipment, supplies, and building materials. Some engage in financing producers and in contract production. The newer types of cooperative organizations which have emerged in recent years generally stress market information, market stabilization, and bargaining activities rather than operating functions.

A substantial number of large-scale, owner-integrated egg enterprises have been developed during the last two decades. At the highest level of integration, these enterprises combine production, hatching, feed milling, and egg packing. In others, production and one or more other functions are combined. Often these enterprises are so large and well balanced that no connection with other firms exists except in procuring raw inputs and selling the final product. At a lesser level of coordination, quasi-integration may be practiced by several large producers. Some examples of the latter include groups who buy feed in volume, are the sole suppliers to a packing plant, or jointly operate units performing other functions.

In recent years, other firms important in egg production have "gone public" and their stocks are regularly quoted. Some firms are already engaged in egg production and other activities in more than one region of the country, and others are joining this group through expansions, acquisitions, and mergers. It is also likely that, following similar developments in the poultry industry, additional egg industry firms will be absorbed by conglomerate organizations engaged in agricultural and nonagricultural activities.

The Extent of Various Kinds of Integration and Coordination

Comprehensive and continuing data series to reveal ongoing changes in various kinds of integrated and coordinated arrangements are generally lacking. However, secondary data and individual State studies do provide some measurements of these developments at particular points in time.

Census and other data indicate that contracting is much more prevalent in the South and West than in other regions (table 40). However, the extent of contracting, as well as its form, varies not only among regions but among States within a region.

In the North Atlantic region, contracting is more prevalent in Northern New England than in Southern New England or the Middle Atlantic States. In Maine, 53 percent of the commercial egg farms and 42 percent of layers were under contract production programs in 1968, compared with 35 and 28 percent, respectively, in 1963 (12). While only 15 percent of New Hampshire's commercial egg farms and 16 percent of layers on these farms were under contract in

Table 40.--Measures of integration and coordination in the market egg industry, by region

Region	Eggs sold on contract in 1964 as percentage of U.S. average <u>1/</u>	Chickens on hand age 4 months or over as percentage of all chickens in flocks of 5,000 or more, 1964 <u>2/</u>	Eggs sold by co-ops as percentage of total eggs produced, 1962-66 average <u>3/</u>
	Percent	Percent	Percent
North Atlantic	67	10.3	20
East North Central:	42	4.8	14
West North Central:	19	2.0	10
South Atlantic	147	14.4	16
South Central	177	23.1	8
Western	131	45.0	19
United States	100	13.9	14

1/ Estimated by Econ. Res. Serv. from Census and other data.

2/ Census data.

3/ Estimated by Econ. Res. Serv. using data from Farmer Coop. Serv. and Cons. and Mktg. Serv.

Source: Econ. Res. Serv., U.S. Dept. Agr., prepared from above series.

1964 (16), the proportions under contract have since increased. A New York survey in 1964 indicated 40 percent of layers were under contracts or agreements, but only 4.6 percent were in contract egg production. In addition, 11.4 percent were under financing agreements, 21.2 percent under egg-marketing agreements, and 2.8 percent under both of these (24, p. 5). New Jersey had virtually no contract production in 1964 (36).

Contracts and agreements are believed to be more prevalent in such States as Indiana, Michigan, and Missouri than in most others in the North Central region. Yet in total, such arrangements--particularly for contract production--are less common in this region than in other surplus regions. In 1961, about 15 percent of Indiana's layer population was involved in varying types of contractual arrangements (17, p. 1). By 1967, 19 processors, handling half of Indiana's eggs, were procuring over half their eggs through contract production (39, p. 2). In 1964, 40 to 50 percent of Missouri's eggs were produced under contracts and agreements, but most of these were marketing contracts only (36). Contract production in Iowa was about 10 percent of total production in 1967 (37).

Sample information suggests contract production accounted for one-third of Georgia's egg output in 1959-64 (10, p. 34; 36) and up to 35 to 40 percent in 1967 (37). While only 5 to 10 percent of Alabama's table eggs were produced and marketed under contract in 1959 (14, p. 6), 45 percent were under contract

by 1964 (36). By 1965-66, at least 35 percent of table egg production in Louisiana was under a contract system (40, p. 51). In Mississippi, contract production, which accounted for only 2 percent of commercial layers in 1956, accounted for one-third by 1959 (33, p. 3), and the current level is probably much higher. In Arkansas, those firms with contract growers accounted for 75 percent of all production included in a 1964 survey (9, p. 10).

While no overall direct measurements of the development of large owner-integrated complexes are available, some indication of this development can be suggested. Such units are most likely to have large flocks of laying hens. According to the 1964 Census of Agriculture, flocks of 50,000 or more birds are most common in the Western region (particularly in the Pacific Coast States and next most common in the South and the North Atlantic region. Fewer flocks are so large in the Midwest (table 40). Figures on flock size tend to support statements by many industry people and research workers that most of the large owner-integrated complexes are on the West Coast, in the South, and in the Northeast.

An enumeration of egg-marketing agencies was made in 1966 in the eight southern States of Georgia, North Carolina, Arkansas, Alabama, South Carolina, Virginia, Tennessee, and Oklahoma. The 283 firms handling 400 cases or more weekly handled about 66 percent of farm production of the eight States--nearly 16 percent of U.S. output. Over three-fourths of the firms were either producer-processors or processors, 8 percent were producers only, 7 percent contractors, and 9 percent distributors. About half the 283 firms were in other businesses besides egg production or egg handling. Forty-two percent operated feed mills, 14 percent hatcheries, 5 percent poultry-dressing plants, and 7 percent other businesses, such as selling started pullets and running retail feed stores and farm supply stores (5, p. 3). Of particular interest is the extent of integration of input-supplying with production and processing.

Data from the 1966 study were used to derive the estimates in table 41. While the estimates may be only approximate, they do suggest the large and probably growing importance of wholly owned flocks as a source of eggs for large firms. These estimates may also suggest that wholly owned flocks may be growing relatively faster than contract flocks as a supply source. In fact, such flocks may be replacing contract production in some areas.

The development and extension of large owner-integrated complexes and contract production seem to be associated with a high rate of expansion of egg production. Such a rate of expansion has occurred in the Pacific Coast States and in the South, as well as in a few States in other areas.

The relative importance of cooperatives in various regions is not as clearly identified with relative increases or decreases in regional egg production (table 40). Cooperatives sold larger shares of regional egg production in the North Atlantic and Western regions than elsewhere in 1962-66. Production in the former region has declined since the mid-1950's, while in the latter region it has risen. Thus, the effect of cooperatives in egg-handling operations has probably been overshadowed by other factors.

Table 41. -Percentage distribution of egg marketers supplies from wholly owned and contract flocks, selected States, 1966

State	Percentage of total eggs to egg marketers from--		
	Own flocks	Contract flocks	Total
	Percent	Percent	Percent
Georgia	43.9	19.2	63.1
North Carolina ...:	39.5	16.0	55.5
South Carolina ...:	50.8	18.4	69.2
Virginia	36.6	9.5	46.1
Tennessee	46.6	33.6	80.2
Alabama	37.4	35.5	72.9
Arkansas	40.1	37.0	87.1
Oklahoma	18.0	28.7	46.7
8 States	41.2	25.8	67.0

Source: Derived from data in Buck, J. T., "Survey of Egg Marketing Agencies in 8 Southern States," Va. Polyt. Inst., D.A.E. Res. Rpt., Feb. 1968. Numbers of firms multiplied by midpoints of frequency intervals and accumulated to derive above estimates.

Several new cooperative-type organizations were organized in the middle and late 1960's. These were mainly concerned with market information, market stabilization, and bargaining activities rather than with the more traditional packing and distributing activities in which most older cooperatives were engaged. In 1966-67, one new organization, operating in the South, represented about one-third of egg production there. Another represented about one-fourth of New England table egg production. A third organization represented 70 to 75 percent of egg production in Southern California and Arizona. These organizations, plus others like them in the East, Midwest, and Pacific areas, joined together in a nationwide federation in 1968. By mid-1969, the federated cooperative claimed to represent 35 percent of producers and 50 percent of commercial egg production in the United States. Many individuals and firm members are engaged in packing and distributing, but the overall federation is not. Rather, its functions are an extension of those that concerned the individual organizations before they joined the federation.

EXTERNAL FACTORS AND REGIONAL SHIFTS IN EGG PRODUCTION

Several external factors have affected the egg industry along with all other industries. These factors may have substantially influenced the direction and rate of development of the egg industry within various regions.

Capital Availability

To date, it has not been possible to develop any good statistical indicators on capital availability. However, it is apparent that capital must have been readily available to the egg industry in those regions where rapid expansion has occurred.

Moreover, an area like the Midwest, which decreased in importance in egg production during the 1950's and 1960's, would require substantial commitment of capital to undertake an industry modernization program. Many existing facilities might have to be written off, even though they may not yet be fully depreciated. Confidence in the profitability of egg production and supporting activities would certainly have to be increased before capital would be made available.

Investors and lenders might examine: (1) the comparative prospects of individual enterprises within an area; and (2) the area's overall future prospects for egg production or other business endeavors. The comparative performances of different regions in the recent past could be considered by lenders, making it more difficult for declining areas to obtain capital than for expanding areas to do so.

Other Poultry Industries

Examination of regional trends in cash receipts (deflated by price levels) from egg and poultry production reveal significant contrasts (table 42). Cash receipts from eggs have declined in the North Atlantic region and the Midwest and increased in the South and West.

Cash receipts from broilers and farm chickens have increased slightly in the North Atlantic region since 1955, but this reflects growth localized in a few States. Receipts have declined in the Midwest and increased moderately in the West and substantially in the South. Cash receipts from turkey enterprises have increased in all regions except the North Atlantic since 1955.

Thus egg, chicken, and turkey production have all been attractive alternatives in the South and West. In the South, experience with integrated production of broilers has been increasingly adapted to egg and turkey production. The area has also had the advantage, in expanding egg and turkey production, of external economies available from institutions involved in the large and efficient broiler industry. The rise of the West, particularly California, in egg production is based on large unit size and efficiency within the industry itself. The Midwest has evidently had a better competitive position on turkeys than on eggs or broilers. Hence, the turkey industry there has grown while the egg and broiler industries have shrunk.

Other Agricultural Enterprises

The agricultural sector has grown in all regions but the North Atlantic since 1955, based on cash receipts deflated by price levels. Major livestock enterprises have grown considerably in all but the North Atlantic and East North Central regions. Much of the growth has been in cattle and calves, in response to increased demand for beef.

Table 42.--Cash farm receipts from selected poultry enterprises, by region, selected years 1/

Product and year	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western
	<u>Million dollars</u>					
Eggs:						
1955	397	287	354	165	167	217
1960	361	267	317	266	234	252
1966	325	248	247	400	389	287
1967	332	256	227	440	461	303
Broilers and farm chickens:						
1955	133	80	59	263	158	59
1960	142	68	49	478	370	74
1966	142	50	40	715	681	99
1967	148	49	42	732	700	110
Turkeys:						
1955	24	36	70	36	23	68
1960	18	50	117	30	36	97
1966	22	70	154	67	70	119
1967	23	70	169	75	90	133

1/ Receipts are dollar receipts deflated by average farm prices.

In all regions, deflated total cash from crops has increased since 1955. However, the rate of increase has been less in the South than elsewhere. The reason for this becomes obvious upon consideration of groupings of major crops like corn, wheat, soybeans, cotton, and tobacco, and a few enterprises highly important to particular regions. In the South, cotton and tobacco income has been stabilizing and declining, while income for major Midwestern and Plains area crops--corn, soybeans, and wheat--has been holding up and even increasing.

Hence, the South has found egg and poultry enterprises a desirable alternative. On the other hand, the Midwest, except in the case of turkey production, has found other alternatives more attractive than eggs and poultry.

Wage Rates and Employment

Employment in manufacturing has risen a third or better in the South and West since 1955, about a fifth in the West North Central region, less in the East North Central region, and hardly at all in the North Atlantic region. During the same period, manufacturing wage rates have risen more than 50 percent in all regions. But these changes have not yet become a critical influence. Absolute gains in manufacturing wage rates were significantly less in the South than elsewhere, and Southern wage rates in manufacturing are still well below those in other regions.

Farm wage rates have also shown material gains in all regions since 1955. The percentage increase for 1955-67 ranged from 35 percent or more in the Midwest to about 45 percent or more in the Western and North Atlantic regions. However, farm wage rates in the South rose 70 to 75 percent during the same period. The absolute gains were 35 to 37 cents an hour in the Midwest, and 44 to 47 cents an hour in other regions. Hence, farm wage rates in the South, despite the larger percentage increases, are still substantially below those in other areas and remain an advantage to the South in terms of production input costs.

By 1967, farm wage rates in the South were equal to a larger percentage of manufacturing wage rates than in 1955. In other regions, farm wage rates were equal to a lower percentage of manufacturing wage rates than they had been in 1955. Thus, farm employment in the South has not become as unattractive on a relative basis as it has elsewhere.

Rising farm wage rates, as well as more off-farm movement due to greater recognition of the spread between farm and off-farm wages, will tend to promote more mechanization and fewer and larger units in egg production. The Western and Southern industries are already further along in these respects than that in the Midwest. Thus, higher Southern wage rates would be only a partial deterrent to further expansion, unless the Midwest became equally efficient.

FUTURE DEVELOPMENTS

Based on projections of trends since the mid-1950's, further, gradual declines would be expected in the shares of total U.S. production from the North Atlantic region and the Midwest. The shares coming from the South would increase, correspondingly, but at a lower rate than since the mid-1950's. The Western region's share would increase slightly, then level off. Gains would be more noticeable in the shares that the South and the West would have of total volume of eggs going to breaking plants. The share of the Midwest would decline. These projections assume that a higher percentage of total egg output would be used for breaking in the South and West and a lower percentage in the Midwest than at present.

Under these projections, the Midwest would not recover its former position as the only major source of eggs for deficit regions. And unless there are rapid developments toward greater unit size and overall efficiency, more coordination, and more orderly marketing, the Midwest will lose more ground. So long as other agricultural enterprises offer better prospects, there will be little reason for a widespread shift to eggs in the Midwest. The Midwest surplus would go mainly toward the Northeast.

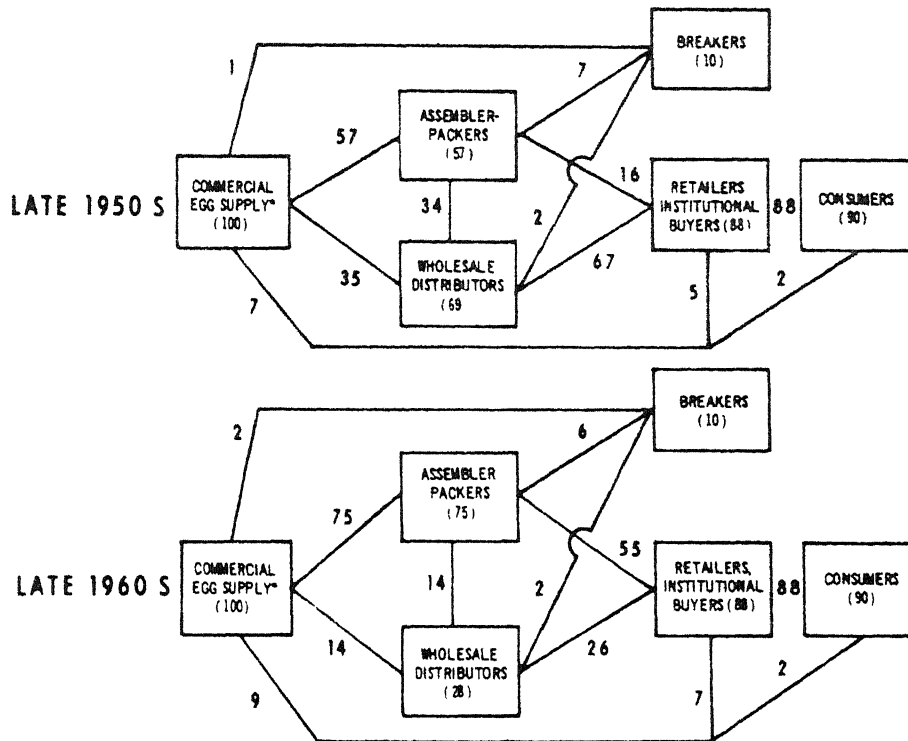
The South's egg industry, producing a larger surplus of eggs, would compete primarily with eggs from the Midwest in the Northeast, and with eggs from the West in the Southwest and Mountain areas. However, the rate of expansion in the South would decelerate. The South would have a substantial breaking industry, and except on the fringes where it borders the Midwest, would break most eggs not going to table egg outlets.

The Pacific area would take care of its own needs and fill much of the deficit needs in the Southwest and Mountain areas, with the Western industry, despite some disadvantages, remaining large, efficient, and aggressive. But some areas further east would become less important as outlets for that region.

The Northeast's production would remain deficit overall, but the region will support a substantial and efficient local industry. New England would take care of its own remaining brown-egg preference. On white eggs, however, the South and Midwest would make up the deficit.

Predictions about the future position of various regions in the egg business are hazardous at best. It is easy to locate factors which may have explained past developments, but difficult to give them precise weightings. Also, the role of individuals and institutions is difficult to appraise. The decisions and ability of entrepreneurs will be important in influencing further developments, and administrative and political decisions could have major effects. In addition, there may be new factors, as yet unidentified, which would make predictions based on past trends highly questionable. Additional studies, involving alternative sets of assumptions, may offer better indications of what the future holds.

COMMERCIAL EGG MARKETING CHANNELS



* PERCENTAGE OF U S PRODUCTION EXCLUDING EGGS USED FOR HATCHING EXPORT AND CONSUMPTION ON FARMS

Table 5.--Annual surplus and deficit in egg production, by region, selected years

Region	Surplus (+) or deficit (-) of egg production in-- <u>1/</u>						
	1950	1955	1960	1963	1966	1967	1968
	<u>1,000 cases</u>						
New England	- 2,269	- 2,269	- 2,694	- 1,997	- 1,858	- 2,061	- 2,017
Middle Atlantic ..	-11,014	- 9,200	-11,139	-12,514	-14,108	-15,122	-15,647
East North Central:	+ 1,303	- 419	- 3,444	- 5,566	- 8,283	- 8,839	- 9,028
West North Central:	+37,156	+33,742	+28,469	+21,039	+16,461	+16,225	+13,242
South Atlantic ...	- 8,956	- 9,667	- 4,369	+ 300	+ 3,519	+ 5,369	+ 5,895
East South Central:	- 1,575	- 2,336	- 250	+ 2,377	+ 4,205	+ 5,506	+ 5,619
West South Central:	- 911	- 4,994	- 4,253	- 2,450	- 211	+ 953	+ 1,244
Mountain	- 406	- 1,625	- 2,389	- 2,786	- 3,050	- 3,139	- 3,136
Pacific	- 1,983	- 997	+ 1,086	+ 2,947	+ 3,825	+ 4,208	+ 4,686

1/ Assumes uniform per capita consumption in all regions.

Source: Farmer Cooperative Serv., U.S. Dept. Agr.