Research
to Improve
Reporting
on

EGGS

MOVING INTO COMMERCIAL TRADE CHANNELS

UNITED STATES DEPARTMENT OF AGRICULTURE
MARKETING ECONOMICS DIVISION
ECONOMIC RESEARCH SERVICE ERS-11

PREFACE AND ACKNOWLEDGMENTS

Fundamental changes in the production of poultry and eggs, and in the structure of the industry that moves these products from farmers to consumers, have resulted in demands for improved market information. In recent years, a broad program of research has been conducted to achieve this purpose.

This report summarizes the results obtained in the second phase of a research project designed to improve market news reporting of poultry and egg movements from farms into commercial trade channels at the earliest stage of marketing.

The Commercial Poultry Slaughter Report was developed under the first phase of the program, the Commercial Egg Movement Report under the second phase. Both are weekly reports for the continental United States, issued on a current basis by the Dairy and Poultry Market News Branch.

Egg assemblers who cooperated in supplying information made possible the development of the Commercial Egg Movement Report. The Dairy and Poultry Market News Branch of the Agricultural Marketing Service also assisted in collecting data from egg assemblers.

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SUMMARY

Research techniques have increased the accuracy, scope, and usefulness of dairy and poultry market news information in recent years. This publication describes and evaluates the information provided by one such report, the weekly Commercial Egg Movement Report. Development of this national report was the second phase of a research project in which the Commercial Poultry Slaughter Report was developed in the first phase. Both reports are published weekly by the Dairy and Poultry Market News Branch.

Two national surveys, one in 1957, the other in 1958, were conducted in developing the Commercial Egg Movement Report. The first survey provided information on the number, size, and location of 15,029 firms, the second on 13,395 firms. From results of the first survey, a sample of egg assemblers was selected to report weekly data on eggs received from farmers and those delivered to egg breakers.

The Commercial Egg Movement Report currently provides movement information on a reported volume of over 1 million cases of eggs (30 dozen per case) collected from over 700 commercial egg assemblers each week. For this report a commercial egg assembler is defined as a firm that: (1) receives eggs directly from farmers or indirectly through truck pickup routes and buying stations, and (2) receives an average of 400 or more 30-dozen cases of eggs a week from all sources. The report provides timely information on the movement of eggs from farms into commercial trade channels, thus assisting producers, assemblers, and distributors in appraising current and future market conditions for both table eggs and eggs delivered to breakers.

After the 1958 survey, it was found that 11,487 firms had responded to both surveys, and reports of individual firms were matched with reports they had submitted the previous year. This comparison showed that firms handling 400 or more cases of eggs per week increased from 7.3 percent of all matched firms in 1957 to 8.0 percent in 1958. These firms accounted for 74 percent of the eggs handled by all matched firms in 1957; in 1958 they accounted for 79 percent. In contrast, firms handling from 1 to 199 cases a week declined from 79.5 percent of the matched plants in 1957 to 68.8 percent in 1958. The volume handled by these relatively small firms also decreased, from 15 percent of the total in 1957 to 11 percent in 1958.

Between the two surveys, over 1,100 firms handling from 1 to 399 cases of eggs a week either went out of business or discontinued handling eggs. Over 600 of these firms were located in the East North Central Region, while 232 were in the West North Central Region. There was a definite shift of firms from small to larger volume operations, particularly in the South Atlantic Region.

The weekly Commercial Egg Movement Report was first released on a matched-plant basis (see definition, footnote 3, page 5) on January 14, 1958. It should continue to be issued on this basis as long as the structure of the industry is still changing so rapidly. On March 8, 1960, responsibility for preparation of the report was transferred from the Marketing Economics Research Division to the Dairy and Poultry Market News Branch.

RESEARCH TO IMPROVE REPORTING ON EGGS MOVING INTO COMMERCIAL TRADE CHANNELS

By Fred L. Faber and John R. Pedersen
agricultural economists
Marketing Economics Division
Economic Research Service

INTRODUCTION

Egg assemblers, egg breakers, trucklot shippers, storers, wholesale receivers, jobbers, and distributors of eggs are vitally interested in week-to-week changes in the movement of eggs from farms into commercial trade channels. This information helps them in appraising the current supply situation. It also gives them a basis for forecasting future trends in commercial supplies and possible effects on prices.

Early efforts to provide such information began in 1931 in the Midwestern States. In the 1940's, area reports were added for eastern egg auctions and for Pacific Coast primary markets. Since then, changes have occurred both in production areas and in the structure of the industry.

Thus, for many years members of the egg and poultry industry had recommended that research be conducted to improve and expand the reports on movements of poultry and eggs into commercial channels. Research to help provide this service, begun in 1953, was divided into two phases: The first, limited to poultry, resulted in the national weekly Commercial Poultry Slaughter Report; 1/ the second, restricted to eggs, led to the national weekly Commercial Egg Movement Report.

In both phases of this research, a new weekly report was developed first on an experimental basis. Then the reports were carried forward on a service basis by the Dairy and Poultry Market News Branch. Area reports on egg receipts for eastern egg auctions and Pacific Coast primary markets were discontinued soon after the Dairy and Poultry Market News Branch assumed responsibility for preparing the Commercial Egg Movement Report for the continental United States. The weekly report Egg and Live Poultry Receipts -- Central West was discontinued in 1952.

A national survey of egg assemblers to obtain information on their number, size, and location was conducted as a first step in developing an improved report on egg receipts. Findings of this survey were presented in an earlier publication. 2/

A sample of egg assemblers was selected from respondents to the initial survey. Information from these firms formed the basis for reporting receipts from producers and eggs delivered to breakers. Data were summarized weekly by matching reports for individual firms reporting in both the current and previous week. The first Commercial Egg Movement Report for the continental United States was issued on

1/ Faber, Fred L. Development of the Commercial Poultry Slaughter Report. U. S. Dept. Agr., Agr. Mktg. Serv. Rpt. 174, Mar. 1957. Faber, Fred L. Commercial Poultry Slaughter Plants in the United States. U. S. Dept. Agr., Agr. Mktg. Serv. Rpt. 379, Apr. 1960.

2/ Faber, Fred L., and Pedersen, John R. Number, Size, and Location of Egg Assemblers. U. S. Dept. Agr., Agr. Mktg. Rpt. 311, May 1959.

January 14, 1958 by the Marketing Economics Research Division. On March 8, 1960, responsibility for preparing the weekly report was transferred to the Dairy and Poultry Market News Branch.

Even though the feasibility of developing a national weekly report on the movement of eggs from farms into commercial trade channels has been demonstrated, several problems remain. For example, the second national survey of egg assemblers conducted in 1958 indicated considerable changes had occurred in number, size, and location of these firms resulting from changes in the structure of the industry. Since capital requirements are low, assemblers can easily enter or leave the industry. Substantial year-to-year changes may therefore be expected, making it difficult to identify new firms and keep abreast of changes among nonrespondents for the weekly report. Because of these problems it was recommended that the report be continued on the matched-plant basis. 3/ Several years hence, when presumably the structure of the industry will have become more fixed, it may be feasible to enumerate a statistical universe and prepare weekly estimates of total movements from a carefully selected sample of respondents.

PREVIOUS WEEKLY REPORTS

The Dairy and Poultry Market News Branch for many years collected weekly information on receipts of eggs from farmers in three geographical areas. The report Egg and Live Poultry Receipts -- Central West, initiated in 1931, was terminated in 1952 one year prior to when the Department undertook research to improve weekly volume movement information that led to the development of the Commercial Poultry Slaughter Report. The other two area reports, Weekly Receipts at Eastern Egg Auctions and Assembly Plants, published from January 1943 to March 1960, and Receipts of Eggs at Pacific Coast Primary Markets, issued from January 1944 to March 1960, were terminated after the new Commercial Egg Movement Report had become well established.

Concern with improving the series on egg receipts had been simmering for many years. As early as 1947, the Poultry Industry Advisory Committee, established under the Research and Marketing Act of 1946, recommended that research to improve the series be undertaken. 4/ When the Department of Agriculture initiated such research in 1953 it was decided to concentrate first on improving the poultry series and, second, on improving the egg series.

NEED FOR AN IMPROVED REPORT

Since eggs are produced and marketed nationally, a report for the entire continental United States was needed. Some Southeastern States, for instance, had expanded commercial egg production and were becoming a factor in the consuming markets of other regions as well as their own. The Southeast and other areas had

3/ Matched-plant basis is obtained by comparing a firm's reports for two consecutive weeks, then totaling the number of cases of eggs received from farmers and delivered to breakers by a group of such firms; from these totals, week-to-week percentage changes are computed. The same procedure is used later to compare the current week with the same week of the previous year.

4/ Administrator, Research and Marketing Act, and Poultry Advisory Committee. Poultry Problems and Proposed Program of Attack under the Research and Marketing Act of 1946. U. S. Dept. Agr., May 21, 1947.

not been included in previous reports.

To assist the entire industry in arriving at prices and price changes, accurate weekly information was also needed on eggs entering commercial trade channels. Considerable criticism had been directed in recent years against the base price quotation system of determining values for eggs. 5/ One recommendation made to improve that system was to improve the information on the movement of eggs from farms into trade channels.

Of the three main outlets for market eggs -- table use, breaking, and storage -- information was also needed on the first two. In 1959, more than two-thirds of the eggs produced were consumed in homes as shell eggs (fig. 1); restaurants, hospitals, and other mass feeders used 13 percent; commercial breaking plants converted 10 percent into liquid, frozen, or dried eggs; and 5 percent were used for hatching. Movement of shell eggs to storage has declined through the years, and at present is relatively small in comparison with other outlets for egg assemblers. Thus, most eggs handled by assemblers go to outlets requiring fresh table eggs.

Although egg breakers accounted for only 10 percent of the supply in 1959, they can be in and out of the market more than once a month and represent an important egg outlet, particularly during the spring months. In addition, a large proportion of breaker plants are located in the West North Central Region, the major egg surplus area. Thus, the rise or fall in egg purchases by breakers has significant seasonable repercussions on both egg movements and prices. Therefore, weekly information was needed on movements of eggs to breakers as well as to table egg outlets. 6/

On the supply side, another factor was the dumping of hatching eggs into table egg markets when the demand for chicks dropped sharply. Initially, an effort was made to find out from assemblers if hatching eggs were being diverted to table egg markets, and if so, how many. This effort, however, was subsequently abandoned to simplify the reporting schedule and increase the response from firms queried in the mail survey.

ESTABLISHMENT OF AN IMPROVED NATIONAL REPORT

To establish a new national report it was necessary to: (1) obtain information on the number, size, location, and kinds of firms that assemble eggs, and (2) develop a point of measurement so that trends in egg movements could be discerned with a minimum recounting of the same eggs.

Connecticut, Georgia, and Iowa were selected for a pilot study because of their widely differing patterns of egg production and marketing. First in these States, then in the remaining continental States, egg assemblers were surveyed by mail (a sample of nonrespondents in pilot study States being contacted by telephone or personal interview), and a sample of firms was selected from which weekly reports of egg movements were solicited by mail.

5/ For a discussion of base price quotations see Gerald, J. O., and Pritchard, N. T. Pricing Eggs at Wholesale in New York City. U. S. Dept. Agr., Agr. Mktg. Serv., Mktg. Res. Rpt. 210, Jan. 1958.

6/ See appendix for additional information. For further discussion of the role of egg breakers see: Faber, F. L., Pedersen, J. R., and Gerald, J. O. Reporting Egg Prices at Shipping Points in Iowa and Minnesota. U. S. Dept. Agr., Agr. Mktg. Serv., Mktg. Res. Rpt. 445, Jan. 1961.

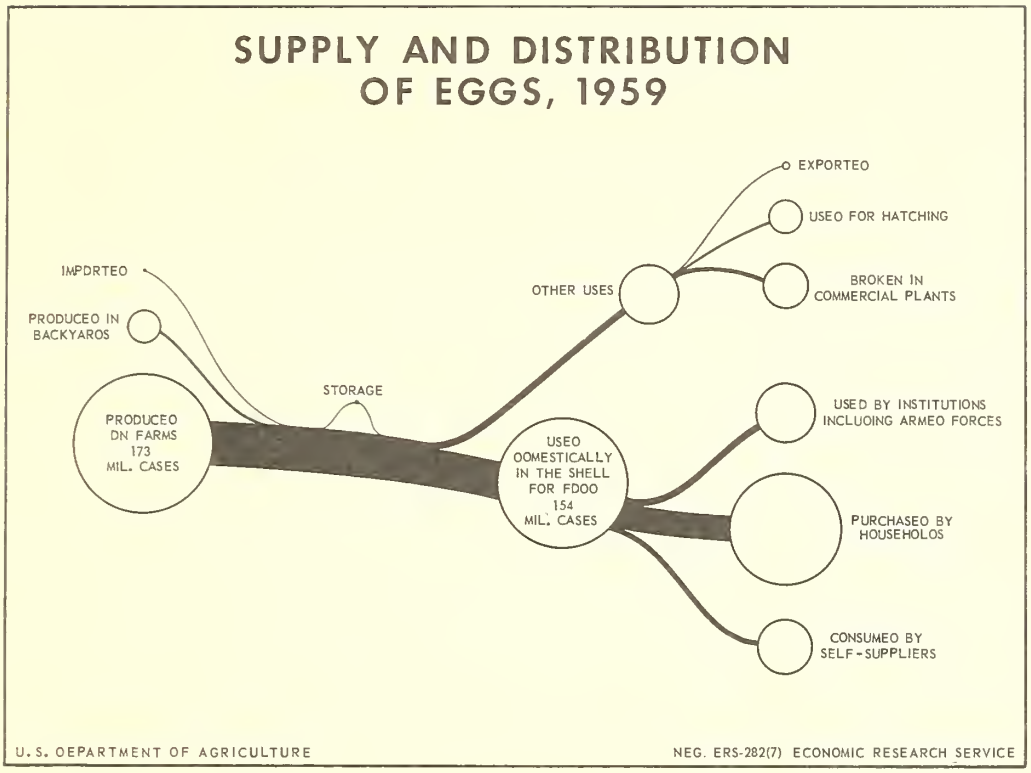


Figure 1

Industry Survey

In the first national survey of the industry, conducted principally during 1957, 25,730 firms were solicited for information by mail. After three mailings, completed questionnaires had been returned from 15,029 firms which handled eggs. A total of 5,008 questionnaries were also returned either by firms reporting they were out of business or did not handle eggs or by the Postal Service where firms were out of business or could not be located.

The most striking information developed from this survey was the large number of relatively small firms receiving eggs from farmers. Of the 15,029 egg handlers responding, 13,885 reported they received eggs from farmers, while 1,144 did not although they did handle eggs. In the first group, 11,901 or 86 percent handled less than 200 cases of eggs per week and accounted for only 14 percent of the eggs received from farmers. In contrast, less than 4 percent of the 13,885 firms handled 1,000 or more cases per week but accounted for 60 percent of the egg receipts from farmers. 7/

From the sample of nonrespondents interviewed in the pilot States, it was concluded that the original mailing lists, obtained from various sources, differed greatly as to accuracy of definition, currency, and completeness. This conclusion was further substantiated when only 15,029 active egg-handling firms replied of 25,730 firms surveyed. This experience revealed that there would be a continuing problem in keeping abreast of changes among firms and in maintaining an accurate

7/ See footnote 2.

up-to-date list of firms that would qualify for the definition of a statistical universe. Yearly surveys of egg assemblers who are not reporting weekly will be desirable so that current lists can be maintained.

Commercial Egg Assemblers Defined

Since eggs move through a multiplicity of marketing channels, weekly information on all movements would be extremely costly to obtain. It thus became necessary to develop a practical definition of the kinds of market movements to be covered by the new report. For purposes of the report, commercial eggs were defined as those moving from farms to relatively large volume assemblers and then to distributive outlets or egg breakers. These are not the eggs farmers eat, send to hatcheries, or sell directly to such final users as homemakers, restaurants, or institutions.

A large assembler was further defined as a handler receiving an average of 400 or more 30-dozen cases of eggs a week throughout the year, directly from farmers or indirectly via truck routes and buying stations. This minimum size, while admittedly arbitrary, restricted handlers in the defined universe to a manageable number for reporting purposes and included firms handling the bulk of market eggs moving from farms. It helped also to reduce duplication in counting eggs. Truckload lots of 500 to 600 cases of eggs appeared to be the typical economic unit shipped in interstate commerce by large assemblers. However, the minimum was set at 400 cases to include firms that might be operating temporarily below this typical unit volume.

Sample of Firms

On the basis of the definition established for commercial egg assemblers, a sample of 750 firms was selected for weekly reporting. At the beginning of weekly data collection this included all firms qualifying under the definition and handling 1,000 or more cases of eggs per week, as well as a 50 percent random sample of firms handling 400 to 1,000 cases per week. However, some firms proved unwilling to return the reporting form. It thus became necessary to solicit the cooperation of all commercial egg assemblers to obtain a sufficient number of returns for the weekly report.

Weekly Data Collection

Collection of weekly data from individual firms was started in May 1957 in the pilot study States of Connecticut, Georgia, and Iowa. On the basis of the experience gained, the reporting form was simplified, and in the fall of 1957 coverage was expanded to the remaining 45 States. In January 1958, when a stable response rate had been achieved, regular weekly public release of the report began.

Most weekly reports from individual firms were obtained in response to regular weekly mailings from Washington, D. C., but some were obtained through mail and personal contacts by field offices of the Dairy and Poultry Market News Branch. Regular first class mail was used for respondents east and airmail for those west of the Mississippi River. Incoming data were punched on cards. Each firm's report for the current week was then matched by machine with that for the previous week. After the first year, weekly reports could be compared with the firm's report for the same week in the previous year. Totals obtained for matched firms were used

both in published reports and as a basis for calculating percentage changes from week to week and from the same week a year ago.

During the first 5 weeks of 1958, an average of 458 firms per week returned reporting forms, of which an average of 312 were matched with forms returned in the previous week. Reports of the remaing 146 firms could not be matched, either because they arrived too late for the current week or had not been returned for the previous week.

A year later 51 more firms were cooperating, and more were reporting on time. During the first 5 weeks of 1959, an average of 509 firms returned reporting forms, of which an average of 403, or 91 more than during the 1958 period, were matched with forms from the previous week. The remaining 106 could not be matched because of late or missing reports.

When the Dairy and Poultry Market News Branch assumed responsibility for data collection in March 1960, the work was decentralized to its 35 field offices throughout the 48 continental States. Closer to the industry, market news reporters in these field offices could devote more attention to improving response rates. They could also obtain some late reports by telephone at less expense than from a central office. A further substantial increase was thus achieved in the number of firms cooperating on the report. By September 1960, reports from nearly 650 firms were being matched each week.

Usefulness of Report

The Commercial Egg Movement Report provides current information on the movement of eggs from farms into commercial trade channels at the earliest stage of marketing. It gives week-to-week trends in the volume of eggs received from farmers by egg assemblers, and in the deliveries by assemblers to egg breakers. The remainder of the eggs received by assemblers move predominately into table egg outlets in consuming markets. The report also shows comparisons with the same week a year earlier.

The report is published each Wednesday as part of the Weekly Egg and Poultry Review 8/ and appears in most egg reports issued by market news offices in various cities. Thus, it is available to farmers, egg assemblers, egg breakers, receivers, chainstore organizations, and all other segments of the trade. Several weekly trade papers reprint the report in full or in part.

This weekly information on receipts of eggs from farmers can assist producers and the egg trade in appraising market conditions. Data on eggs delivered to egg breakers, available for the first time on a week-to-week basis, indicate the buying interests of egg breakers.

The report is also used by persons in the industry interested in predicting trends in egg marketing and price movements. In this connection the value of the report is enhanced when used in conjunction with other pertinent information.

8/ By the Dairy and Poultry Market News Branch, Agricultural Marketing Service, U. S. Department of Agriculture, 346 Broadway, New York 13, N. Y.

SECOND NATIONAL SURVEY

A second national survey of egg handlers was conducted principally during 1958 in an effort to: (1) keep abreast of changes in the industry, and (2) provide a further check on those firms that did not respond to the first survey. A total of 22,554 firms were solicited by mail and by personnel of certain field offices of the Dairy and Poultry Market News Branch. At the end of three mailings, and with the reports obtained by the market news reporters, completed questionnaires had been received from 13,395 firms, or 59 percent of the total. In addition, 3,812 questionnaires were received from firms that were out of business, did not handle eggs, or could not be located by the Postal Service.

Of the egg assemblers responding, 83 percent handled fewer than 200 cases of eggs per week in 1958 and accounted for about 12 percent of the eggs received from farmers. Four percent of the reporting firms handled 1,000 or more cases per week and accounted for 60 percent of receipts from farmers (table 1). While the number of small firms and the volume of eggs handled declined from the previous year, the number of large firms and the volume handled increased.

Eggs sold from farms in 1958 amounted to 154 million 30-dozen cases. About 83 percent were handled by 12,910 firms responding to the survey. Some of these eggs, in moving through marketing channels, were probably purchased first by relatively small buyers and then resold to larger assemblers. An additional 485 firms reported that they handled eggs, but did not receive any from farmers. These firms received eggs from trucklot shippers and other large-volume handlers in the marketing system. Farmers also sold some eggs directly to hatcheries, retail stores, restaurants, homemakers, and other direct users in addition to the eggs sold to assemblers throughout the continental United States.

As previously noted, commercial egg assemblers are defined for the Commercial Egg Movement Report as firms that receive eggs from producers and handle 400 or more cases of eggs per week from all sources. Using this definition, table 1 shows that 1,159 commercial assemblers handled 77 percent of the total volume handled by the 12,910 assemblers in 1958. Although completed questionnaires were received from only 59 percent of the firms included in the survey, it is likely that the 1,159 commercial egg handlers comprise considerably more than 59 percent of all large handlers, since large firms tend to respond better than small firms to mail surveys. 9/ The location of commercial egg assemblers is shown in figure 2.

The largest number of firms receiving eggs from farmers were located in surplus egg production regions. In terms of total volume of eggs handled, assemblers in the West North Central Region ranked first, East North Central second, Middle Atlantic third, and Pacific fourth (table 2). This is the same ranking as found in the first survey. However, when the findings of the two surveys are compared, the percentage of the total volume of eggs handled declined most in the Middle Atlantic Region and increased most in the South Atlantic Region. This was true for firms of all sizes. These shifts in the relative importance of the Middle Atlantic and South Atlantic Regions are significant and substantiate information received from trade sources on industry trends.

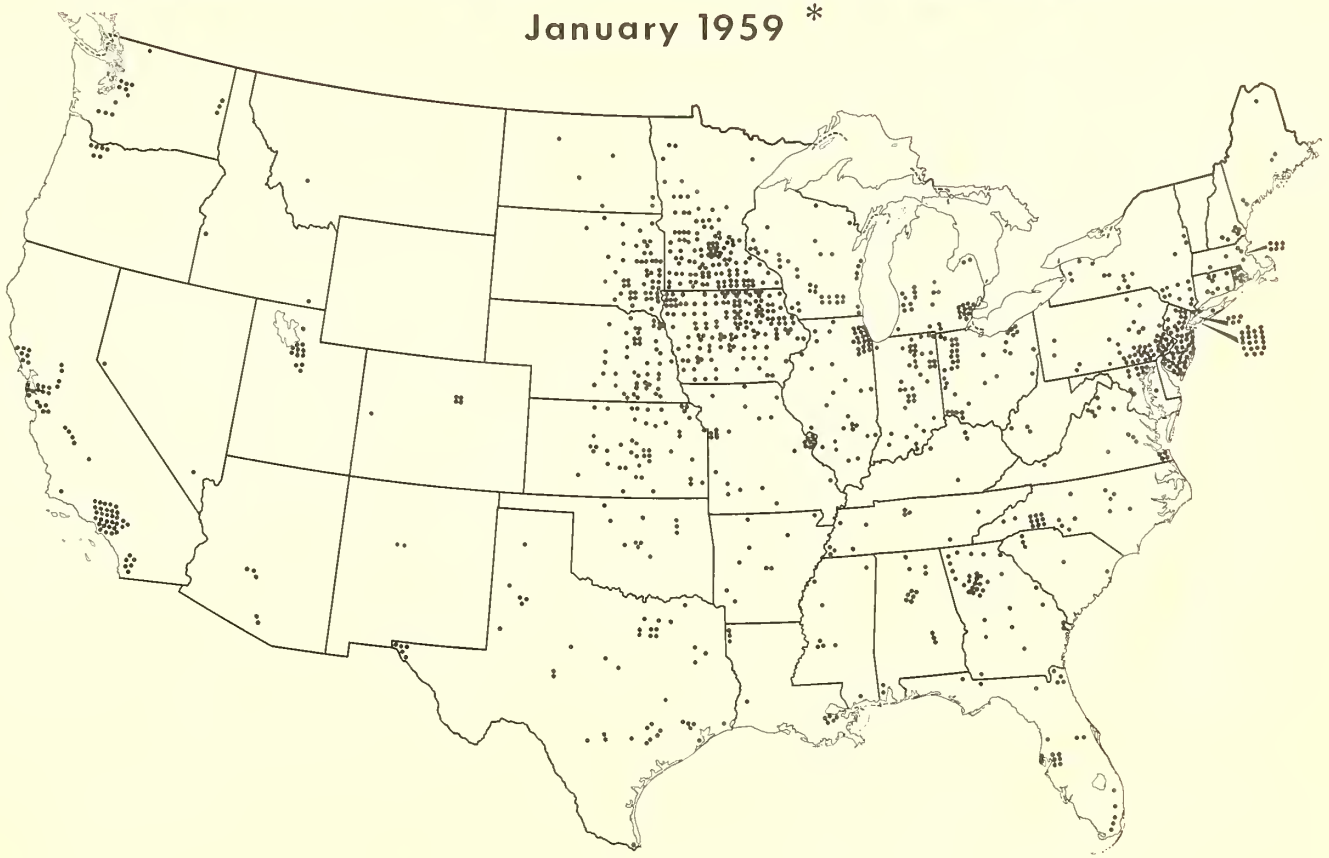
9/ The survey of egg assemblers in Iowa, for example, where a good list of firms was available, showed better response rates from large than from small firms. See reference in footnote 6, table 9, p. 6 .

Table 1.--Egg handlers: Distribution of respondent firms by volume of eggs handled, 1958.

Size group		Firms receiving eggs from farmers			Volume of eggs handled		
Annual volume	Weekly volume						
Cases	Cases	Number	Percent	Cumulative percent	1,000 cases	Percent	Cumulative percent
1 - 10,399	1 - 199	10,759	83.4	100.0	16,116	12.5	100.0
10,400 - 15,599	200 - 299	626	4.8	16.6	7,518	5.9	87.5
15,600 - 20,799	300 - 399	366	2.8	11.8	6,366	5.0	81.6
20,800 - 25,999	400 - 499	186	1.5	9.0	4,220	3.3	76.6
26,000 - 31,199	500 - 599	167	1.3	7.5	4,598	3.6	73.3
31,200 - 36,399	600 - 699	105	.8	6.2	3,495	2.7	69.7
36,400 - 41,599	700 - 799	72	.6	5.4	2,753	2.1	67.0
41,600 - 46,799	800 - 899	70	.5	4.8	3,049	2.4	64.9
46,800 - 51,999	900 - 999	55	.4	4.3	2,706	2.1	62.5
52,000 - and up	1,000 and up	504	3.9	3.9	77,553	60.4	60.4
Totals		12,910	100.0		128,374	100.0	
	400 and up	1,159	9.0		98,374	76.6	

COMMERCIAL EGG ASSEMBLERS

January 1959 *



* *Each dot represents a firm that receives eggs from farmers and handles 400 cases or more per week from all sources.*

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Figure 2

Table 2.--Egg handlers: Distribution of respondent firms by region, and comparison of eggs handled with eggs sold off farms, 1958

Regions	Firms receiving eggs from farmers		Volume of eggs handled		Annual average per firm	Eggs sold from farms		Eggs handled as percentage of eggs sold from farms
	Number	Percent	1,000 cases	Percent	Cases	1,000 cases	Percent	Percent
				All respondents				
New England	104	0.8	3,806	3.0	36,596	7,675	5.0	49.7
Middle Atlantic	508	3.9	16,836	13.1	33,142	20,856	13.5	80.7
East North Central	5,270	40.9	26,142	20.4	4,961	30,628	19.9	85.4
West North Central	3,925	30.4	45,947	35.7	11,706	42,267	27.4	108.7
South Atlantic	577	4.5	9,132	7.1	15,827	14,867	9.6	61.4
East South Central	274	2.1	3,225	2.5	11,770	7,345	4.8	43.9
West South Central	650	5.0	6,229	4.9	9,583	9,452	6.1	65.9
Mountain	444	3.4	2,806	2.2	6,320	3,640	2.4	77.1
Pacific	1,158	9.0	14,251	11.1	12,307	17,438	11.3	81.7
United States	12,910	100.0	128,374	100.0	9,944	154,167	100.0	83.3
				Firms handling 400 or more cases per week (20,800 per year)				
New England	35	3.0	3,411	3.5	97,462	7,675	5.0	44.4
Middle Atlantic	153	13.2	14,743	15.0	96,358	20,856	13.5	70.7
East North Central	189	16.3	19,013	19.3	100,600	30,628	19.9	62.1
West North Central	438	37.8	33,326	33.9	76,086	42,267	27.4	78.8
South Atlantic	111	9.6	6,826	6.9	61,498	14,867	9.6	45.9
East South Central	38	3.3	2,309	2.3	60,775	7,345	4.8	31.4
West South Central	76	6.5	4,316	4.4	56,788	9,452	6.1	45.7
Mountain	29	2.5	1,876	1.9	64,683	3,640	2.4	51.5
Pacific	90	7.8	12,554	12.8	139,485	17,438	11.3	72.0
United States	1,159	100.0	98,374	100.0	84,879	154,167	100.0	63.8

Eggs handled by all firms reporting accounted for 83 percent of all eggs sold from farms in 1958 (table 2). This compares with 82 percent in 1957. Eggs handled by the 1,159 commercial assemblers accounted for 64 percent of 1958 sales off farms, as compared with 62 percent in 1957. The volume handled by commercial egg assemblers as a percentage of eggs sold from farms varied from 79 percent in the West North Central Region to 31 percent in the East South Central Region.

Information obtained in the two national surveys of egg assemblers, and through the weekly reports for the Commercial Egg Movement Report, reveals that the industry is undergoing considerable change. Trends toward large egg producing enterprises at one end of the marketing system, and the growing importance of large food retailing organizations at the other end are having profound effects on the number, size, and location of all types of middlemen handling eggs.

TRENDS IN NUMBER AND SIZE OF FIRMS

A comparison of the two national surveys, using data processing equipment to match reports of individual firms, showed that 11,487 firms had responded to both surveys. It revealed an apparent growth in the number of relatively large volume firms; those handling 400 or more cases of eggs per week increased by 11 percent, from 837 in 1957 to 929 in 1958. Growth among large firms was even more apparent when the volume of eggs handled was compared. Matched firms handling 400 or more cases per week accounted for 69 million cases in 1957; in 1958 they handled 79 million cases, an increase of 14 percent (table 3).

In contrast, firms handling from 1 to 199 cases per week declined from 9,143 firms, or 79.5 percent, of the total in 1957 to 7,897 firms, or 68.8 percent, of the total in 1958. Volume of eggs handled also dropped from 14 million cases, or 15 percent, of the total in 1957 to 11 million cases, or 11 percent, of the total in 1958.

In both surveys, information was obtained from firms that handled no eggs or that received none from farmers; 800 such firms responded both in 1957 and 1958. Most returned the questionnaire but gave no volume data for 1957. Some were new firms that did not handle eggs during 1957, and some were brokers, wholesalers, and others who did not receive eggs from farmers or physically handle eggs. In the 1958 survey, 1,934 firms, including the above 800, reported they did not handle eggs. Useful information had been obtained from these same firms in the 1957 survey, but by 1958 some had already gone out of business or were in the process of liquidation. Some had changed operations and were no longer handling eggs. Some reported but gave no volume data.

TRENDS IN LOCATION OF FIRMS

An analysis of matched firms by geographic region further indicated trends in location of egg assemblers. Over 1,100 small firms (handling from 1 to 399 cases of eggs per week) went out of business or stopped handling eggs between 1957 and 1958. Of these, 608 or more than half, were in the East North Central Region. The West North Central Region was second with 232 such firms (table 4).

Moreover, between 1957 and 1958, 92 firms shifted from small to medium-size operations (400 to 999 cases per week), and 15 expanded from medium to large-scale operations (1,000 or more cases per week). Observations on shifts among size groups are only indicative of actual shifts. For example, some firms may have gone directly from small size to large size.

Table 3.--Egg handlers: Distribution of firms responding to both 1957 and 1958 surveys

Size group		Firms receiving eggs from farmers			Volume of eggs handled		
Annual volume (cases)	Weekly volume (cases)	Number	Percent	Cumulative percent	1,000 cases	Percent	Cumulative percent
1957 respondents							
0	0	800	7.0	100.0	---	0	
1 - 10,399	1 - 199	9,143	79.5	93.0	14,476	15.3	100.0
10,400 - 15,599	200 - 299	435	3.8	13.5	5,560	5.9	84.7
15,600 - 20,799	300 - 399	272	2.4	9.7	4,909	5.2	78.8
20,800 - 25,999	400 - 499	126	1.1	7.3	2,903	3.1	73.6
26,000 - 31,199	500 - 599	126	1.1	6.2	3,545	3.8	70.5
31,200 - 36,399	600 - 699	63	0.5	5.1	2,148	2.3	66.7
36,400 - 41,599	700 - 799	54	0.5	4.6	2,110	2.2	64.4
41,600 - 46,799	800 - 899	36	0.3	4.1	1,585	1.7	62.2
46,800 - 51,999	900 - 999	55	0.5	3.8	2,720	2.9	60.5
52,000 and up	1,000 and up	377	3.3	3.3	54,433	57.6	57.6
Totals		11,487	100.0		94.391	100.0	
20,800 and up	400 and up	837	7.3		69.444	73.6	
1958 respondents							
0	0	1,934	16.9	100.0	---	0	
1 - 10,399	1 - 199	7,897	68.8	83.1	11,380	11.3	100.0
10,400 - 15,599	200 - 299	462	4.0	14.3	5,558	5.5	88.7
15,600 - 20,799	300 - 399	265	2.3	10.3	4,610	4.6	83.2
20,800 - 25,999	400 - 499	163	1.4	8.0	3,666	3.6	78.6
26,000 - 31,199	500 - 599	140	1.2	6.6	3,887	3.9	75.0
31,200 - 36,399	600 - 699	79	0.7	5.4	2,638	2.6	71.1
36,400 - 41,599	700 - 799	62	0.5	4.7	2,376	2.4	68.5
41,600 - 46,799	800 - 899	48	0.4	4.2	2,103	2.1	66.1
46,800 - 51,999	900 - 999	45	0.4	3.8	2,213	2.2	64.0
52,000 and up	1,000 and up	392	3.4	3.4	62,107	61.8	61.8
Totals		11,487	100.0		100,537	100.0	
20,800 and up	400 and up	929	8.0		78,990	78.6	

Table 4.--Egg handlers responding to both 1957 and 1958 surveys: Distribution of firms receiving eggs from producers, by size groups and regions

Regions	Firms receiving eggs from farmers during 1957 1/				
	No volume	Small	Medium	Large	Total
	Number	Number	Number	Number	Number
New England	5	52	14	19	90
Middle Atlantic	24	267	60	62	413
East North Central	301	4,602	90	73	5,066
West North Central	226	2,599	182	134	3,141
South Atlantic	53	329	25	18	425
East South Central	16	126	13	6	161
West South Central	51	502	25	22	600
Mountain	39	339	14	7	399
Pacific	85	1,034	37	36	1,192
United States	800	9,850	460	377	11,487
	Firms receiving eggs from farmers during 1958 2/				
New England	20 ← 15	37	0	11	3 → 22	90
Middle Atlantic	70 ← 46	221	0	56	4 → 66	413
East North Central	909 ← 608	3,996 ← 2	97 ← 9	64	5,066
West North Central	458 ← 232	2,316	51 → 29	4 → 138	3,141
South Atlantic	49	4 → 307	26 → 42	9 → 27	425
East South Central	21 ← 5	123 ← 2	8	3 → 9	161
West South Central	129 ← 78	417	7 → 34 ← 2	20	600
Mountain	62 ← 23	312	4 → 15	3 → 10	399
Pacific	216 ← 131	895	8 → 45	0	36	1,192
United States	1,934 ← 1,134	8,624	92 → 537	15 → 392	11,487
	1958 respondents as percentages of 1957 respondents				
	Percent	Percent	Percent	Percent	Percent
New England	400	71	79	116	100
Middle Atlantic	292	83	93	106	100
East North Central	302	87	108	88	100
West North Central	203	89	126	103	100
South Atlantic	92	93	168	150	100
East South Central	131	98	62	150	100
West South Central	253	83	136	91	100
Mountain	159	92	107	143	100
Pacific	254	87	79	100	100
United States	242	86	117	104	100

1/ Classified by volume: no eggs received or handled; small - 1 to 20,799 cases per year; medium - 20,800 to 51,999 cases per year; large - 52,000 or more cases per year.

2/ Arrows indicate direction of change in classification.

Among regions, growth of operations was not uniform. The West North Central Region was first in number of firms moving from small to medium-size operations, with the South Atlantic Region second. Since the South Atlantic Region had a relatively small number of egg handlers in 1957, it showed the largest percentage increase; similarly, its shift from medium to large-size operations was greatest. In fact, this was the only region showing consistent growth among egg handlers from no volume all the way up to large-size operations.

The Middle Atlantic and New England Regions exhibited a different pattern. In both areas, firms left the small-size group and went out of business or ceased handling eggs. No growth was indicated from small to medium-size operations, but a few firms did shift from the medium to large-size group. Thus, the matched-plant analysis confirms information from trade sources that many small firms have gone out of business, while there has been a moderate growth among medium and large-size firms.

When volume of eggs received from farmers is analyzed for the 11,487 firms responding to both surveys, the growth of medium and large-size firms is confirmed. Although the total number of firms remained the same, 7 percent more eggs were received from farmers in 1958 than in 1957 (table 5). Small firms (1-20,799 cases of eggs per year) handled 14 percent fewer eggs, while medium-size firms (20,800 to 51,999 cases) handled 12 percent more, and large firms (52,000 or more cases) 14 percent more.

Three regions (East North Central, West North Central, and Pacific) exhibited trends similar to national trends in shifts among size groups. In three regions (Middle Atlantic, West South Central, and Mountain), assemblers handled fewer eggs in 1958 than in 1957. There was growth in volume handled by medium and large-size firms and a decline in volume handled by small firms. In three regions (New England, South Atlantic, and East South Central), egg assemblers handled more eggs in 1958 than in 1957. However, only in the South Atlantic Region was there an increase in volume handled by all size groups. In the two remaining regions (New England and East South Central), the overall increase was due entirely to growth in the large firm group; volume handled by small and medium-size firms declined.

Table 5.--Distribution of volume handled by egg handlers 1/

	Annual volume of eggs received from farmers 2/			
	Small	Medium	Large	Total
	1,000 cases			
1957 respondents				
New England	325	488	2,392	3,205
Middle Atlantic	1,680	2,110	9,648	13,438
East North Central	6,251	2,878	10,165	19,294
West North Central	10,823	5,767	18,635	35,225
South Atlantic	1,283	747	2,463	4,493
East South Central	503	450	516	1,469
West South Central	1,686	873	1,824	4,383
Mountain	851	469	854	2,174
Pacific	1,544	1,229	7,937	10,710
United States	24,946	15,011	54,434	94,391
1958 respondents				
New England	203	363	3,844	4,410
Middle Atlantic	1,410	1,831	9,630	12,871
East North Central	5,452	3,001	13,724	22,177
West North Central	9,324	7,099	19,648	36,071
South Atlantic	1,347	1,239	2,865	5,451
East South Central	432	241	975	1,648
West South Central	1,323	1,104	1,774	4,201
Mountain	707	487	836	2,030
Pacific	1,349	1,518	8,811	11,678
United States	21,547	16,883	62,107	100,537
1958 respondents as percent of 1957 respondents				
	Percent	Percent	Percent	Percent
New England	62	74	161	138
Middle Atlantic	84	87	100	96
East North Central	87	104	135	115
West North Central	86	123	105	102
South Atlantic	105	166	116	121
East South Central	86	54	189	112
West South Central	78	126	97	96
Mountain	83	104	98	93
Pacific	87	124	111	109
United States	86	112	114	107

1/ Data for matched plants: i.e. plants that responded in both 1957 and 1958.
2/ Classified by volume: small - 1 to 20,799 cases per year; medium - 20,800 to 51,999 cases per year; large - 52,000 or more cases per year.

APPENDIX

Commercial Egg Movement Report Compared with Other Egg Series

A number of periodic reports designed to assist persons interested in predicting trends in egg production and marketing are provided by the Department of Agriculture.

The first indication of the number of eggs expected to be produced in the year ahead is given by the monthly report, particularly during the fall months, on chickens tested for Pullorium disease. This report estimates the size of the current breeder flock available for production of hatching eggs. In February, a report is issued on farmers' intentions to raise chickens. A report of numbers of layers on hand as of January 1 is published early in February.

The monthly Hatchery Production Report gives estimates of eggs in incubators on the first of the month and egg-type chicks hatched during the previous month. These chicks become the layers that will produce eggs 5 to 6 months later. The size of the hatch during the spring months and whether the hatch is early or late are important considerations in predicting the volume and peak of future egg production. From August through January, a report is issued on pullets not of laying age. These reports give estimates not only of the size of the future laying flocks, but also provide a further check on the number of chicks raised to become part of the laying flock. Once a year a report is published on eggs sold from farms and eggs consumed in farm households. Each month throughout the year the Crop Report carries estimates of the number of eggs produced on farms and the rate of lay. The slaughter of hens and cocks reported in the weekly and monthly reports on poultry slaughtered under federal inspection indicates the culling rate of old hens.

The Commercial Egg Movement Report bridges the area between production reports at one end of the marketing system and terminal market reports at the other.

At a number of terminal markets, research is being conducted to develop reports on the movement of eggs into retail channels. New or improved reports of this type have been established for the metropolitan areas of Baltimore, Boston, Chicago, New York, Philadelphia, Portland-Vancouver, Los Angeles, San Francisco, and Seattle. Plans are underway to expand this effort to include 20 to 25 of the largest metropolitan areas, representing more than 40 percent of the total U. S. population. These reports will thus give a good indication of trends in volume of eggs moving out of trade channels and into consumption channels.

Data published weekly in the Commercial Egg Movement Report for 1958, 1959, and 1960 are summarized in table 6. Changes from the preceding week and preceding year are the same as in the published weekly reports, but each is expressed in terms of 100. Hence, a plus 8 becomes 108, and minus 6 becomes 94. However, to compare 3 or more consecutive weeks based on matched-plant data, it is necessary to use such a device as link relatives. This was done in the columns headed "First week of year." The percentage the second week is of the first is multiplied by a base of 100 percent for the first week. In column 2 this multiplication results in a figure of 108 percent. To obtain the next number in the columns headed "First week of year," the process is repeated. For example, in the first column the percent the third week is of the second is 94. The 94 is multiplied by the old base of 108 to obtain the new base of 102 (column 3) which is what the third week is of the first week. In this way percentage change data based on matched plants can be compared for a series of 3 or more weeks. Also, the seasonality in the series on receipts of eggs from farmers and deliveries to breakers is revealed by this technique. Once seasonality has been established, these series can be compared with seasonality in other series.

Table 6.--Weekly commercial egg movement, 1958 to 1960 1/

Week ending	Receipts from farmers								Deliveries to egg breakers							
	1958		1959			1960			1958		1959			1960		
	Percentage of								Percentage of							
	Preceding week	First week of year	Preceding week	First week of year	Preceding year	Preceding week	First week of year	Preceding year	Preceding week	First week of year	Preceding week	First week of year	Preceding year	Preceding week	First week of year	Preceding year
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.
Jan. 2	---	100	111	100	105	96	100	109	---	100	---	100	94	105	100	134
9	108	108	103	103	104	104	104	107	121	121	147	147	92	141	141	164
16	94	102	98	101	108	105	109	109	102	123	95	140	89	106	149	176
23	101	103	106	107	107	96	105	108	102	125	102	143	96	117	174	189
30	101	104	101	108	105	99	104	106	121	151	134	192	100	108	188	167
Feb. 6	98	102	102	110	106	100	104	105	99	149	109	209	104	105	197	142
13	97	99	100	110	107	98	102	104	99	148	110	230	116	101	199	131
20	96	95	98	108	106	100	102	104	111	164	110	253	141	101	201	125
27	102	97	102	110	115	102	104	104	88	144	112	283	160	96	193	100
Mar. 5	101	98	101	111	113	100	104	101	92	132	104	292	196	105	203	133
12	103	101	101	112	115	98	102	98	119	157	112	329	188	82	166	70
19	102	103	101	113	118	97	99	91	107	168	96	316	171	88	146	55
26	103	106	98	111	115	104	103	94	129	217	104	329	148	113	165	65
Apr. 4	99	105	108	120	111	98	101	94	113	245	116	382	144	114	188	57
9	97	102	103	124	107	108	109	98	110	270	101	386	161	113	212	59
16	105	107	96	119	112	101	110	96	120	324	107	413	140	116	246	64
23	103	110	94	112	110	97	107	91	116	376	92	380	120	115	283	69
30	101	111	112	125	110	100	107	98	112	421	103	391	111	130	368	93
May 7	99	110	89	111	115	101	108	115	93	392	103	403	126	109	401	97
14	100	110	112	124	111	100	108	100	97	380	115	463	120	106	425	104
21	101	111	101	125	109	100	108	101	97	369	92	426	128	96	408	110
28	96	107	93	116	108	100	108	104	91	335	89	379	123	105	428	119
June 4	101	108	101	117	106	97	105	101	101	339	110	417	123	98	419	102
11	98	106	100	117	106	102	107	103	95	322	99	413	113	103	432	110
18	97	103	91	106	109	99	106	104	93	299	88	363	113	98	423	131
25	99	102	93	99	109	98	104	104	96	287	83	301	115	96	406	124
July 2	95	97	95	94	109	100	104	109	72	207	82	247	138	94	382	148
9	103	100	108	102	104	96	100	104	104	215	107	264	121	90	344	128
16	99	99	96	98	104	99	99	107	97	209	89	235	120	102	351	129
23	98	97	103	101	106	98	99	107	94	196	96	226	119	99	347	139
30	99	96	95	96	108	98	95	103	95	186	104	235	143	94	326	129
Augu 6	98	94	100	96	109	98	93	100	93	173	94	221	124	93	303	130
13	98	92	103	99	110	99	92	100	96	166	90	199	129	94	285	129
20	100	92	105	104	108	100	92	97	106	176	101	201	124	89	254	111
27	101	93	96	100	107	100	92	99	86	151	95	191	132	96	244	118
Sept. 3	98	91	96	96	110	99	91	96	79	119	96	183	172	90	220	104
10	97	88	100	96	105	99	90	97	105	125	78	143	151	96	211	119
17	99	87	109	105	107	101	91	97	91	114	105	150	151	100	211	116
24	102	89	95	100	103	100	91	96	100	114	91	136	154	96	203	129
Oct. 1	100	89	102	102	105	101	92	97	93	106	83	113	133	87	177	108
8	101	90	106	108	106	99	91	93	95	101	108	122	174	95	168	103
15	99	89	104	112	106	91	83	91	105	106	98	120	134	88	148	101
22	102	91	98	110	106	100	83	92	97	103	101	121	142	96	142	97
29	102	93	100	110	104	100	83	92	103	106	100	121	137	99	141	90
Nov. 5	98	91	96	106	105	100	83	93	90	95	89	108	133	86	121	83
12	102	93	102	108	105	100	83	90	94	89	97	105	122	95	115	74
19	101	94	97	105	106	101	84	92	113	101	104	109	150	107	123	83
26	99	93	94	99	101	99	83	94	99	100	84	92	123	94	116	105
Dec. 3	106	99	107	106	103	105	87	105	126	126	154	142	132	92	107	65
10	97	96	105	111	108	101	88	95	97	122	80	114	99	110	118	83
17	100	96	72	80	109	100	88	94	90	110	95	108	141	135	159	102
24	94	90	114	91	109	101	89	99	87	96	107	116	136	91	145	67
31						98	87	94	103					112	162	79

1/ This is a summary of an experimental report of the movement of eggs from farms into trade channels (receivers handling at least 400 cases weekly).

Receipts of Eggs from Farmers and Eggs Produced on Farms

Receipts of eggs from farmers by commercial egg assemblers and eggs produced on farms are two series that are often compared, but differences can be expected between the two series.

As noted earlier, respondents for the Commercial Egg Movement Report are limited to firms handling 400 or more cases of eggs per week, some of which are received from farmers. Also, "commercial eggs" were defined as eggs moving in commercial trade channels, excluding those farmers consume themselves or sell to hatcheries, restaurants, hotels, householders, and other final users. Eggs produced on farms are reported monthly in the Crop Report of the Agricultural Estimates Division. These estimates include eggs produced for all purposes including home consumption, hatching, and sale to all kinds of buyers at all levels of trading.

When comparisons are made between receipts of eggs from farmers and eggs produced on farms, it is necessary to compare weekly and monthly data. Weekly data are typically more erratic than monthly data; this is apparent in the upper portion of figure 3. Nevertheless, the two series reveal similar trends within the year, and from year-to-year. As established earlier, more than two-thirds of the eggs produced are consumed in private homes as shell eggs. A large proportion of these eggs move through commercial trade channels. Thus, there is a general relationship between the two series.

Another way of comparing the two series is by plotting the percent of change from the preceding year for each series (lower portion of fig. 3). Again, the two series show similar within-year and year-to-year trends. However, a better correspondence between the two series is revealed by this method of comparison than by the first.

Deliveries of Shell Eggs to Breakers and Liquid Egg Production

Another comparison made is the one between eggs delivered to breakers and liquid egg production. Here, too, differences should be expected between the two series.

Eggs delivered to breakers may be broken out immediately or held as a backlog in cold storage facilities. Some breakers obtain eggs from sources other than commercial egg assemblers as defined in this report. These include such sources as terminal market handlers who in turn buy from country shippers, storers of eggs, small individual farmers, and city receivers' candling rooms.

Nevertheless, there is a relatively good relationship between the two series as illustrated in the upper portion of figure 4. Both series show similar within-year trends. These curves were produced by using the link-relative method described earlier.

The second way of comparing the two series is by plotting directly the percent change of the preceding year for each series (lower portion of fig. 4). Again the two series show similar within-year and year-to-year trends.

With this background, the function of the Commercial Egg Movement Report can be brought into proper perspective. The weekly matched-plant data for the Commercial Egg Movement Report are compared in figures 3 and 4 with the monthly estimates of eggs produced on farms and with liquid egg production.

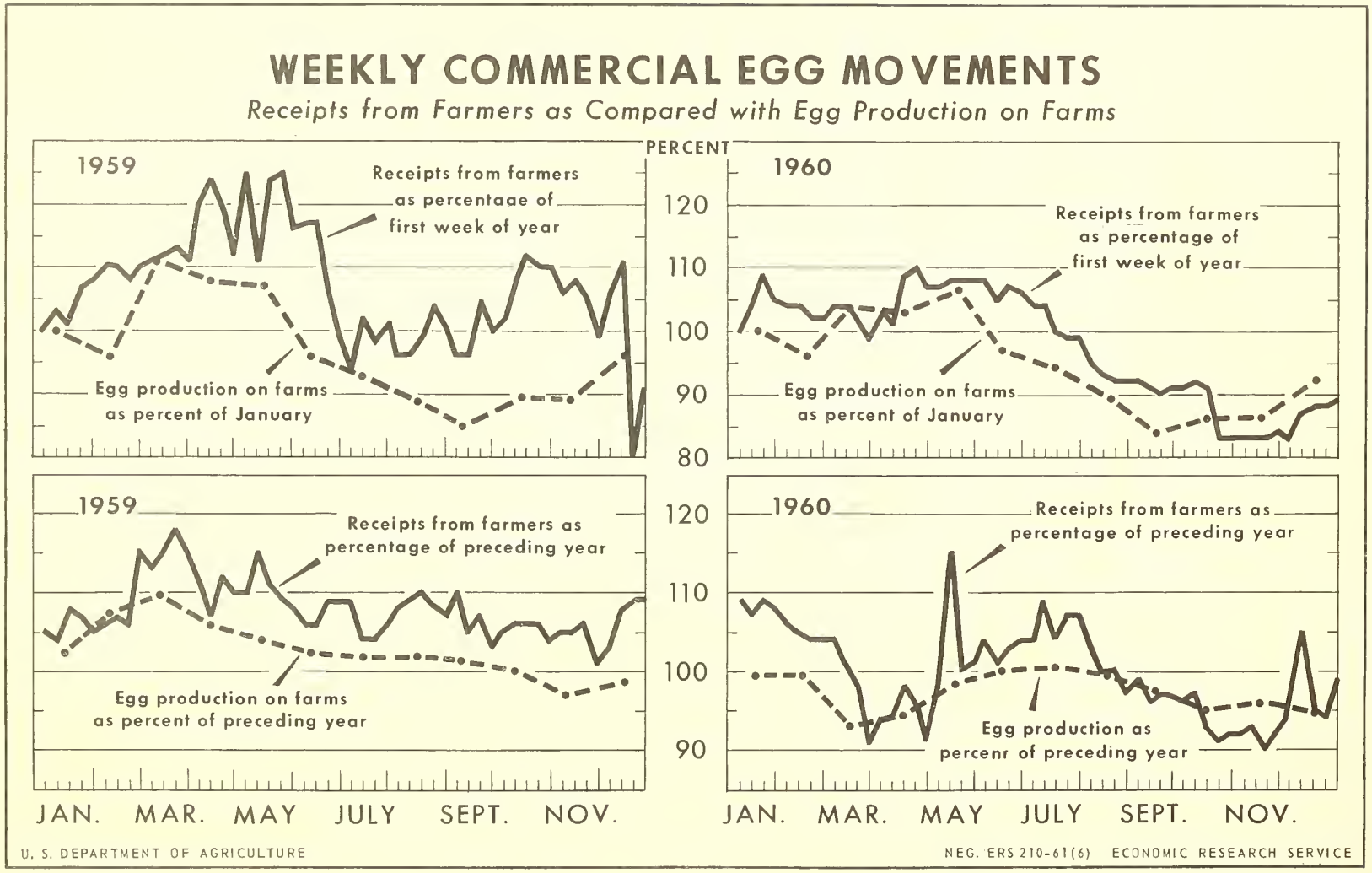
WEEKLY COMMERCIAL EGG MOVEMENTS
Receipts from Farmers as Compared with Egg Production on Farms
1959
Receipts from farmers as percentage of first week of year
Egg production on farms as percent of January
1960
Receipts from farmers as percentage of first week of year
Egg production on farms as percent of January
PERCENT
120
110
100
90
80
1959
Receipts from farmers as percentage of preceding year
Egg production on farms as percent of preceding year
1960
Receipts from farmers as percentage of preceding year
Egg production as percenr of preceding year
JAN. MAR. MAY JULY SEPT. NOV.
JAN. MAR. MAY JULY SEPT. NOV.
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 210-61(6) ECONOMIC RESEARCH SERVICE

Figure 3

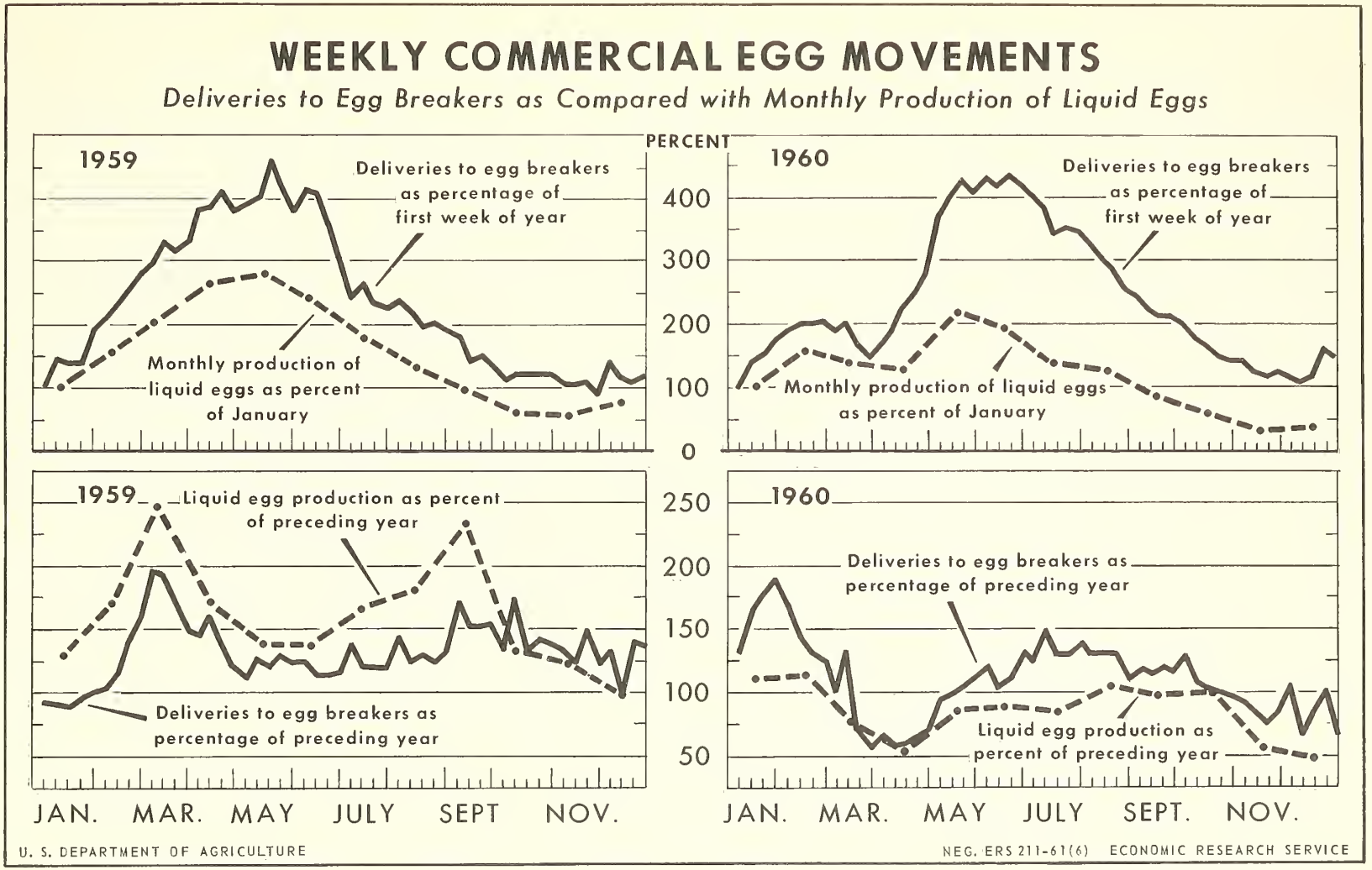
WEEKLY COMMERCIAL EGG MOVEMENTS
Deliveries to Egg Breakers as Compared with Monthly Production of Liquid Eggs
1959
Deliveries to egg breakers as percentage of first week of year
Monthly production of liquid eggs as percent of January
PERCENT
400
300
200
100
0
1960
Deliveries to egg breakers as percentage of first week of year
Monthly production of liquid eggs as percent of January
1959
Liquid egg production as percent of preceding year
Deliveries to egg breakers as percentage of preceding year
250
200
150
100
50
1960
Deliveries to egg breakers as percentage of preceding year
Liquid egg production as percent of preceding year
JAN. MAR. MAY JULY SEPT NOV.
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Figure 4

Differences between marketing data on one hand and production estimates on the other should be expected. They involve estimations of statistical universes that are defined differently. For example, commercial eggs were defined to exclude eggs used for hatching, consumed in farm households, and diverted to other final users. Time lags may develop between the time eggs are delivered to breakers and the time they are actually broken out. In the meantime they are frequently held in cold storage at egg breakers' plants or in public warehouses. In the short run, the various statistical universes may behave differently because of weather, unusually high or low rates of culling or mortality among laying hens, market prices, equipment breakdowns, strikes, and other factors that may become important at times. However, in the long run there should be relatively good agreement between marketing data and production estimates for eggs because the bulk of the eggs sold from farms are consumed as table eggs and broken out to produce egg products. Although varying proportions of these eggs move through the facilities of egg assemblers in different parts of the country, commercial egg assemblers account for a significant part of the total.

Growth Through Agricultural Progress