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MARKETING OF EGGS AND BROILERS IN JORDAN

by

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Hisham Awartani

ABSTRACT

The poultry industry in Jordan has expanded rapidly during the past few years. The number of commercial poultry farms has increased from a very few farms in 1958 to 152 farms in the summer of 1963. The expansion was far more pronounced in broiler farming than in egg production due to higher capital and technical requirements of the latter. Poultry farming in Jordan is characterized by the small size of farms and a large degree of instability. Many persons start a poultry farm without sufficient technical knowledge and experience and soon are forced out when sales returns do not cover their expenses.

The chain of marketing agencies intervening between producers and retail handlers is short. Poultry merchants constitute the most important agency in the wholesale and retail sale of broilers and in the wholesaling of eggs. Country egg collectors are the primary agency in assembling eggs from Baladi farm flocks. The auxiliary marketing services of candling, cleaning, and sizing of eggs are not widely performed either by producers or by dealers. Thus, eggs are sold mostly as they are collected from the nests. Broilers are mostly sold alive.

The producer's share of the retail price of eggs is 82 percent, and of broilers 93 percent. Producers receive these high percentages of what the consumer pays on account of the small number of agencies in the marketing chain, and the limited

services these agencies perform.

Short term variations in broiler prices are concurrent with religious feasts and tourist seasons. No such variations were found for eggs. Seasonal variations in broiler prices are caused mostly by population changes, mainly, Jordanians working abroad returning home in the summer. For eggs, seasonal variation in prices follows closely but inversely the seasonal pattern of production. The secular trend in egg prices is almost horizontal, while for broilers it is declining. Broiler output has grown faster than commercial egg production which supplied only 9 percent of net domestic consumption in 1963. The mean price for broilers in 1961 was 28 Jordanian piasters per kilogram of live weight (L.Pst. 241) and for eggs 1.58 piasters per egg (L.Pst. 13.6). The major reason for these high prices is high costs of production, estimated for broilers at 24.7 piasters (L.Pst. 212) and for eggs at 1.2-1.4 piasters (L.Pst. 10.3-12.0). Basic reasons for high costs are the high prices paid for chicks and feed combined with inexperience of most poultry producers, and lack of technical knowledge regarding modern commercial poultry production.

Consumer attitudes towards eggs and broilers are quite favorable. Consumers expressed a definite preference for eggs and chickens produced in Baladi farm flocks on account of accustomed taste and assumed freshness of such eggs. However, increasing numbers of consumers are developing a preference

for eggs, and to a lesser extent for broilers, produced on commercial poultry farms. The majority of consumers prefer to buy their chickens alive in order to make sure of their health, cleanness of processing, and slaughtering according to religious prescriptions. Broilers of less than one kilogram in weight are most preferred, because they are more economical to serve at special dinners and are said to be tastier. The per capita consumption of broilers in 1963 was estimated at 0.7 kilogram of live weight and of eggs at 38, both of which are quite low in comparison with many other countries.

Poultry producers and dealers in Jordan should perform more and better marketing services before they offer eggs and broilers for sale to consumers. A massive nation-wide advertising campaign should be launched to promote consumers' acceptance of ready-to-cook broilers of a weight not less than 0.7 kilogram.

Costs of production should be reduced by reducing the prices of supplies and improving the efficiency of production. Cooperative organizations offer the most effective way for achieving these improvements both in production and in marketing, since they operate in the interest of the producer-members themselves.

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CHAPTER I

INTRODUCTION

I. The Setting of the Problem

Jordan is, and will remain for many years, an agricultural country. Agriculture is the backbone of the economy of this small country of which around 80 per cent is desert.¹ More than one half of the labor force (though much of it only part time) is engaged in farming.² In normal crop years, approximately 20 per cent of the Gross National Product is derived from agriculture, as is shown in Table 1, which also gives a breakdown of the Gross National Product for the years from 1954 through 1961.

Looking through this table we observe an important feature of Jordanian agriculture. It is very evident that there are drastic variations from year to year in the share of agriculture in the G.N.P. Actually, in most cases the change from one year to the next exceeds 50 per cent. These shifts have continually subjected

¹ Jordan, Ministry of Agriculture, Annual Progress Report 1962 (Amman: Jordan), p. 4.

² Jordan, Development Board, 5-Year Program for Economic Development 1962-1967 (Amman: Jordan), p. 33.

TABLE I

COMPONENTS OF THE GROSS DOMESTIC PRODUCT OF JORDAN, 1954-1961

Million Jordanian Dinars at Current Factor Cost

	1954	1955	1956	1957	1958	1959	1960	1961
Agriculture	14.2	6.2	19.0	12.8	12.9	11.4	13.0	23.1
(percent of average, 14.1 mil.)	(100.7)	(44.0)	(134.8)	(90.8)	(91.5)	(80.9)	(92.2)	(163.8)
Manufacturing, mining and electricity	4.2	5.2	6.3	6.8	7.6	8.1	9.1	11.7
Construction	1.2	1.5	1.7	1.9	2.4	3.7	3.0	3.4
Transport	4.4	5.5	6.8	8.3	9.0	10.8	11.3	12.8
Trade and banking	9.3	9.3	10.5	12.0	14.4	16.1	18.0	22.7
Ownership of dwellings	2.3	2.3	2.9	3.1	3.3	5.4	6.1	7.1
Public administration and defence	9.1	9.7	11.5	13.3	15.6	16.1	17.6	17.8
Services	3.0	3.3	2.7	3.7	3.9	7.5	8.1	8.9
Gross national product	47.7	43.0	61.4	61.9	69.1	79.1	86.2	107.5

Sources: a

R.S. Porter, Economic Trends in Jordan 1954-1959 (Beirut: British Embassy, Middle East Development Division, July 1961), p. 1.

b

Jordan, Department of Statistics, The National Accounts 1959-1961 (Amman: Ministry of National Economy), p. 2.

the economy of the country to drastic ebbs which have had detrimental socio-economic repercussions on the country. Farmers suffer such losses during dry years that it takes them several years of good harvests to regain their lost capital.

Analyzing the severe variations in agricultural income, we find that they stem mainly from the hazardous nature of dry farming predominant in the country. More than 86 per cent of all lands in Jordan receive less than 200 mm. of rainfall a year.³ Such lands fall in the "arid" category of the classification recognized by most land economists. The water problem for crop production is further aggravated by the severe and unpredictable variations in the rainfall pattern of any one season. Without good showers in April and May the harvest of winter grains is very small. All this has tended to make farming a risky occupation for the large proportion of Jordanians who have no other important source of income. Table 2 gives a clearer indication that the main source of variations in agricultural income is the out-turn of crops from year to year.

³ Ibid., p. 97.

TABLE 2^a
 AGRICULTURAL INCOME, 1956-1962
 (Millions of Jordanian Dinars)

Year	All Crops	Percent of Total	Livestock and Poultry	Percent of Total	Forestry	Total
1956	21.10	75.3	6.61	23.6	0.32	28.03
1957	17.96	67.6	8.35	31.5	0.22	26.53
1958	15.14	70.5	6.06	28.2	0.25	21.45
1959	16.94	70.2	6.89	28.5	0.31	24.14
1960	14.11	62.7	8.21	36.5	0.20	22.52
1961	24.58	70.5	10.10	29.0	0.20	34.88
1962 ^b	20.54	71.5	8.04	28.0	0.15	28.73

Source: a Ministry of Agriculture, Annual Progress Report, 1961 (Amman, Jordan), p. 15.

b -----, Annual Progress Report, 1962 (Amman: Jordan), p. 36.

In the above table it is noticed that the annual income from livestock and poultry falls roughly in the range of 6-10 million dinars, whereas in percentage it varies from 23.6 per cent to 36.5 per cent of total agricultural income. These figures indicate two important facts about Jordanian agriculture. In the first place, it is noticed that livestock (including poultry) is much less important than crops in the economy of Jordan as compared to more

developed countries. In the United States, for example, it is estimated that the income from livestock in 1961 amounted to 48 percent of the farm value of total agricultural production.⁴ This figure is much higher than the comparable Jordanian one of 28 per cent, the average for the last seven years. This suggests that there is still a great deal to be done in expanding the livestock sector of Jordanian agriculture.

The other important observation which can be made from the previous table is the wide variation in the income derived from crops and livestock, more so in crop output. The variation in livestock income as well in crop returns is largely caused by rainfall fluctuations. In drought years many animals starve on scanty pastures, and many farmers are often obliged to dispose of large numbers of their animals to avoid death losses, thus greatly reducing their breeding stock for the following years.

Poultry production, however, differs markedly from other livestock in regard to water requirements. Since chickens require but relatively little water and much of their feed is imported, their numbers do not fluctuate with the rainfall.

⁴ U.S.D.A., Agricultural Statistics, 1962 (Washington: Government Printing Office, 1963), pp. 533-538.

It has been estimated by the Ministry of Agriculture in Jordan that the income from poultry in 1962 amounted to J.D. 1.1 million,⁵ which is around 3.9 per cent of the total agricultural income. Here again, we notice that poultry occupies a minor position in Jordanian agriculture. Yet this should not belittle its importance. As will be revealed later, the poultry industry has made impressive progress in a very short time, a trend which is unparalleled in other types of farming. This progress is indeed gratifying. For consumers, an abundance of chicken meat and eggs help to alleviate the chronic shortage of animal proteins in their diets. While for producers, poultry serves as a stabilizing factor in their economy, partially counteracting the severe fluctuations in other farm enterprises. This characteristic of the poultry industry is due to the relative insensitivity of poultry production to fluctuations in rainfall. Most poultry feeds are imported and the industry is therefore little affected by local crop failures.

The author believes that the present structure of Jordanian agriculture is more favorable for poultry farming than for other types of livestock husbandry. Chickens are probably the most efficient farm livestock in converting feed into edible foods. Since they are fed mostly on

⁵ Ministry of Agriculture, op. cit., p. 34.

imported feedstuffs, chickens and egg production is affected but little by the fluctuations in grain output. A good deal of progress in developing poultry production has already been accomplished but the road ahead is still long.

II. Purpose of the Study

When this study was first suggested, there was insufficient information about the poultry industry in Jordan to permit analysis to determine its major problems. It was apparent that this evolving line of farming was expanding by leaps and bounds, largely due to rumors of high profits reaped by the pioneers in this business. The expansion was so dramatic that it resulted in chaos in the market for poultry products, ultimately driving the prices down to a much lower level, with occasional booms in certain seasons. In this transitional stage, some producers were able to make high profits while many others rapidly withdrew from this business after suffering substantial losses.

This unhealthy situation called for a scientific study to provide the information necessary for formulating an accurate picture of the problems and prospects of the poultry industry. The primary aims of this investigation were the following:

1. Analyze price trends and fluctuations and ascertain their nature and magnitude.

This, in fact, seemed at first to be the most urgent part of the study. Producers were always complaining of price variations and downward price trends, for which they mostly blamed the newcomers who also wanted to get their share of the profits reported for this type of farming.

2. Investigate the existing market structure for poultry products by tracing them from farms until they reach consumers.

This involved studying the relationships between producers and the agencies in different marketing channels and determining the services rendered by each as the product moves from producers to consumers.

3. Evaluate consumers' preferences for eggs and broilers and ascertain the competitive position of these products with respect to other substitute food items.

This part of the study was intended to complete the picture on the conditions of supply and demand of poultry products, thus enabling us to forecast future trends in demand with reasonable precision.

4. Finally, this survey was expected to supply objective information on the existing situation of the poultry industry in Jordan for diagnosing its weaknesses and to make scientific planning possible.

This became a necessary objective after the contradictory information and exaggerated reports on

the situation of the poultry industry were learned. So it was safest to try to rely as much as possible on the primary sources of information. Information from secondary sources was not accepted at its face value. It was scrutinized and screened in view of available solid information.

III. Review of Literature

To the author's knowledge, there has been no organized economic study of the poultry situation in Jordan. There are several government departments which collect statistics and information on this subject, such as the Departments of Extension, Veterinary Service, and Statistics. But none of these has yet endeavored to coordinate whatever information it collects through a scientific study. In fact, the Research Department, which was supposed to take the initiative in this regard, did not even have an economist or a fulltime poultry specialist on its staff at the time this study was made.

Outside Jordan, similar studies have been going on for a long time. In the United States there is a large number of publications being turned out by the United States Department of Agriculture and the research stations in the various states. Several of these are listed in the bibliography at the end of

this thesis. A consumer study by Richard Saunders of Maine was especially helpful and suggestive in formulating the consumers' questionnaire used in this study.⁶

In Lebanon, Ward and Fuleihan conducted in 1960 a study on the costs of production of eggs and broilers on Lebanese commercial poultry farms. They reported their findings in a publication on the economic analysis of poultry production in Lebanon.⁷ Their work served as a guide for some aspects of this study made on egg and broiler marketing in Jordan. In fact, it appears that the poultry industry in Jordan has in general followed the same evolutionary pattern which those researchers found in Lebanon.

IV. Methodology

The field work for this study was started in July 1963 and ended in September of the same year. This work could be roughly divided into five parts. The following is a brief description of each:

⁶ Richard Saunders, Differences Between High and Low Level Users of Chickens, Miscellaneous Publication 647 (Maine Agricultural Experiment Station, March 1961).

⁷ Gordon H. Ward and G.S. Fuleihan, Economic Analysis of Poultry Production in Lebanon, School of Agriculture Publication No. 18 (Beirut: American University of Beirut, June 1962).

1. Collection of Background Information

It was necessary to collect some basic information and statistics on the situation of the poultry industry in Jordan before proceeding into the more specific elements of the study. Preliminary statistics on the number of poultry farms, their location and output were gathered from the Department of Extension and Veterinary Service. Statistics on the monthly baby chicks imports were collected from the Department of Veterinary Service which were later found to be grossly inaccurate. In spite of this, such information was necessary to illuminate the road for later work. Figures on exports and imports of poultry products were obtained from the Department of Statistics.

2. The Consumers' Survey

A detailed consumer questionnaire was first prepared in English and then translated into Arabic. Before the questionnaire was distributed, it was field tested and some modifications were introduced. An Arabic and an English copy are included in the appendix.

More than 600 copies of this questionnaire were distributed throughout the country with the aid of various people, official and otherwise. The number of copies distributed in each district was roughly a

function of the size of its population and of its significance as a marketing center for eggs and broilers.

When distributing this questionnaire, the endeavor was made to select a sample of consumers which would be representative of the different socio-economic strata existing in the consumer population. However, the result was not exactly so because of the difficulty involved in gaining access to certain population strata. The consumers' sample, therefore, is not claimed to be fully representative of all the population. A comprehensive national consumer survey requires much more facilities, time, and planning than could be afforded by one individual worker with but three months to spend in Jordan. Nevertheless, this survey gives a clue to consumers' preferences which are not available otherwise.

A modified consumer questionnaire was prepared for western foreigners, especially Americans, living in Amman. Fifty copies of this questionnaire were distributed through the Offices of the United States AID Mission to Jordan, and 27 filled copies were returned. It is generally recognized that foreigners living in Jordan constitute an important part of the market for broilers and eggs produced by commercial poultry farms. They are also quite particular about the quality of the products they buy. Therefore, it is necessary for

marketing agencies to know what these consumers want and to modify their marketing services accordingly for the part of their products distributed to these buyers. A copy of the questionnaire used is included in the appendix.

3. Questionnaires for Hotels and Restaurants

In order to have a more complete picture of the demand side of the market, it was necessary to get in touch with some of the widely known hotels and restaurants in the major cities. Such eating places constitute an important part of the market for eggs and broilers. Twenty-five copies of a short questionnaire with open end questions were mailed, of which seven were returned. A copy of this questionnaire is given in the appendix.

4. Marketing Channels

An important part of this study was directed toward the various marketing agencies which handle eggs and broilers between production centers and market terminals. Such channels include a variety of intermediaries with different degrees of specialization. However, most of them belong to the group called "poultry merchants." These are poultry and egg dealers who have permanent shops in the market area, where they sell only poultry products.

Other kinds of marketing channels studied included dressing centers, jobbers, and food stores selling poultry. A total of 27 marketing agencies were interviewed and replies were recorded in a specially designed questionnaire. A copy of this questionnaire is set forth in the appendix.

5. Producers Survey

The three preceding parts of the field work essentially dealt with the various aspects of the demand for eggs and broilers. The study of the production side was the second main part necessary to complete the analysis of the industry as a whole. In fact, about half of the field work was devoted to this part of the study.

Arrangements were made with the Department of Extension to visit a number of poultry farms in each district. Before commencing work in any district a tentative list of farms in that district was first procured, with rough information on their size and type (broiler, layer, or mixed). After the first few interviews in any district, it was possible to decide on how many and which farms should be visited in order to obtain representative data, in terms of place, size, and type. By the end of the field study, 55 farms of different sizes and scattered all over the production areas in the country had been studied. Findings were recorded on the "Producers Questionnaire", of which a copy is provided in the appendix.

CHAPTER II

THE DEVELOPMENT OF THE POULTRY INDUSTRY IN JORDAN

I. History of the Poultry Industry in Jordan

Commercial poultry production in Jordan is of relatively recent origin. Approximately 93 per cent of all producers interviewed in the summer of 1963 reported that they had been in business for less than three years, and only one farmer (1.8 per cent of the sample) reported that he had been operating for longer than six years.

Prior to 1958 poultry in Jordan consisted primarily of scavenger chickens kept by village housewives in very small flocks, rarely exceeding fifty. These birds were raised mainly to provide the family with its egg needs, and occasionally with some chicken meat. Whatever eggs were found to exceed family needs and culled birds were sold to country egg collectors who used to dispose of them directly to consumers or to poultry merchants in neighboring towns. In such circumstances, the technical level of management practices was very primitive. Diseases were an ever present menace. In fact, disease hazards were probably the major factor that thwarted earlier growth of commercial poultry farms. Medication against such diseases as coccidiosis and parasites was very rarely used.

Government vaccination programs against Newcastle, a very destructive disease in Jordan, were organized and carried out by the Department of Veterinary Service in the form of campaigns covering parts or all of the country. Unfortunately, this type of program did not prove very successful for several reasons, not the least of which was the villagers' doubts of the purpose and usefulness of the program.

Nutrition and feeding practices were no better. Birds were left loose to hunt for their food. Sometimes they were provided with small amounts of inferior quality grains. Of course such a ration is far from satisfying the maintenance and production requirements of laying birds. Feed concentrates were introduced into use by commercial poultry farms only in the late fifties. Even then farmers lacked the correct information on the proper techniques of formulating nutritionally balanced rations.

Chicks to grow into replacements were largely hatched by broody hens. The "breeds" in use had a conjuncture of genotypes which gave rise to all sorts of characteristics. They were mostly heavy dual purpose breeds with low capacity for egg production. Their only advantage was their tolerance of the hardships of their rough environment acquired through survival of the fittest.

Artificial incubation has been used in Jordan for quite a long time. Many schools in rural areas have had incubators since the British Mandate. But these incubators did not

contribute materially to providing villagers with their needs for baby chicks. In 1955 the Ministry of Agriculture established three units for artificial incubation in Nablus, Bethlehem, and Irbid.¹ These hatcheries were intended to serve farmers at cost. Farmers brought their eggs to the hatchery and were charged a small fee for incubation.

As one might expect, these hatcheries were highly vulnerable to epidemic diseases. Moreover, there was no effective control on the quality of eggs set for incubation and therefore the chicks hatched were mostly heterogeneous and of inferior quality.

In the seven years after their inception, these hatcheries produced some 433,000 baby chicks.² This, of course, is a small fraction of present chick placements which often exceeds 100,000 a month. But in spite of all its shortcomings, the government hatching program was an important element in stimulating the poultry industry at a time when importing chicks from abroad was not yet heard of.

In such circumstances, poultry, especially chicken meat, had a small market with a limited supply which was unable to keep pace with the rapidly increasing demand. No wonder, then, that the prices of chicken meat soared to an abnormal level, at times exceeding 36 Jordanian Piasters per kilogram

¹ Jordan, Division of Livestock, A Progress Report for the Period 1953-1962 (Amman: Ministry of Agriculture), p. 5.

² Ibid., p. 13.

of live weight. With such high prices, some farmers wanted to take the chance and go into commercial broiler production.

In 1958, a few farmers in Nablus area, who probably heard about the expanding broiler industry in Lebanon, imported small numbers of baby chicks of well known breeds. In spite of their relatively unscientific management practices, these pioneers sold their chickens at such high prices that they were able to make high profits on their broiler operations. Exaggerated rumors of fantastic profits spread to other farmers. This instantly triggered a rush into this line of agriculture. The imports of broiler chicks, although just started in 1959, rapidly increased to more than 1.25 million chicks in 1963. The figures in Table 3 show the increase in imports of baby chicks since 1960.

TABLE 3
IMPORTS OF BABY CHICKS INTO JORDAN, 1960-63

Year	Number of Chicks Imported
1960	150,000 ^a
1961	400,000 ^a
1962	650,000 ^b
1963	1,250,000 ^b

Source: a Jordan Department of Statistics, Statistical Yearbook, 1960, 1961 (Amman: Ministry of National Economy).

b Unpublished data, Department of Veterinary Service.

This rapid growth is also evidenced by the large increase in the number of broiler farms in the country. Although in 1957 there was not a single farm engaged in commercial broiler production, in 1963 there were 114 such farms in operation.

The rush into broiler farming was not paralleled in egg production. In fact in the summer of 1963, there were in Jordan only 71 commercial layer flocks of 50 hens and more, totalling 25,600 layers.³ So even if we assume zero commercial layers in 1959, a rise to 25,600 hens in four years is not great.

The difference between the development of broiler and layer farms is easily explained. It mainly stems from the market conditions of each in the late fifties. The egg industry appears to have achieved a reasonable degree of stability many years before this was the case with broilers. Unlike broilers, the demand for eggs did not undergo an abrupt rise that would greatly exceed supply. Thus, despite the steady increase in demand caused by larger population and a higher standard of living, the supply of eggs was also increasing in sufficient volume to maintain a more or less stable pattern of prices from year to year. Therefore, there was no temptation for speculative farmers to join this type of farming. That was the main reason for not encountering

³ For more details regarding this estimate see Table 5.

a rush into egg farming similar to that in broilers.

There also seems to be some other important characteristics intrinsic in each of these two types of poultry that tend to favor a more rapid expansion in broilers over layers. Among these characteristics, the following are most important:

1. The turn-over of capital in broiler farming is much faster and higher than in layers'. In a layer farm, capital remains frozen for more than five months before the project starts paying direct expenses. On the other hand, broilers are rarely kept over eight weeks before they reach market weight.
2. Egg farming requires much more initial investment than broilers, mostly in the form of houses and rearing the pullets to laying age at 5 to 6 months. Broilers are less exacting in their housing requirements. In fact, many broiler producers merely obtained whatever housing space they could afford for poultry.
3. The hazards of layer flocks are much more serious than those of broilers. A disease attack in broilers might at worse wipe out the whole batch. But if it does so in a layer flock the loss will be catastrophic because of the high cost of a layer. The risk is further accentuated by the need for keeping layers for a much longer period than broilers.
4. Egg farming is a more complicated operation and requires more experience and technical skill than in the

case of broilers.

5. Broiler production can lend itself more easily as a minor enterprise alongside other agricultural or non-agricultural occupations. This explains why a large number of government and company employees and non-agricultural workers join broiler production and refrain from layers.

All these factors tended to promote the rapid growth in broiler farming during the past few years. In the following section we shall try to throw light on the number, size, and geographic distribution of poultry farms in Jordan as they were in the summer of 1963.

II. Number and Size of Poultry Farms

The available figures on the number and sizes of poultry farms in Jordan show great variation from one source to another. For instance, the Department of Veterinary Service gives an estimate of 256 poultry farms operating during 1962⁴, whereas the Division of Livestock in the Ministry of Agriculture gives a figure of 139 farms.⁵ The disparity between both estimates might arise mainly from two sources:

⁴ Jordan, Department of Veterinary Service, Livestock Census, 1962 (Amman: Ministry of Agriculture, 1963), p. 6.

⁵ Jordan, Division of Livestock, op. cit., p. 16.

1. Rapid changes in the number of farms. This is especially true in broiler farming where there is still a considerable degree of instability. Many newcomers are joining this line while many others discontinue, whether temporarily or for good.
2. Possible disagreement on defining the lowest size limit for a commercial poultry farm. Some were willing to count flocks of 20 birds as commercial farms. In this study we define a poultry farm as one which has 50 layers and above, or markets 50 broilers a month and above.

Because of the wide disparity among available statistics on this matter, it was found best to carry out a new census in the summer of 1963. The Extension Department was requested to undertake this job. It was believed that this department could obtain more accurate figures through their personnel in the different districts of the country.

The total number of commercial poultry farms in the country, as counted by the Extension Department, was 152 farms. Table 4 shows the distribution of all commercial poultry farms according to districts and types.

In the following pages we shall discuss the distribution of poultry farms according to size and location. Since many farms are mixed, containing flocks of both broilers and layers, it has been found more convenient to treat each flock

TABLE 4
DISTRIBUTION OF COMMERCIAL POULTRY FARMS
IN JORDAN, BY DISTRICT AND TYPE

	Nablus	Jerusalem	Jericho	Hebron	Ajloun	Amman Belqa	South
Broiler	27	-	10	1	8	29	-
Layer	12	10	1	5	-	10	3
Mixed	24	1	3	3	1	4	-
Totals	63	11	14	9	9	43	3

separate from the others. Of course the number of poultry farms is less than the total number of layer and broiler flocks.

The statistics cited in this section are exclusively based on the reports submitted by the District Extension Offices. Some corrections were made in view of the author's own observation during the course of the study.

Table 5 shows the distribution of all commercial layer flocks in Jordan by size of flock, as in the summer of 1963.

TABLE 5

DISTRIBUTION OF LAYER FLOCKS BY SIZE^a SUMMER 1963

Size of Flock	No. of Flocks	Percent of Total Flocks	Total No. of Birds	Percent of Total Birds	Average No. of Birds per Flock
50-250	38	53.5	5780	22.5	152
251-500	21	29.5	7420	28.9	353
501-1000	9	12.8	5900	23.0	656
1001-2000	2	2.8	3500	13.6	1750
2001-3000	1	1.4	3000	11.7	3000
Over 3000	-	-	-	-	-
Totals	71	100.0	25660	100.0	361 av.

Source: Reports of District Extension Offices

^a These exclude all flocks owned by welfare societies or governmental agencies.

The above table illustrates an important feature of egg farming in Jordan, namely, small size of flocks. Around 53 percent of all layer flocks were of 250 layers and below. In fact, only 12 percent of commercial layer flocks had a size of more than 500 layers. Small size of farms was mainly due to capital limitations and to the lack of sufficient technical skill which is acquired through experience.

In addition to the small size of individual layer flocks, the aggregate number of layers raised on commercial farms was very small compared to the total population of

Baladi chicken layers in the country, estimated at 846,000 birds.⁶ This indicates that backyard flocks of Baladi chickens are by far the most important source of table eggs produced in the country. However, most of the Baladi eggs are consumed by village people, and only their surplus production goes into the marketing system.

The figures in Table 5 include only commercial flocks raised by profit-seeking farmers. In addition to these, there is a large number of layer flocks maintained by some governmental agencies. The Ministry of Education maintains many small layer flocks annexed to schools located in rural areas. These are intended to be demonstration flocks for village pupils. Also the Ministry of Agriculture keeps several flocks on some of its stations for demonstration or experimental purposes. Besides these government-affiliated farms, there are a few welfare organizations that raise poultry as a part of their activities. Among these, the Arab Development Project in Jericho and the World Christian Society in Hebron are most important. An estimate of all non-commercial flocks is cited in Table 6.

6

Ibid., p. 16.

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⁶ Ibid., p. 16.

TABLE 6
NON-COMMERCIAL LAYER FLOCKS IN JORDAN
SUMMER 1963

	No. of Layers
Schools	8,000
Ministry of Agriculture	2,000
Arab Development Society	6,000
The World Christian Organization	200
Total	16,200

Source: Personal Contacts.

As to broilers, it is again noticeable that the expansion was mostly in the number of farms rather than in the size of farms themselves. Table 7 shows that 91 per cent of all broiler farms had a capacity of 2000 broilers a week or less, and these produced 71.5 per cent of the national broiler output.

The generally small size of broiler farms can be attributed to three main causes:

1. Capital Limitations

A large number of poultry producers find it very difficult to expand their scale of operations materially. The biggest hurdle is the need to construct new houses to accommodate larger flocks. Credit borrowed for such purposes as purchasing feed or baby chicks is

TABLE 7
DISTRIBUTION OF BROILER FLOCKS BY SIZE
SUMMER 1963

	No. of Flocks	Percent of Total Flocks	No. of Birds Placed Monthly	Percent of Total	Average Monthly Placement per Farm
50-500	41	36.0	18,750	13.4	457
501-1000	33	29.0	28,150	20.1	853
1001-2000	30	26.3	53,300	38.0	1777
2001-4000	7	6.1	22,000	15.7	3143
4001-6000	2	1.7	10,000	7.1	5000
6001-8000	1	0.9	8,000	5.7	8000
Totals	114	100.0	140,200	100.0	1230 av.

Source: Reports of District Extension Offices

much more accessible than for the construction of more buildings for housing the chickens.

2. Degree of Specialization

There still is not a sufficient degree of specialization in broiler production. Thus most producers are too occupied with layers and broilers to take adequate care of larger farms.

3. Slowly Evolving Demand

Farmers gauge their production in such a way that they can sell all their output within a short time

after the birds reach market weight. They do so because they do not have freezer storage facilities to hold any surplus broilers that could not be sold at the prevailing price. It is not only that the market for dressed broilers is still small but also cold storage facilities are not available in most parts of the country. Thus, any producer who expands his output beyond what the market can absorb might run into difficulties in marketing his broilers. Actually, the present practice of selling broilers alive makes of them a highly perishable good, which neither could be stored nor kept on farms for any appreciable time after they reach market size. This rigidity in supply relative to an expanding demand has had serious repercussions which will be discussed in more detail in Chapter V.

III. Geographic Distribution of Poultry Farms

Tables 8 and 9 show the geographic distribution of layer and broiler flocks as in the summer of 1963. It is clear from the data in these tables that Nablus district occupies a leading position in poultry farming of Jordan. This district has 60 percent of all commercial layers (50 percent of the layer flocks), and 35.3 percent of the broilers (44 percent of the broiler flocks). The distinctive progress in this area may be

TABLE 8
GEOGRAPHIC DISTRIBUTION OF COMMERCIAL LAYER FLOCKS
SUMMER 1963

District	No. of Flocks	Percent of Total Flocks	Total No. of Layers	Percent of Total Layers	Average No. of Layers per Flock
Nablus	36	50.7	15380	60.1	427
Jerusalem (except Jericho)	11	15.5	3860	15.1	351
Jericho	2	2.8	850	3.3	425
Hebron	4	5.6	410	1.6	103
Ajloun	1	1.4	500	1.9	500
Amman and Belqa	14	19.8	4300	16.8	307
South	3	4.2	300	1.2	100
Totals	71	100.0	25600	100.0	361 av.

Source: Reports of District Extension Offices.

due to several factors which seem to have favored poultry farming there. Among these, the following are of special importance:

1. It was in this district that the spark of poultry production was ignited in the late fifties and produced a momentum which continued to the present.
2. The climatic conditions in this district are more favorable for poultry farming than in most others. Water is relatively abundant, winter is mild, and summer temperature is tolerable for chickens.

TABLE 9
GEOGRAPHIC DISTRIBUTION OF BROILER FLOCKS
SUMMER 1963

District	No. of Flocks	Percent of Total Flocks	No. of Birds Placed Per Month	Percent of Total	Average Monthly Placement Per Farm
Nablus	50	43.9	49500	35.3	900
Jerusalem (except Jericho)	1	0.9	1000	0.7	1000
Jericho	13	11.4	27000	19.3	2077
Hebron	8	7.0	3500	2.5	438
Ajloun	9	7.9	6500	4.6	722
Amman and Belqa	33	28.9	52700	37.6	1597
South	-	-	-	-	-
Totals	114	100.0	140200	100.0	1230 av.

Source: Reports of Regional Extension Offices.

3. Summer booms of broiler prices are more pronounced in Nablus district than elsewhere. In fact, in spite of being a major surplus producing district, Nablus becomes a deficit area in late summer and secures part of its needs from Jericho. The increased summer demand is due to the arrival of a large number of Jordanians from their posts in Kuwait and Saudi Arabia.

Belqa district (including Amman), is also an important broiler producing area. It comes next to Nablus in importance, producing 37.6 per cent of the national broiler output in 33 per cent of all flocks in the country. In egg production, it also ranks second to Nablus. It houses 16.8 per cent of the total layers in 19.8 per cent of the total flocks. Prospects of expansion in this district are favorable. Producers enjoy the advantage of proximity to a big market in the capital city where the demand for poultry products is fairly stable.

Jericho, a sub-district of Jerusalem, ranks third in the volume of its broiler output. It accounts for 19.3 per cent of the national broiler output and has 13 per cent of the broiler flocks. Production in this region is severely curtailed in summer due to very hot weather. But broilers grow rapidly in winter and spring due to favorable weather conditions which make of Jericho the country's first winter resort. Egg production in the Jericho area does not seem to be of any significance. The weather is too hot in summer to make egg production commercially feasible without special expensive housing. There is at present some effort to overcome this difficulty by introducing breeds which are more tolerant to high temperatures.⁷

Jerusalem district occupies a minor position in poultry farming. This is partly due to its relatively cool weather

7

The Arab Development Society has introduced an English strain which they are now testing on their farm near Jericho. It is said that the results so far are encouraging.

which makes brooding of chicks in winter somewhat difficult for inexperienced producers, and partly due to seasonal shortage in water supplies.

Hebron is one of the districts where commercial poultry farming has hardly made a start. In spite of that, this district is considered the principal source of Baladi eggs in all Jordan. Large quantities of its surplus eggs are channelled to Jerusalem and Amman in spring and summer. But in broiler production, there does not seem to be much prospect of development at present. The Hebron market for chicken meat is very weak, to the extent that it is fully satisfied by the local supply of Baladi chickens.

Ajloun district, whose center is Irbid, is making a good start in broilers but further expansion will be more difficult. The local market is small, and selling in Amman market can hardly be economical due to transportation expenses and shrinkage in the live weight of the birds. As the demand for dressed broilers expands, producers in the Irbid area could sell in Amman. Commercial egg farming in Ajloun is still insignificant. A large number of eggs are produced cheaply in village backyards and Bedouin camps. Moreover, farmers in this district have not yet acquired the skill and know-how essential for successful commercial egg farming.

In the South, which includes Karak and Ma'an districts, there is not yet any commercial poultry farming. Not only is

the market limited but farmers also lack the finances and the minimum level of skill needed for such projects. Moreover, the weather there is of the desert type so that water is sometimes so limited in supply that there is not sufficient for human use. Consumers there depend for their egg and chicken supply on backyard and Bedouin tent scavenger poultry.

IV. Imports and Exports of Eggs

Egg Imports

The expansion in the poultry industry in Jordan was accompanied by a large increase in the imports of eggs, as indicated by the statistics for the years 1956-1963 in Table 10. Egg imports have risen greatly in spite of the increasing quantities of eggs produced locally. Moreover, the annual data in Table 10 show that egg exports in the past several years have been declining almost steadily. This signifies an important fact, namely, that the consumption of eggs in Jordan has increased more rapidly than production. This increase in demand has resulted in a stable or slightly rising trend in egg prices, in spite of the increased local supply.

Actually, egg imports are likely to rise still further due to the absence of any governmental restrictions on egg imports. Egg importers can undercut local

prices to a level at which most local producers can not afford to sell with their relatively high costs. Moreover, the government does not impose any effective control on the

TABLE 10
EXPORTS AND IMPORTS OF EGGS
1954-1963

Year	Exports	Imports
1954	476,597	N.R.
1955	306,225	N.R.
1956	612,585	478,920
1957	289,180	1,596,820
1958	454,573	2,261,360
1959	586,936	2,729,720
1960	364,430	2,449,440
1961	132,090	4,847,760
1962	111,950	8,873,720
1963	125,270	9,445,390

Source: Jordan Department of Statistics, Statistical Yearbooks 1954-1963 (Amman: Ministry of National Economy).

quality of imported eggs. They can be sold without having to be designated as being imported. This policy is unfair for both producers and consumers. Consumers, as found by a preference survey conducted in the summer of 1963 and which is reported in a later section of this thesis, prefer fresh

quality eggs. Thus, they may be willing to pay a slightly higher price for local fresh eggs which are considered of superior quality to the imported. Jordanian egg producers can secure a premium price only when there is a visible distinction between local and imported eggs. This distinction is clear only when imported eggs are individually so stamped.

Sources of Imported Eggs

Eggs are imported into Jordan from several countries. Table 11 shows the imports of eggs according to source for the last several years. It is clear that Syria and Turkey were the major egg suppliers to Jordan. But in the last three years Lebanon and Poland have also exported substantial quantities of eggs to Jordan.

Syria is the principal exporter of eggs to Jordan, since it accounts for around one third of all eggs brought to Jordan. In fact, Syria even exports large quantities of farm flock eggs to Lebanon which has a well developed poultry industry. The quality of the Syrian eggs was often unsatisfactory, due to the time consuming methods of collecting eggs from villages and moving them through the marketing channels to export markets.

Lebanon comes next to Syria in importance as a supplier of eggs to Jordan. But the largest portion of eggs imported from Lebanon were of foreign origin, mostly coming from Holland, Denmark, and Poland.

TABLE 11

IMPORTS OF EGGS INTO JORDAN FROM VARIOUS COUNTRIES

1957-1963

Source	1957	1958	1959	1960	1961	1962	1963
Lebanon	1,120					32,760	120,200
Lebanon (foreign)					1,152,000	3,881,600	2,403,000
Syria	1,589,200	2,259,360	2,729,720	2,193,840	1,306,080	2,835,360	2,942,090
Syria (Foreign)				183,600	86,400	540,000	298,080
Turkey				72,000	2,303,280	144,000	835,500
Poland						1,440,000	2,304,000
Greece		2,000					
Iran	4,000						
U.S.A.	2,500						
Denmark							542,520
	1,596,820	2,261,360	2,729,720	2,449,440	4,847,760	8,873,720	9,445,390

Source: Jordan, Department of Statistics, Statistical Yearbooks, 1957-1963
(Amman: Ministry of National Economy).

Poland ranked third. It is one of the "dumping" countries which offer their eggs at very low prices in order to meet its great need for foreign exchange.

Turkey is one of the surplus egg producing countries in the area. It has been exporting eggs to Jordan constantly since 1960. Turkey is also the major egg exporter to Lebanon. In 1960 it exported to Lebanon more than 50 percent of the latter's total egg imports.⁸

Egg Exports

The figures on egg exports in Table 12 indicate that Jordan continued to export eggs through 1963. However, the quantities exported were considerably lower than imports for the corresponding years. Moreover, the quantities exported were undergoing a declining trend since 1959.

The countries of destination for Jordanian eggs are mainly Saudi Arabia and Kuwait. The figures in Table 12 indicate that around 85 percent of all egg exports in 1963 were sold to Saudi Arabia and 13 per cent to Kuwait. These countries import their egg and chicken needs mostly from Lebanon and the United States. The prospects of Jordan competing with such countries in foreign markets is very remote. As a matter of fact, Jordanian producers can hardly compete with these suppliers in the Jordanian market itself.

8

Gordon Ward and J. Fuleihan, op. cit., p. 22.

TABLE 12
DESTINATION OF EXPORTED EGGS
(1963)

Country	No. of Eggs
Lebanon	1,800
Saudi Arabia	106,890
Kuwait	16,580
Total	125,270

Source: Jordan, Department of Statistics, Unpublished data.

V. Imports and Exports of Meat Chickens

The imports of meat chickens into Jordan were less responsive to the increased demand than was the case with eggs. Jordanian producers could respond more rapidly and with greater ease to the expanding demand for chickens than for eggs, due to the lower capital investment required and the shorter period of time for putting the product on the market. The figures available on the imports of live chickens show a very large increase in the number of baby chicks imported rather than in the quantities of meat chickens. Actually, there were no imports of live broilers reported in the last few years, which meant that they were negligible. But there have been more appreciable imports of frozen poultry meat, as shown in Table 13.

TABLE 13
IMPORTS OF FROZEN POULTRY MEAT INTO JORDAN
1959-1962

Year	Quantity in Kilograms
1959	1054
1960	3787
1961	3988
1962	1618

Source: Jordan Department of Statistics, Statistical Yearbooks 1959-1962 (Amman: Ministry of National Economy).

The volume of imported frozen broilers as reported above suggests that the market for this form of poultry is not yet well developed. It is mostly confined to foreigners living in Amman, especially Americans. This again goes back to the point made already in regard to Jordanian consumers' preference for buying poultry alive. Moreover, the price of imported dressed broilers is much higher than locally produced and dressed chickens. It is true that their quality is also better but Jordanian consumers do not seem to be willing to pay a large premium for this advantage. Their primary interest is in freshness of the product.

For these reasons, the market for imported dressed meat chickens is not likely to expand markedly in the future. On the contrary, it may even shrink if market prices of locally

produced broilers are reduced and processing services are improved so that the quality of the local broilers ready-to-cook is approximately equal to that of the imported.

VI. Consumption of Eggs in 1963

It is logical to assume that the prime booster for the rapid growth of the poultry industry in Jordan has been the tremendous expansion in the consumption of eggs and chicken meat. It would be useful to make some estimate of domestic consumption of eggs and broilers over the past six or seven years. But unfortunately there are no reliable records bearing on this point.

The increase in the consumption of eggs may not have been as dramatic as it has been for broilers. Up to 1963 there were only a few more than 40,000 layers kept on commercial farms, and 820,000 Baladi layers in small farm flocks. The farmer had increased over the preceding year by not more than 10 percent, while the latter increased less than 3 per cent.

The apparent domestic consumption of eggs is calculated in Table 14. In this estimate it was attempted to account for all the factors which bear on the quantities of eggs actually consumed. It is possible to formulate a fairly accurate estimate of all such factors with the exception of eggs turned out by

Baladi flocks, which in turn account for the largest portion of egg output.

Another problem in this connection is estimating the yearly egg production for the average Baladi and commercial layers. Farmers and technicians who were interviewed in the course of the study gave figures which varied greatly, and generally were higher than the likely average. Accurate figures on egg production could not be procured from Baladi egg producers because they usually kept no record for their small flocks. The only source from which it was possible to obtain accurate records on egg production of different breeds was King Hussein College of Agriculture. The annual egg production for Baladi and Leghorn was found there to be as follows:

Leghorn	(H & N strain)	233
Leghorn	(local)	158
Baladi	(normal flock)	96
Baladi	(selected strain)	137

But these figures are far from being representative for ordinary producers. Nutrition and disease control on this farm are much better than is ordinarily practiced by village housewives raising a few Baladi chickens.

In an interview with the Director of the Department of Veterinary Service, he suggested a range of 60-80 eggs as the annual average egg production for Baladi hens, and

160-200 for commercial layers. While the Head of the Division of Livestock in the Ministry of Agriculture estimated 90 eggs for Baladi layers. In the estimates presented in Table 11 it was assumed that the annual egg production of layers in commercial flocks was 160 eggs, and 80 for Baladi. It was thus calculated that the consumption of eggs in Jordan during the year 1963 amounted to 73,368,000 eggs. This is

TABLE 14
CALCULATED CONSUMPTION OF EGGS IN JORDAN
1963

Production	No. of Eggs
Commercial flocks, totalling 42,000 layers	
@ 160 eggs	6,720,000
Baladi flocks, 820,000 layers @ 80 eggs	65,600,000
Estimated total number of eggs produced	72,320,000
Number of eggs imported	5,337,000
Total egg supply	77,657,000
Less breakage and spoilage @ 5 percent	3,883,000
Less exports	106,000
Less eggs incubated	300,000
Estimated domestic consumption of eggs	73,368,000

quite lower than egg consumption in Lebanon for the same year which is estimated at 98,325,000 eggs.⁹

VII. Consumption of Broilers

The consumption of broilers in Jordan has increased dramatically over the last eight years. In the middle fifties the supply and consumption of chicken meat consisted exclusively of roosters, culled pullets, and worn out layers. But after commercial broiler production was introduced, domestic consumption increased by several times.

The consumption of broilers in Jordan during 1963 is calculated in Table 15 at 1,515,000 broilers. Again, the only source of possible gross error is the estimate of Baladi chicken consumption. The supply of Baladi chickens entering into the market is relatively small compared to the flow of broilers coming from commercial farms. But actual consumption of Baladi chickens is much higher than the quantity which goes into the market because of home consumption in the villages.

In Lebanon, broiler consumption in 1963 was estimated by the Ministry of Agriculture at 9,448,000 broilers.¹⁰

9
Mimeographed report by the Division of Poultry in the Lebanese Ministry of Agriculture.

10
Ibid.

TABLE 15

CALCULATED CONSUMPTION OF BROILERS IN JORDAN, 1963

	No. of Chicks Started	Percent Mortality	Number Raised
Number of baby chicks imported	1,295,460	10%	1,166,000
Less Leghorn pullets and breeding cocks (at 3% of total chicks placed)			35,000
Estimated number of broilers raised			1,131,000
Government-hatched chicks, 50% broilers	65,000	20%	52,000
Issa's Hatchery	40,000	10%	32,000
Baladi production of young chickens			300,000
Total number of chickens consumed			1,515,000
Total chicken consumption (live weight), kilograms			1,363,500
Total consumption of dressed chickens, kilograms			969,000

VIII. Some Characteristics of Poultry

Farming in Jordan

A sample of 55 producers was interviewed in the summer of 1963 for the purpose of collecting information on the production side of the poultry industry. The questionnaire used for this purpose

was aimed primarily at probing the structure of the poultry market as it was related to producers. A fuller account of the marketing aspects of the producers' survey will be discussed in Chapter III. But in this section we will consider only some of the general characteristics of poultry farming, aside from those pertaining directly to marketing.

A. Number of Producers Interviewed in Each District

A total number of 55 producers were interviewed during the course of this study. These constituted more than one third of all commercial poultry producers in Jordan at that time, estimated at 152. The sample of producers was selected from all production areas of the country, with the exception of Hebron and the South, where there is very little commercial poultry production. Table 16 compares the geographic distribution of the producers sample with that of all farms as found in the poultry census conducted last summer by the extension Department.

TABLE 16

GEOGRAPHIC DISTRIBUTION OF PRODUCERS IN THE SAMPLE

	Nablus	Jerusalem	Hebron	Jericho	Irbid	Amman and Belqa
Producers inter- viewed	25	2	-	7	4	17
Total No. of farms	63	14	9	11	9	43
Percent of sample to total	40	14	-	64	44	40

B. Distribution of Sample Farms According to Type

The sample of producers selected for this study covered the three types of poultry farming, layer, broiler, or mixed. It was endeavored to have the sample as representative as possible of all types of farms. The figures in Table 17 indicate that there was a smaller number of layer farms studied relative to their percent of total farms. This was unavoidable since there was no accurate information on the number and types of commercial poultry farms in Jordan at the time the survey was conducted. There was not time to interview more egg farms when the number of commercial poultry farms became known.

The distribution of poultry farms according to their type indicates a great rush into broiler farming. This phenomenon was discussed earlier in this chapter. Mixed poultry farming is also quite common. This shows that there is still no general awareness among producers about the technological and managerial benefits of specialization in either broiler or egg production.

TABLE 17
DISTRIBUTION OF FARMS ACCORDING TO TYPE

	Broilers	Layers	Mixed
No. of farms studied	25	5	25
Percent of sample	45	10	45
Total in the Country	75	41	36
Percent of all farms	49	27	24

C. Distribution of Broiler Flocks According to Size

Sizes of farms in the sample were fairly representative of commercial broiler operations. Farms of less than 500 broilers a month represented only 8 per cent of the sample whereas they actually constituted 41 per cent of total number of broiler flocks but produce only 13.4 percent of national broiler output. Farms with a monthly output of 500 to 3000 broilers constituted 60 per cent of the sample corresponding to 67 per cent of the total. This indicates that the sample is reasonably representative as to size of farms.

TABLE 18

DISTRIBUTION OF BROILER FLOCKS IN THE SAMPLE BY SIZE

	Number of Chicks Placed Per Month					
	500 & below	501-1000	1001-3000	3001-5000	5001-10,000	Over 10,000
No. of flocks	4	10	20	12	4	0
Percent of sample	8	20	40	24	8	0

D. Distribution of Layer Flocks According to Size

Table 19 shows that the number of layer flocks selected for the sample was not well representative of total size groups on a number basis. But the sample is fairly representative if we consider the per cent of total birds in each size group. The latter criterion is more relevant for the purpose of this study.

TABLE 19

DISTRIBUTION OF LAYER FLOCKS IN THE SAMPLE BY SIZE

	Number of Layers Per Flock					
	250 & below	251- 500	501- 1000	1001- 2000	2001- 3000	Over 3000
No. of flocks (Sample)	9	7	7	6	1	-
Percent of sample	30	23	23	20	4	-
Percent of total flocks	38	21	9	2	1	-
Percent of total egg output	22	29	23	14	12	-

E. Economic Importance of Farms to Producers

The distribution of farms according to their economic significance to their owners sheds more light on the relative economic position of poultry farming. Around 33 percent of all producers interviewed considered poultry a minor enterprise related to a large off-farm business, as shown in Table 20. Around 53 percent of the producers in the sample considered poultry as a major source of income. Out of these, 13 percent considered poultry as their only source of income. This indicates that not many producers believe that they can make a decent living by specializing in poultry, at least during the first few years until they gain experience and find they can operate a poultry farm successfully.

TABLE 20

ECONOMIC SIGNIFICANCE OF POULTRY ENTERPRISES

	<u>No. of</u> <u>Producers</u>	<u>Percent of</u> <u>Sample</u>
Poultry:		
The only source of income	7	13
A major farm enterprise	15	27
A minor farm enterprise	8	14
A major income with small off-farm business	7	13
A minor income with large off-farm business	18	33

F. Time Producers Had Been in Business

The length of time producers had been in business clearly indicates the recent growth of poultry farming in the country. One fourth of the producers in the sample had been operating for one year or less at the time they were interviewed. Eighty-five percent of them were in business for 3 years or less. Only 2 percent of the sample (i.e., one producer) had been operating for more than 6 years, as shown in Table 21

TABLE 21

LENGTH OF TIME PRODUCERS HAD BEEN IN BUSINESS

	No. of Producers	Percent of Sample
One year of less	14	25
More than 1 year and up to 3	33	60
More than 3 years and up to 6	7	13
More than 6 years	1	2

G. Correlation of Economic Significance and Period in Business

Table 22 presents a breakdown of the figures in Table 19 according to the economic significance of the poultry enterprise to the owner. This table shows that around 22 percent of the poultry farms were three years old or less and provided producers with a minor income compared to a large off-farm business. In the majority of these cases producers were employees in the government or in private concerns and raised poultry as a side line to supplement their modest incomes. In some cases producers were big businessmen who started poultry farming after they heard rumors of huge profits others were making.

TABLE 22
 ECONOMIC SIGNIFICANCE OF POULTRY ENTERPRISES VS.
 DURATION OF PRODUCERS IN BUSINESS

	One Year or less	More than 1 and up to 3	More than 3 and up to 6	More than 6
(Percent of Sample)				
Poultry:				
The only source of income	-	5.4	5.5	1.8
A major farm enterprise	9.1	16.4	1.8	-
A minor farm enterprise	3.6	9.1	1.8	-
A major source of income with small off-farm business	5.5	7.3	-	-
A minor source of income with large off-farm business	7.3	21.8	3.6	-

H. Education of Producers

The education of poultry producers ranged mostly from elementary to secondary school. Thirty-one percent of the sample producers had a secondary education, 11 percent were college graduates, and 4 percent were illiterate. There were only 4 percent who had been to agricultural high schools. (See Table 23)

These figures indicate a rather superior level of education among poultry producers compared with farmers

generally. It is doubtful whether any other class of farmers in Jordan has reached to this level of education.

TABLE 23
EDUCATION OF POULTRY PRODUCERS

	Illit- erate	Elemen- tary	Prep- aratory	Second- ary	Agr. School	Col- lege
No. of producers	2	15	13	17	2	6
Percent of sample	4	27	23	31	4	11

I. Correlation of Duration in Business
with Districts

Table 24 shows the length of time producers had been in business in the various districts. It is clear that Amman and Belqa District ranked top in the one year or less bracket. This denotes the recent rush into poultry farming in this district, a stage in which Nablus District passed through during 1960-1962. Nablus District is topping in the last three classes of time intervals. This conforms with the earlier statement regarding the emergence and early growth of poultry farming.

TABLE 24

LENGTH OF TIME POULTRYMEN HAD BEEN IN BUSINESS
IN VARIOUS DISTRICTS

	Nablus	Jeru- salem	Jericho	Irbid	Amman and Belqa
	(Percent of Sample)				
One year or less	3.6	1.8	5.5	5.5	9.1
More than 1 and up to 3	32.7	7.3	1.8	1.8	21.8
More than 3 and up to 6	7.3	-	5.5	-	-
More than 6 years	1.8	-	-	-	-

CHAPTER III

MARKETING PRACTICES AND SERVICES

The study of the market structure for poultry products will be discussed under four headings:

1. Marketing agencies
2. Marketing services.
3. Marketing margins.
4. Price situation.

This chapter will cover the first three items while the fourth will be discussed in detail in Chapter IV.

Marketing Agencies

The chain of agencies linked to each other in marketing farm products can be divided into three groups, each performing distinctive basic functions.

A. Producers

It may be controversial whether producers should be considered among the marketing agencies or not, but there is little doubt that producers can and should perform certain marketing service in addition to production. For instance, they may slaughter, dress their chickens, and transport them to retail shops, or clean and grade their eggs, all of which are considered as marketing

services. Besides, producers may also sell part or all of their produce directly to consumers in which case they will be their own marketing agencies. Therefore, any comprehensive study of the market for poultry products should begin on the farm.

B. Intermediary Channels

These are basically engaged in conveying the products from production centers to market outlets. In addition to this basic function, they may also perform one or more of the marketing services needed for the type of product they handle. For broilers, they may perform the slaughtering, dressing, and packing. For eggs they may do the cleaning, candling, grading, and storing. They sell primarily to retail agencies, but they may also sell directly to consumers.

This type of agency includes several forms of channels, of which the following are the most common in the poultry industry¹:

1. Hucksters

In rural regions where poultry is an important industry, hucksters collect eggs and poultry from the farms during seasons of high production. Ordinarily

¹ Description of the first five agencies is based mainly on Earl W. Benjamin *et. al.*, Marketing Poultry Products, 5th ed. (New York: John Wiley and Sons, Inc., 1960).pp.22-28.

they deliver poultry directly to poultry slaughtering plants. While eggs are sold to wholesalers, retailers, or consumers.

2. Truckers

The truckers' job is to connect the area of production with the market. They assemble the products from production areas and prepare them for shipment. They usually sell their eggs to wholesalers or large retailers. Live poultry is moved in truckloads to slaughtering plants.

3. Processing Plants

In areas of advanced poultry production, specialized poultry plants are now the principal handlers of live poultry. They receive truckloads of live birds and process them to ready-to-cook forms, and then ship them to wholesalers and retail outlets.

4. Wholesalers

Wholesalers are generally of two types, commission merchants and wholesale dealers. The former sell the product on a commission basis without buying it themselves. While wholesale dealers buy the goods and sell them, assuming the risks of loss or gain.

5. Jobbers

These collect the products from producers and channel them to retailers. Or they may buy large lots from various producers and sell them in smaller lots to

retailers. Beside their main function of assembling eggs and chickens, they may carry out some additional services such as grading and packing for retail trade.

6. Poultry Merchants

A poultry merchant is a specialized dealer engaged in wholesale or retail sale of poultry products to consumers and otherwise. In Jordan he usually has a shop in the market area where he displays his chickens alive in cages, and keep his eggs in wooden boxes (with saw dust or tiben in between), or less often, he keeps them in ordinary egg molded fiber cup trays. Generally they sell chickens alive but most of them also have arrangements to slaughter the birds and dress them, if consumers ask for this service. In such cases they charge a service fee of one or two Jordanian piasters. Pictures 3 and 4 in the appendix show a poultry shop and the dressing equipment in the back of the same shop.

C. Retail Agencies

These include a variety of marketing agencies which perform the last function of delivering the product to consumers. Thus, they constitute the last link in the chain of marketing agencies connecting between producers and consumers. They include such agencies as groceries,

food stores, restaurants, and hotels. In this sense we can also consider poultry merchants in Jordan as retail agencies, since they do a lot of direct selling to consumers, especially of live broilers.

These are the major types of agencies that are involved in marketing poultry products in most countries, including Jordan. In the following pages we will analyze the situation in Jordan more closely by following the products from producers to consumers and evaluating the intervening channels.

In the first place, poultry producers in Jordan do not seem to engage in any form of contract selling. This may be mainly due to two reasons:

1. Very few producers can manage with their present set-ups to turn out regularly large quantities of eggs or broilers which would meet a specified uniform standard.
2. Production is so competitive that marketing agencies rarely find any difficulty in procuring their needs on reasonable terms. Thus there is no need to contract in advance to be assured of the amounts required to supply their customers.

During this survey, only two cases were found where there was some sort of contract selling between producers and marketing agencies, one was for eggs and the other for broilers. In both cases, the respective marketing agencies were very much interested in getting constant supplies of

reasonably standardized quality.

With this unlimited freedom in selling their output, poultry producers have several alternative channels for disposing of their products. Foremost among their outlets is direct sale to consumers which almost every producer did. This method was appealing and easily accessible because of the proximity of most farms to consumption centers. This was further facilitated by the fact that poultry products, especially eggs, are rendered little or no auxiliary service when handled by subsequent marketing agencies in the various channels going to consumers.

Selling directly to consumers is generally regarded as the most profitable outlet for producers to seek. However, this method is not much relied upon by most commercial poultry producers. They usually produce much more than they could possibly sell directly to consumers, so they have to channel the largest part of their produce through other marketing agencies. Furthermore, direct selling to consumers in towns and cities is time consuming and involves transportation expense.

Selling to poultry merchants is the most common method reported by producers. Table 25 shows that the frequency of use of this method by producers is far higher than all others combined.

TABLE 25
NUMBER OF PRODUCERS SELLING TO VARIOUS
MARKETING AGENCIES

Marketing Agency	No. of Producers
Poultry merchants	44
Cooperatives	2
Groceries	15
Hotels and restaurants	<u>3</u>
Total reporting	64

Next in importance comes grocery stores. These sell large quantities of eggs but usually they do not deal with broilers because of consumer preference for live chickens. Most Jordanian consumers are still in favor of buying their broilers alive from poultry dealers who may dress the birds selected. Grocery shops can not conveniently handle such live chickens. Groceries obtain their supplies of eggs directly from producers or, more often, from poultry merchants.

Hotels and restaurants are sometimes very important market outlets. They are discussed in more detail at the end of this chapter. In most cases, their connections with producers are not very strong. Only four producers cited them as a means of selling their produce. Hotels and restaurants find it safer and more reliable to get their

needs from poultry merchants than from individual producers, although they may have to pay a little extra money. It is important for them to be able to obtain quickly whatever number their customers may order.

Another peculiar kind of marketing agency is what might be called "country poultry collectors". They are merchants who usually travel on donkey-back from one village to another where they buy eggs and chickens from farmers' wives and sell them to other poultry merchants in neighboring towns. Thus they perform the basic functions of truckers, hucksters, and jobbers which were described earlier. At the present, country poultry collectors remain the major means for conveying Baladi egg surpluses from villages to poultry merchants in neighboring towns. But their chicken business is decreasing in importance due to the rapid expansion in commercial broiler production.

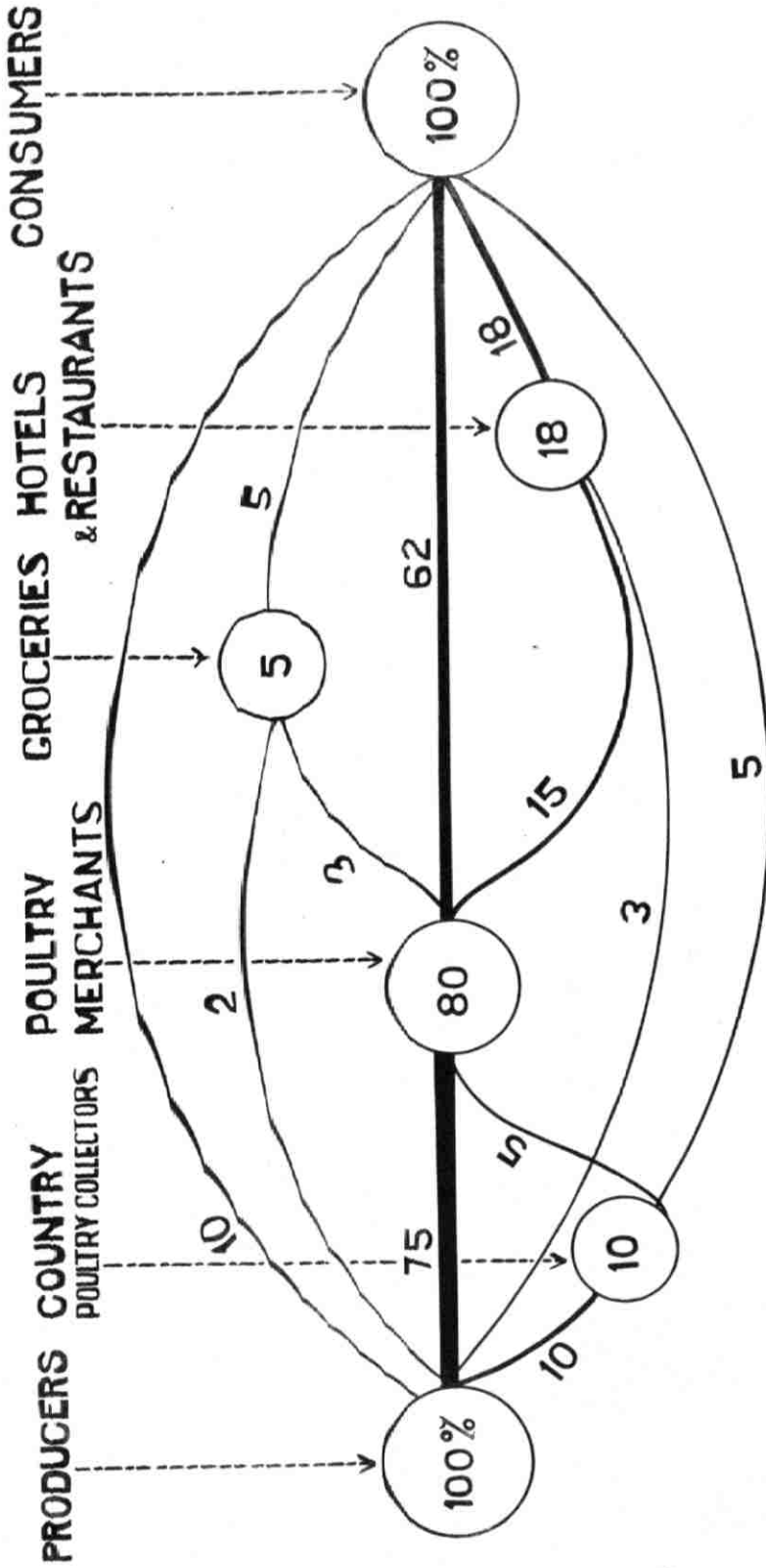
A second type of travelling poultry dealer in Jordan is the trucker. As described already, such travelling merchants mainly operate between producers and marketing agencies. They do not have shops of their own but they buy eggs and broilers from producers and sell them to poultry merchants in the major markets. During the course of this study there were two such mobile marketing agencies conveying broilers and culled layers from Nablus District to Jerusalem and Ramallah. The effective mobility of such merchants

helped to reduce market heterogeneity by hauling the products from surplus areas to markets in deficit areas.

The significance of each of the above discussed agencies in poultry marketing in Jordan varies from one region to the other. But it is generally observed that poultry merchants constitute the most significant agency among all, (see Charts 1 and 2). It is estimated that they handle about 80 percent of all broilers which go into urban markets. Next in importance comes hotels and restaurants which account for 18 percent of broilers sold to consumers, most of which they buy from poultry merchants.

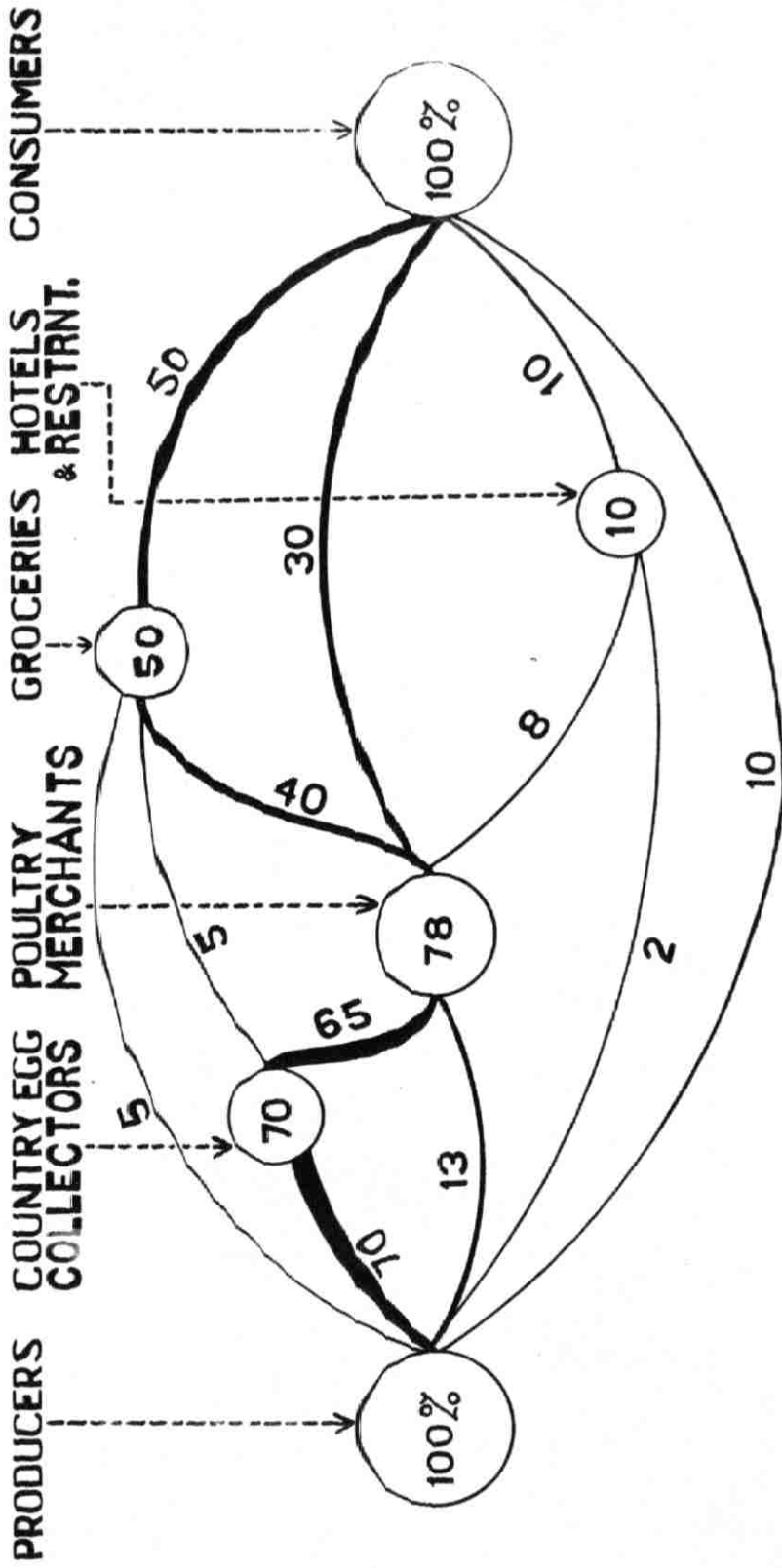
For eggs, the situation is somewhat different. Poultry merchants are estimated to handle about 78 percent of the egg turnover. But it is evident that country egg collectors play the primary role of assembling Baladi eggs and trucking them to poultry merchants. Groceries, unlike the case with broilers, are quite important in the retail selling of eggs. They handle approximately 50 percent of all eggs sold to consumers, getting most of them from poultry merchants.

The previous analysis of the various marketing channels was representative of the situation as it had been up to the summer of 1963. In early August of that year cooperative marketing was introduced in Nablus area. This has slightly



MARKET SUPPLY IS DIVIDED ROUGHLY:
90% COMMERCIAL BROILERS ; 10% BALADI BROILERS

CHART 1
MARKETING CHANNELS OF BROILERS
Percentage of Broilers Passing Through Various Channels



BALADI FARM FLOCKS EGGS 70%; COMMERCIAL POULTRY FARM EGGS 30%

CHART 2

MARKETING CHANNELS OF EGGS

Percentage of Eggs Passing Through Various Channels

modified the above described model of market channels in the area in which the cooperative operates. A brief discussion of this new method of marketing is presented in the following pages.

Cooperative Marketing of Poultry Products

The discussion of the various marketing channels for marketing poultry in Jordan remains incomplete without discussing the role of cooperatives in this field. The cooperative movement in Jordan has made remarkable progress since its official inception in 1952. A large number of cooperatives have been organized to perform various functions, especially savings and credit. Cooperative marketing was attempted in several cases. However, at the present there are only eight marketing cooperatives, most of them being engaged in marketing fruits, vegetables, or olive oil.

In 1963, the Department of Cooperative Development and the Jordan Cooperative Central Union responded favorably to an application submitted by a group of poultry producers from Nablus District asking for help in organizing a poultry cooperative in their district. The suggested cooperative was licensed in June 1963 as a regional cooperative poultry association with a provision forbidding licensing of other poultry cooperatives in the same district. In the fall of 1963 there were 32 members in this cooperative out of a total of 63 poultry producers in Nablus District.

Nablus Poultry Cooperative (N.P.C.) performs several services for its members. In this sense it may be considered a multi-purpose poultry cooperative. Its functions, as stipulated in the By-Laws, include the following:

1. Selling members' produce with a minimum commission of 3 percent on total sales.
2. Contracting for needed supplies in large quantities and selling them to members on a cost basis.
3. Advancing loans to its members, whether in cash or in kind. The latter type of loan is preferred whenever it is possible.
4. Providing technical advisory help for members. Practices are recommended by a hired technician and member-producers are bound to follow the recommendations.

In its capacity as the marketing agent for its members, the N.P.C. proved reasonably successful. Producers deliver their outputs of eggs and broilers at the store of the society in Nablus, and the manager takes care of their sale. Returns to producers are calculated on an average price computed for an interval of two months, and not at the actual price for which a particular batch is sold.

Up to March 1964 the N.P.C. restricted its marketing services to assembling and selling of its members' products. Little or no improvements were introduced in the primitive

methods of auxiliary marketing services long practiced by poultry merchants. Egg cleaning is not practiced. An automatic egg grader was bought in September 1963 but was not put into use since then. Processing of broilers was not carried out until very recently when they started to do some dressing whenever a customer so requested.

The N.P.C. is mainly engaged in wholesale distribution of the products delivered to it by the members. Its chief customers are poultry merchants in Jerusalem and Nablus. A substantial volume of its broilers goes to a marketing agency in Jericho where they are dressed and later sold in Amman and Jerusalem. Retail sale at the depot of the N.P.C. is not encouraged, but there is no definite policy of refusing to sell to individual consumers.

The other major activity of Nablus Poultry Cooperative is the provision of supplies for its members. Feed and baby chicks are bought in large quantities and sold to members at wholesale cost plus the expenses of handling. By pooling all their purchases, the members acquire strong bargaining power which enables them to obtain their needs on terms better than they could get individually. Trucking of supplies to members' farms is undertaken by the cooperative itself in a pick-up truck used exclusively for this purpose. Hauling of broilers and eggs in this vehicle is not permitted so as to avoid the transmission of communicable poultry diseases.

After the success achieved by this pioneer cooperative society, the Jordan Cooperative Central Union is now contemplating encouraging the establishment of a similar society in the Jericho area, and possibly a third one in Amman District. Then these area cooperatives would coordinate their activities through a union of which they would be the members. An appraisal of this plan will be discussed in Chapter VI under recommendations.

Marketing Services

Section I of this Chapter covered an analysis of the types and relative significance of the various handlers of poultry products. In this section an attempt is made to list and evaluate the marketing services that each of the previously mentioned agencies performs for the products while they are in their hands. Here again it is logical to begin with the producers.

A. Producers

Producers who were interviewed in this survey were asked several questions regarding the marketing practices they usually performed. This section covers a summary of the findings as stated in the producers' questionnaires.

1. Broilers

Turning to broiler farming, it is observed that the variety of marketing services rendered by producers

is more limited than with eggs. Aside from putting the live birds in crates and trucking them to the market, producers do no marketing services at all. The only exception to this is when there is a demand for ready-to-cook broilers. Then some producers may slaughter and dress the birds for their customers.

In this study of poultry marketing in Jordan, producers were asked about the form in which they sold their birds. The results are given in Table 26.

TABLE 26
NUMBER OF PRODUCERS SELLING BROILERS ALIVE AND DRESSED

	No. of Producers	Percent of Sample
Sell alive	34	68
Dress sometimes	6	12
Sell mostly dressed	4	8
Sell alive and dressed	6	12
Totals	50	100

It appears that the main reason producers do not carry out more dressing is consumers' preference for live birds. Around 73 percent of producers said they believed that consumers preferred live chickens, 27 percent thought

that consumers preferred live birds which were dressed upon request, and no producer believed that consumers were in favor of ready-to-cook broilers. In fact, most producers said that they would be willing to dress more broilers whenever there would be a market for them.

One more marketing service to be discussed is the assembly of poultry products from the producing areas and trucking them to markets in neighboring towns. Who does this depends partly on the conditions of supply and demand. When there is a strong demand for poultry products, especially in the case of broilers, poultry merchants are ready to buy the chickens on the farm and truck them at their own expense. But in other times producers are obliged to deliver their birds to the shop of the poultry merchants. The latter avoids buying broilers from distant farms for fear of shrinkage in weight, which they say may amount to 3 percent.

2. Eggs

The frequency of collecting eggs from the nests was rather adequate for maintaining their quality. Table 27 shows that around 60 percent of all producers gathered eggs four times a day or more.

Cooling of eggs is rarely practiced, only three out of 26 producers reported that they cooled their eggs,

simply by placing them in cool cellars. Producers were generally of the opinion that there was no pressing need for cooling eggs under present circumstances

TABLE 27

NUMBER OF TIMES PER DAY EGGS ARE COLLECTED

	No. of Producers	Percent of Sample
One time	3	11
Two times	3	11
Three times	5	19
Four times	9	33
Five times	4	15
Six times or more	3	11
Totals	27	100

TABLE 28

COOLING OF EGGS AFTER GATHERING

	No. of Producers	Percent of Sample
Cool	3	11
Do not cool	23	89
Totals	26	100

of the egg industry. Eggs are rarely held for more than a week before they reach retail agencies, which in their opinion is too short an interval to make cooling necessary. However, since the temperature in summer is fairly high (30-40^o C) and most of the eggs are fertile, the validity of their assumption is questionable. According to E. Benjamin², "High temperature is especially disastrous to the quality of a fertile egg. At 85^o F the development of the embryo proceeds at a relatively rapid rate. At this temperature infertile eggs also deteriorate rapidly so keeping the eggs cool is even more important than having them infertile."

Grading is considered **one** of the most important practices in egg marketing. Around two thirds of producers reported that they did not do any grading, as shown in Table 29. While 30 percent of them reported that they did so. Those who graded usually classified eggs into two or three grades according to size as judged by the eye³. Machine grading was not reported.

² Earl W. Benjamin et. al., Marketing Poultry Products, 5th ed. (New York: John Wiley and Sons, Inc., 1960) p. 56.

³ Grading standards in the United States include several other attributes beside size, such as quality of the shell, size and condition of the air cell. Earl Benjamin et.al., op.cit., pp. 66-70

TABLE 29
GRADING OF EGGS BY PRODUCERS

	No. of Producers	Percent of Sample
Do not grade	18	67
Grade	8	29
Grade sometimes	1	4
Totals	27	100

Candling was even less practiced. Only 7 percent of the producers interviewed reported that they carried out some form of candling before they sold their eggs, as summarized in Table 30. Again, producers argued that there was little need for such a practice.

TABLE 30
CANDLING OF EGGS BY PRODUCERS

	No. of Producers	Percent of Sample
Do not candle	25	93
Candle	2	7
Candle sometimes	0	0
Totals	27	100

Cleaning of eggs was a popular practice among producers. More than 50 percent of the sample producers cleaned their eggs in one way or another, as revealed in Table 31. There were several methods used but analysis of information collected from producers found that 50 percent of those who cleaned eggs used a wet cloth and about 19 percent washed eggs with detergents, as shown in Table 32. Both of these methods are known to facilitate faster egg spoilage if eggs are kept longer than a week before they are consumed, especially when not refrigerated.

TABLE 31
CLEANING OF EGGS BY PRODUCERS

	No. of Producers	Percent of Sample
Clean their eggs	14	52
Clean sometimes	2	7
Do not clean	11	41
Totals	27	100

TABLE 32
METHODS OF CLEANING EGGS

	No. of Producers	Percent of Sample
Wet cloth	8	50
Dry cloth	2	12
Glass paper	3	19
Washing with detergents	3	19
<hr/>		
Totals	16	100

As to packing eggs to market, 11 percent of producers still adhered to the traditional methods of shipping eggs in baskets or boxes, according to the figures presented in Table 33. The rest used modern means, most commonly molded fiber cup trays placed in wooden boxes. Nevertheless, primitive methods of packing are still in dominant use by country egg collectors who are the primary handlers of all Baladi eggs coming into urban markets.

Cracking of eggs during transportation is not considered a serious problem. No producers reported more than 2 percent cracking of eggs until they are delivered to the marketing agencies. It is generally estimated that only 1 - 2 percent of eggs marketed are cracked

enroute to the city dealers. However, this estimate applies only to commercial poultry farms where modern means of packing are used. But the situation is much different with Baladi eggs trucked in large boxes from villages to city markets.

TABLE 33
PACKING MATERIALS USED FOR TRANSPORTING EGGS
TO MARKETS

	No. of Producers	Percent of Sample
Basket with tibia	1	4
Boxes with tibia	2	7
Molded cup trays	3	11
Trays in wooden boxes	21	78
	27	100

B. Country Poultry Collectors and Poultry Merchants

Next after producers in the marketing chain come country poultry collectors and poultry merchants. As to the former, the functions they normally perform are to collect eggs and chickens from farmers, assemble them in quantity, and truck them to poultry merchants in towns and cities. In other words, they perform marketing service which create a place utility. They also create a possession utility by virtue of their selling to consumers.

Poultry merchants are engaged in the kinds of marketing

functions listed below:

1. Creation of place utility.
2. Creation of time utility.
3. Creation of possession utility.
4. Performance of auxiliary and facilitating functions.

An example of place utility is the assembly of the products from different farms and regions, often with the help of country poultry collectors, and trucking them to other major markets such as Jerusalem and Amman.

Storage of eggs, though done for very short periods of time, is an example of creation of time utility. In Hebron some big poultry merchants reported that they stored eggs for several months by keeping them in barrels containing a lime solution. Refrigerated storage of eggs was not practiced.

Creation of possession utility is performed through the buying and selling of goods. It was shown earlier that poultry merchants constituted the most important channel linking producers to consumers by buying and reselling chickens and eggs, thereby creating possession utility for consumers.

The fourth kind of marketing service was investigated in some detail. Twenty poultry merchants were interviewed and their responses were recorded on a special questionnaire. Table 34 summarizes the relevant parts of these questionnaires.

TABLE 34
NUMBERS OF POULTRY MERCHANTS PERFORMING VARIOUS SERVICES

	Number of Poultry Merchants	Percent of Respondants
Grading of eggs: Grade	1	35
Do not grade	13	65
Cleaning of eggs: Clean	2	10
Do not clean	18	90
Candling of eggs: Candle	2	10
Do not candle	18	90
Dressing of chickens: Do not dress	4	19
Dress sometimes	6	29
Sell mostly dressed	2	9
Sell alive & dressed	9	43
Refrigeration: Use it	10	48
Do not use it	11	52

The above summarization shows that poultry merchants do not do very much better than producers in performing the above mentioned services. The only service which they seemed to do more than producers was grading of eggs. Even here they were probably motivated by price differentials rather than by servicing consumers.

Cleaning of eggs was rarely done, only 10 percent of

poultry merchants said they did it. However, this may be due to the fact that more than half of the producers had already cleaned their eggs before selling them.

Candling was also found to be a rare practice; only two merchants said that they candled. These handled Baladi eggs the quality of which was uncertain.

Slaughtering and dressing of chickens were common practices. Nearly 80 percent of the poultry merchants interviewed reported dressing some of their chickens. Less than one fifth of the poultry merchants did not do any slaughtering. More than one third of them were equally ready to sell dressed or live birds, while only two merchants out of 21 sold mostly dressed chickens. Both of these merchants were located in Jerusalem District and sold their broilers mostly in the city of Jerusalem.

Refrigeration is quite common among merchants of poultry products. About half of the merchants had refrigerators in their shops, which they used mostly to store their dressed chickens for short periods of time pending to sale to customers.

One observation is worth making before concluding this section. Poultry merchants in Jerusalem District were generally more progressive than all those in other places in regard to the marketing services discussed above. This may be due to their location in a more exacting market

sustained by tourists' demand for quality poultry products.

The same is true in Amman but to a less marked extent.

C. Hotels and Restaurants

Other marketing outlets which are of growing importance for the poultry industry are hotels and restaurants. Their significance is often seasonal and is currently restricted to areas where tourists and foreigners spend most of their time. Jerusalem is most important in this regard since it is the central attraction for tourists. Chapter V on price analysis covers a fuller discussion of this point.

It is generally observed that the influx of tourists varies according to season, rising sharply at Christmas and Easter. Amman also shares a part, though not as great, in the tourism industry. Moreover, Amman, as the capital of the country, receives a large number of foreigners who come for reasons other than touring. So it may be supposed that consumption of poultry products by foreigners is more steady in Amman than in Jerusalem, though it may not be as high at certain occasions.

Ramallah is another city where hotels and restaurants are active at certain seasons. During summer, Ramallah, which is the foremost summer resort in Jordan, receives a large number of Jordanians who go there for week ends or short vacations. This creates there an active market for broilers in the summer.

A short open-end questionnaire was prepared and distributed to important hotels and restaurants located mostly in the above mentioned three cities. This questionnaire was aimed mainly at learning the preferences of certain class of consumers which may be different from those of ordinary Jordanian consumers. Moreover, it also enquired about certain characteristics of the poultry market as it relates to this type of marketing agencies.

Out of 25 copies distributed 7 were received, 2 from Ramallah, 3 from Jerusalem, and 2 from Amman. The results of the returned questionnaires are summarized below:

1. The major sources of broilers and eggs purchased by restaurants and hotels were poultry merchants. Only in two cases supplies were bought directly from farms.
2. All of them were using chickens and eggs produced on commercial farms which they generally preferred to those produced by Baladi farm flocks. Only one hotel manager preferred Baladi chickens saying that they had better flavor.
3. Higher consumption in summer was reported in four cases, two observed no difference, and one said that he used less chickens and eggs in summer.
4. The preferred dressed weight of chickens ranged from 500 to 700 grams, with an average of 600.
5. Fluctuations in prices were observed in four cases, while two others reported no fluctuations.

6. Recommendations for developing the industry were centered around supply and prices. Four respondents recommended further expansion in production of broilers and eggs so as to reduce prices and promote consumption.

Marketing Margins

In order to gain a better understanding of this important subject it may be useful first to discuss some of the terms commonly used in marketing literature⁴ :

"Margin" refers to the difference between the values of physical quantity equivalents at different levels of marketing. It is essentially the difference between the prices paid and received by any specific marketing agency. The "absolute margin" is expressed in terms of dinars and piasters.

The "marketing margin" is used in a different sense. It is equal to the absolute margin of any type of middleman divided by the retail price.

"Price spread" is a term which is sometimes used as a synonym of the absolute margin.

The "breakdown of the consumer's dinar" is used to mean the average absolute margins of different types of middlemen or assignable to different marketing functions, divided by the retail price.

⁴ The definitions in this section are extracted from: Frederick L. Thomsen, Agricultural Marketing (New York: McGraw-Hill Book Company, Inc., 1951), pp. 213-219.

There is more than one method to compute the marketing margin of a commodity but one of the most common methods is the comparison of prices at the different levels of marketing. But one should be careful here to get price quotations which are representative of the general level of prices they are supposed to represent.

The Break Down of Consumer's Dinar on Poultry

The farmer's share of the consumer's dinar is a function of (1) the absolute retail value of the commodity and (2) the absolute aggregate of marketing charges. The difference is the part of the price paid by consumers which the farmers receive for the products when they leave their farms.

An analysis of marketing margins of eggs and broilers in Jordan requires closer attention than what could be provided in the general study reported in this thesis. But it may be still suggestive and useful to discuss these as they were observed in Jordan during the course of this study in the summer of 1963.

The distribution of the consumer's dinar on eggs and broilers varies widely depending on what agencies are involved in the channel between producers and consumers. It has been illustrated in a previous section that there are a number of agencies which are involved in marketing poultry products, and which practically all sell to consumers. However, we shall consider here that a typical channel for broilers consists of producers and poultry merchants, while for eggs it consists of

producers, country egg collectors, poultry merchants, and groceries.

A sample of 25 marketing agencies were interviewed and asked about the margin they usually added to the price they paid for their products. The results were as follows:

	Eggs	Broilers
	(J.Pst. Per 100 Eggs.)	(J.Pst. Per Kg.Live Wt.)
Country egg collectors	10	4
Poultry merchants	6	2
Groceries	22	(Not handled)

On the basis of these findings, the break down of the consumer's dinar paid for eggs and broilers in Jordan, through typical channels, is shown in Table 35⁵.

It is clear from this analysis that the producer's share of the retail price of eggs and broilers is quite high. In the United States, it is estimated that producers get 58.2 percent and 50.0 percent of the retail price of eggs and broilers, respectively.⁶

⁵ The channel here is typical only for Baladi eggs collected by country egg collectors. The situation is different in the case of eggs produced on commercial farms. Here, a typical channel consists of poultry merchants and groceries, and in such cases the producer's share of the consumer's dinar goes up to approximately 82 percent.

⁶ U.S., Economic Research Service, Marketing and Transportation Situation (Washington: United States Department of Agriculture, MTS-152, Feb. 1964), pp. 12-13.

TABLE 35

BREAK DOWN OF CONSUMER'S DINAR ON POULTRY

<u>Eggs</u> ⁷		<u>Broilers</u> ⁸	
Percent of Consumer Price		Percent of Consumer Price	
Country egg collectors	6.3	Poultry merchants	7.1
Poultry merchants	3.8		
Groceries	13.9		
<hr/>		<hr/>	
All marketing agencies	24.0	All marketing agencies	7.1
Producer	76.0	Producer	92.9
<hr/>		<hr/>	
	100.0	Total	100.0

There are two main reasons for the apparent advantage of Jordanian poultry producers:

1. Little service performed by marketing agencies:

Section II of this chapter covered a rather detailed analysis of the marketing services performed by the various types of marketing agencies. It was mentioned there that broilers are generally marketed alive with no auxiliary service being rendered, except when consumers asked poultry merchants to slaughter and dress the birds purchased. For eggs, auxiliary services also are not in common use. They

⁷ Based on a mean price of J. Pst. 1.58 per egg

⁸ Based on a mean price of J. Pst. 28 per Kilogram.

are mostly performed by subsequent handlers.

2. Strong consumer demand relative to supply during certain seasons of the year. In fact, it is found that the spread between producer's and retail price of broilers reaches to a minimum late in the summer when the market is most active.
3. Strong competition between moderate number of dealers each with enough volume for low handling costs per unit of product. Another aspect of this oligopolistic type of market is the general lack of imperfections resulting from monopoly, transportation barriers, and credit complications between producers and marketing agencies. The marketing agencies are able to operate profitably on narrow margins, and there is a large enough number that there is effective competition to keep the margins narrow.

CHAPTER IV

PRICES

Soon after commencing this study, it became clear that the most conspicuous problem poultry producers in Jordan were facing originated from variations in the prices of broilers. It was generally felt that broiler prices were declining steadily to a level where the margin of profit was very narrow. Moreover, producers reported wide fluctuations in broiler prices from time to time, creating severe instability in the industry. It was largely for this reason that broiler farming was undergoing a rapid change in the number of producers and volume of production.

Egg producers, on the other hand, did not feel that egg prices were at a low level, nor that they were undergoing a declining price trend. But they all agreed that egg prices fluctuated in a seasonal pattern which in most cases was fairly predictable. Occasional depressions in egg prices were said to take place whenever large quantities of eggs were imported. For this reason, most egg producers were in favor of forbidding egg imports and protecting local production with an import tax.

With this background information on the price situation it was felt that this problem should occupy an important part of the study.

The analysis of the price situation for broilers and eggs was approached in two stages. The problem was first surveyed from the point of view of producers and marketing agencies. Producers and poultry dealers were asked about the prices they received or paid for eggs and broilers during the previous year, and about the reasons for any variations they might report. Second, the whole price situation was analyzed objectively in view of pertinent data collected from different sources. The analysis attempted to reveal the magnitude and causes of price fluctuations, independent from all ideas that might be conveyed by producers or marketing agencies.

Producers Survey

Producers interviewed during the course of this study were asked the following questions relative to the prices of eggs and broilers:

1. Is the price of the product set at the city market or at your farm?
2. What prices do you receive?
3. Why do prices change from month to month?
4. Do you have difficulty in selling your broilers and/or eggs when they are ready for market?
5. If yes, to what extent does this affect prices?

The replies for these questions are summarized and the figures presented in the following pages.

A. Place of Fixing Price

Table 36 shows that half of all producers in the sample had their prices fixed at the city market, 28 percent on the farm, and 22 percent said that they used both methods. In many cases the place of fixing the price depended to some extent on the conditions of supply and demand. When the demand for the product was strong, as the case with broilers late in the summer, poultry dealers would be actively searching for their needs. In most cases, however, they preferred to pay the price at their shops in order to avoid shrinkage losses in live broilers, or breakage of eggs through transportation.

TABLE 36
PLACE OF FIXING PRICE

	No. of Producers	Percent of Sample
Price fixed at the city market	27	50
Price fixed at the farm	15	28
Used both methods	12	22
Totals	54	100

B. Prices Received by Producers

In most cases, it was not possible to collect exact figures on prices received by producers because they usually kept no accurate records of their sales. So most producers depended on their memory for estimating the prices they received for their products over the previous year. Such estimates are not ideal for an accurate analysis of price movements but they do give an impression on the general level of prices and the direction of medium term trends. Charts 3 and 4 show a graphical presentation of broiler and egg prices respectively. Both of these curves were found to follow a seasonal pattern, more or less common in the three major production areas of Nablus, Amman, and Jericho. A more precise analysis of the monthly and regional variations in prices will follow later in this chapter.

C. Reasons for Price Variations

The reasons for price variations of broilers as reported by producers were numerous. Table 37 indicates that most producers considered the influx of Jordanians returning home in the summer from their posts in Kuwait and Saudi Arabia as the most important reason for the seasonal rise in prices of broilers. Tourism and irregular numbers of baby chicks placed in broiler houses ranked next in importance. There were some other less important reasons reported, such as religious feasts and competition among producers. Table 37 gives the

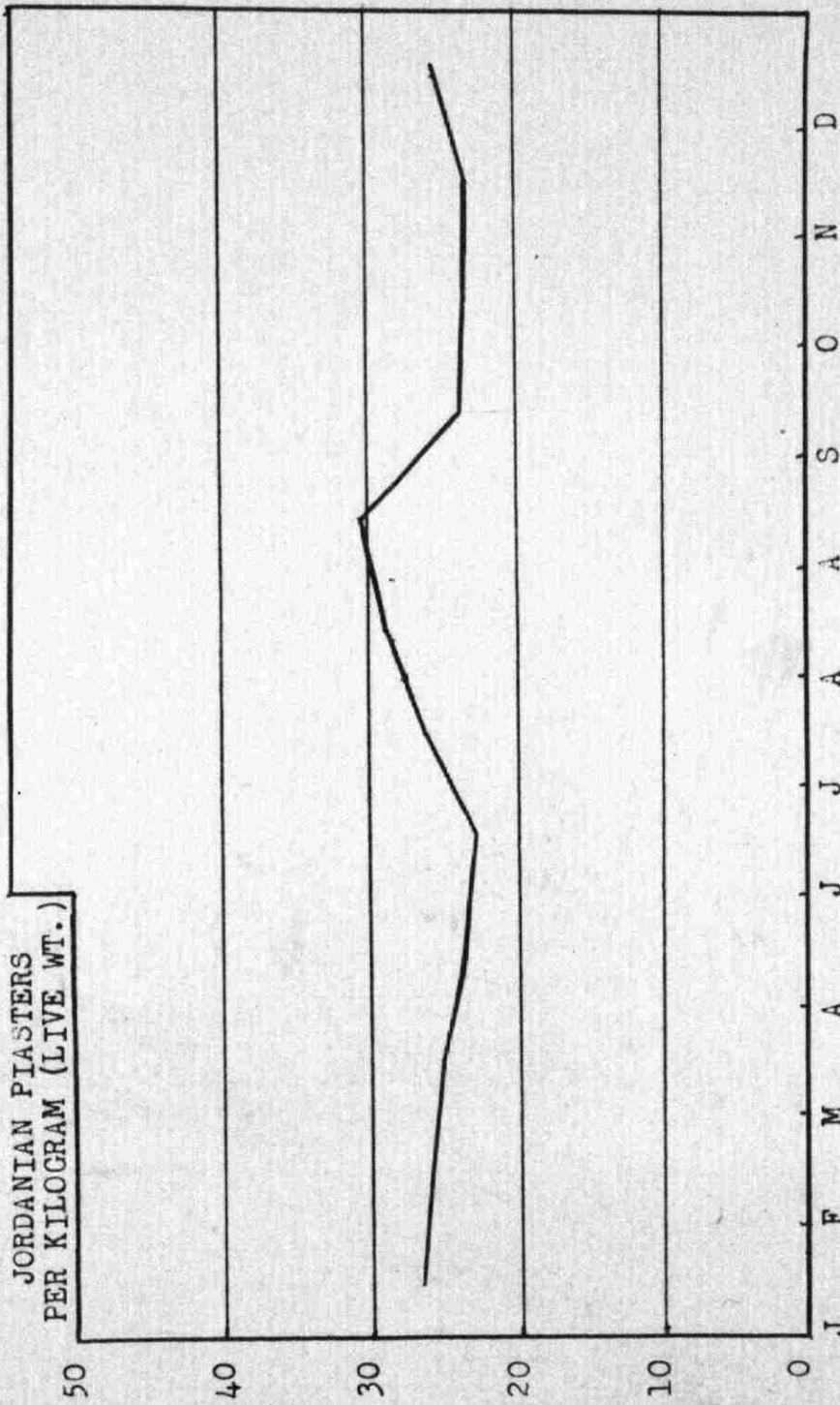


CHART 3

AVERAGE PRODUCERS' PRICE OF LIVE BROILERS
(ALL DISTRICTS)

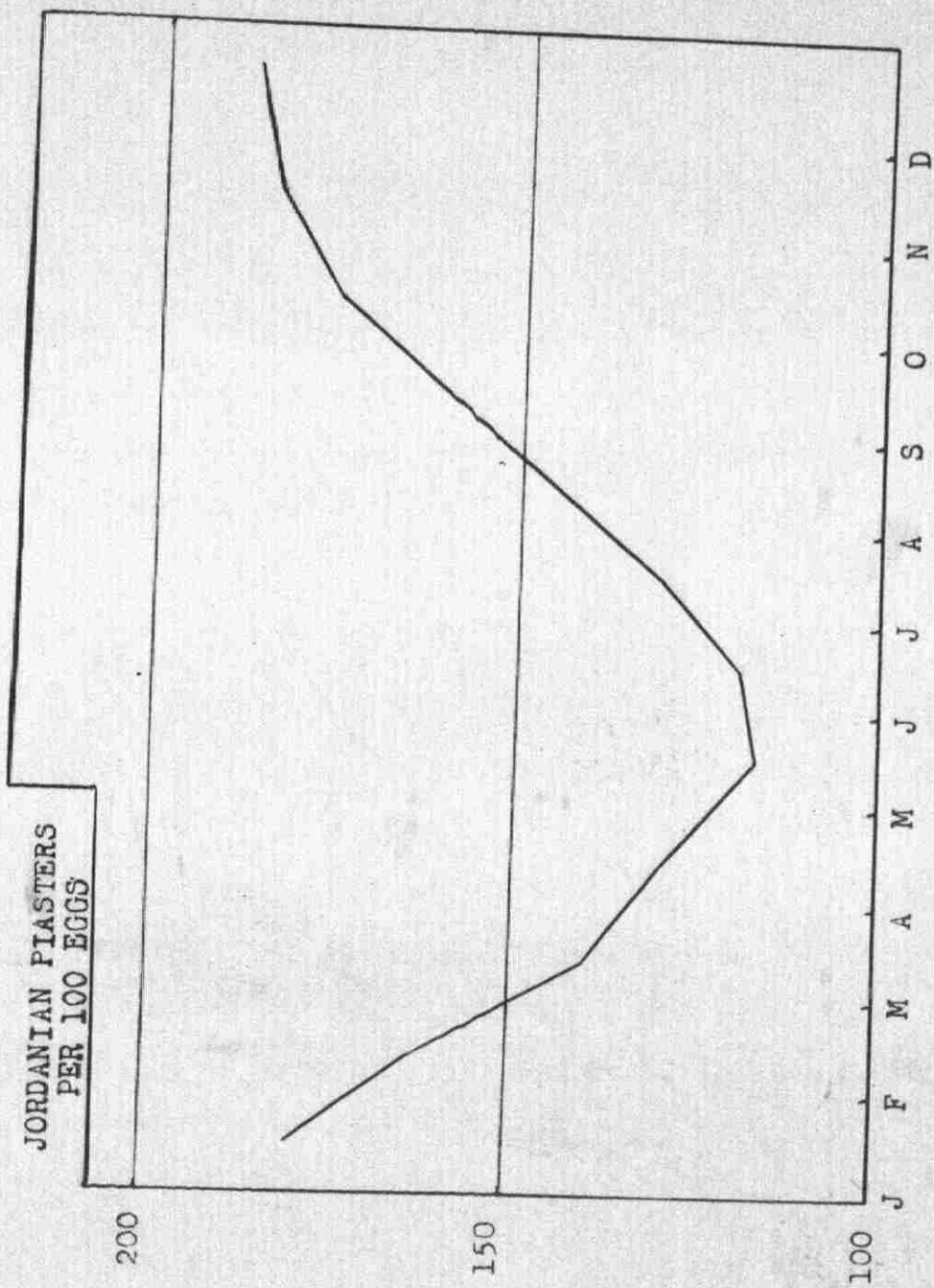


CHART 4
AVERAGE PRODUCERS' PRICE FOR EGGS
(ALL DISTRICTS)

frequencies of all factors which are reported to bear on the prices of broilers.

TABLE 37
FREQUENCY OF FACTORS AFFECTING BROILER PRICES

	Frequency	Percent of Average
Jordanians returning for summer	29	207
Tourists visiting Jordan	26	186
Irregular baby chick placements	25	178
Too many small competing farms	14	100
Irregular arrivals of baby chicks by planes	5	36
Religious feasts	13	93
Political unrest	6	43
Diseases killing broilers	6	43
Competition with Baladi chickens	2	14

As for eggs, price variations were reported to be almost entirely due to changes in the supply of eggs in the market. Producers considered seasonal changes in production to be the most important reason for price variations. Egg imports ranked next in importance. Reasons pertaining to demand fluctuations were mentioned only once.

D. Difficulty in Selling Eggs and Broilers

Egg producers almost unanimously agreed that generally they found no difficulty in selling their produce. Table 39 shows that only one producer had found it generally difficult

to sell his eggs, and another one had difficulty only at times.

TABLE 38
FREQUENCIES OF FACTORS AFFECTING EGG PRICES

	Frequency of Factor	Percent of Average
Seasonal fluctuations in production	18	243
Egg imports	13	176
Epidemic disease infections	2	27
Severe weather changes	3	40
Increased consumption in winter	1	14

TABLE 39
DIFFICULTY IN SELLING EGGS

	Number of Producers	Percent of Sample
Difficult	1	3
Not difficult	27	94
Sometimes difficult	1	3
	29	100

For broilers, the situation is greatly different. Only 42 percent of the producers reported no difficulty in selling their broilers. While 43 percent said that it was generally difficult, and 15 percent had difficulty sometimes (see Table 40.) Difficulty in selling broilers, whether occasional or general, was reported to cause lowering in prices to the extent that buyers would take all the product.

TABLE 40
DIFFICULTY IN SELLING BROILERS

	Number of Producers	Percent of Sample
Difficult	21	43
Not difficult	20	42
Sometimes difficult	7	15
Totals	48	100

Analysis of Price Variations

The first step for an accurate price analysis is to gather reliable statistics on prices representative for the country over the period of time under consideration. Such a task is not always easy. It was not possible to find more than one or two producers who kept reliable records of their

sales and who were ready to reveal them for the purpose of this study. The most reliable record of prices received by producers was obtained from the Nablus Poultry Cooperative. But the figures which were obtained from this source were available only for the period after July 1, 1963, when this cooperative started its business.

Prices from marketing agencies were easier to collect, since most of them kept some sort of records of their business transactions. Retail prices were quoted from two poultry dealers, one in Nablus and the other in Amman. In each case two or more prices were taken for each month in 1963.

The only official body which was found to maintain a record of prices was the Department of Statistics. Retail prices of a wide range of consumer goods were regularly collected by this department and then published in the Bulletin of Monthly Prices. The records available in the Department of Statistics date back to 1958, and the average prices of January, February, and March of that year were taken as the base for computing the index of later prices. Prices are reported only for the markets of Amman, Irbid, Jerusalem, and Nablus.

When the prices collected by the Department of Statistics were compared with figures on actual sales quoted from books kept by some reliable poultry dealers, it was found that the two sets of prices, especially those of broilers,

disagreed considerably. For instance, it is observed in Chart 5 that the average annual price of chicken meat in Amman for the years 1958 through 1962, as reported by the Department of Statistics, has shown a rising trend. Such a trend in broiler prices is very far from what practically all producers, poultry dealers, and consumers reported. There is no doubt that broiler prices in Jordan, including Amman, have decreased considerably since 1958. So it sounds

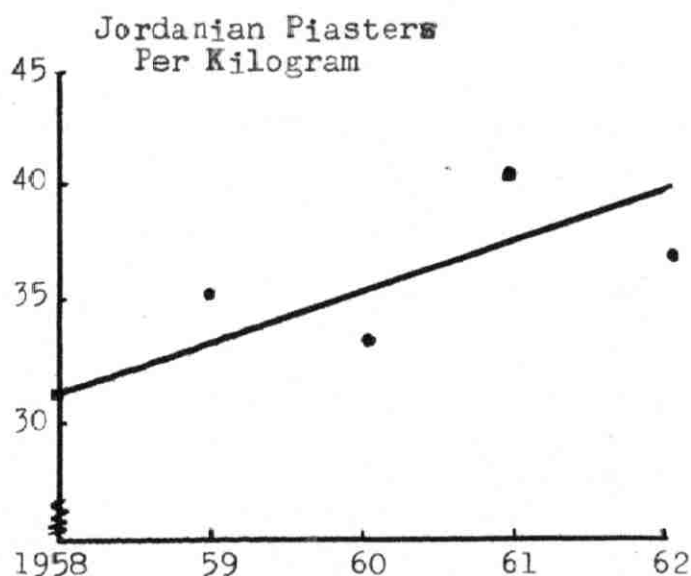


CHART 5

TREND OF BROILER PRICES IN THE AMMAN MARKET
1958 - 1962

Source: Department of Statistics, Statistical Year-book 1962 (Amman: Ministry of National Economy), p. 125.

unbelievable to talk about a rise in such prices. Moreover, an analysis of the monthly retail prices of broilers reported

by the same department has revealed no appreciable variations during the latter part of the summer, contrary to what was reported by every producer and marketing agency. All these apparent discrepancies have made the author prefer not to place reliance on the prices of broilers and eggs as reported by the Department of Statistics.

In the following pages, price variations of different kinds will be analyzed and evaluated on the basis of figures collected from certain producers and poultry dealers.

Variations in prices, as well in other kinds of economic data, are caused by a large number of factors influencing the supply and demand for the commodity under study. But generally, all variations in time series can be broadly classified into four distinct categories:

1. Secular trends.
2. Seasonal variations.
3. Cyclical fluctuations
4. Erratic or random fluctuations.

In this section we shall attempt to discuss each of these types as it relates to the prices of eggs and broilers in Jordan.

Secular Trends

Secular trend in economic data may be considered as a long term movement induced by forces making for the gradual rise or decline in a particular set of statistics. Such trends

show a gradual change and they are rarely subject to sudden and abrupt reversals in direction.

Although there is no reliable record of egg and broiler prices for a long enough period to allow drawing a representative trend, yet it is possible to give a rough picture which is more or less indicative of the actual situation.

Egg prices have been undergoing a fairly stable or probably slightly rising trend. There is no doubt that the effective demand for eggs has increased markedly over the past decade. The reasons for this increase are numerous, but they originate mainly from the rise in the standard of living and the improvement of dietary education of the consumer population. The rise in the per capita consumption of eggs was paralleled by a steady increase in domestic consumption of eggs from both Baladi farm flocks and from commercial farms, and by a substantial increase in imports. But there were also several times when the equilibrium between supply and demand was disturbed resulting in an off-the-trend rise in prices. This happened mostly in years when there were outbreaks of Newcastle disease which wiped out a large portion of the layer population, hence severely reducing production. A striking example was the year 1958 when the poultry population is reported to have dropped to three fourths of its estimated numbers for the previous year .

¹
Unpublished data obtained from Mr. Tahir Qalyoubi, Head, Division of Livestock Production, Ministry of Agriculture, Amman.

The future trend in egg prices is not likely to change in the short run. The demand for eggs will continue to increase, probably at a faster pace than domestic production². So the gap will have to be bridged by increased imports or by higher prices to stimulate increased production. In the long run, say after three or more years, commercial egg production may be expanded to such an extent that it satisfies consumer demand at a lower price level.

In broiler prices, the trend is quite different from that of eggs. Back in the early fifties, the retail price of live chickens was averaging about 40 Jordanian piasters per Kilogram. By 1958 the price level had decreased to approximately 36 piasters per Kilogram and consumption was greatly increased. During 1963 broiler prices averaged about 28 piasters per Kilogram, and consumption soared to the unprecedented number of 730,000 broilers. It is true that the demand for broilers has risen sharply since 1950 but it is also noticeable that production has expanded more than enough to maintain prices at their previous level. Moreover, with the advent of commercial broiler production producers were able to reduce their costs to a level where they were ready to sell at a substantially lower price and still make reasonable profits. For all these reasons, the trend in broiler prices has been steadily declining. A further decline

2

A thorough discussion of consumer demand will follow in next chapter.

is still anticipated in the face of expanding production. This will be possible only if producers manage to cut their costs of production to a normal level, because the costs of producing broilers in Jordan are still markedly higher than costs in Lebanon and United States. The inter-relationships of price and costs of production will be covered in a separate section later in this chapter.

Seasonal Variation

Seasonal variations in prices represent a recurring type of change which is correlated with the season of the year, or with certain known occasions. Variations of this kind are common in agriculture because practically all production processes follow a seasonal pattern which repeats itself in a more or less regular manner year after year. Most crops and fruit trees have one harvest season a year. Milk production undergoes a definite seasonal pattern. Egg lay also follows a seasonal pattern, rising to its peak in spring and declining to a minimum late in the fall.

Beside changes associated with the season of the year, there are variations which are due to specific causes and which keep recurring concurrently with their stimuli. Such variations are also considered seasonal in nature, although they may be independent from the change in seasons. Variations of this kind are common in Jordan, and they mostly coincide with religious feasts and occasions such as Bayram,

Christmas, Al-Adha, and Easter.

The first type of seasonal variation, i.e. the one which pertains to seasons of the year, is not of great importance in commercial broiler farming. Since with the improvements in brooding and housing practices, producers find little difficulty in raising broilers during all seasons of the year. An exception in this regard is Jericho area, where the temperature in summer rises so high that it decreases the efficiency of feed conversion and slows down growth. On the other hand, there is a marked seasonal trend in Baladi chicken production. Baby chicks of this "breed" are usually hatched under brooding hens in the spring, and they reach market size late in the summer or in the fall. But the volume of Baladi chicken output is too small to induce any marked seasonal variation in market supply and prices of broilers produced on large scale commercial poultry farms.

However, this type of seasonal variation is of great significance in egg production and prices. It was mentioned already that the largest portion of the egg supply in Jordan is produced by small Baladi farm flocks raised in farming villages. But egg production in these flocks follows a rigid seasonal pattern which is directly correlated with natural molting of the hens in the fall. Baladi layers start to molt as early as July and continue through December. In January the birds restore their normal balance and egg production rises.

By March, egg lay will be at its peak, where it stays through April. In May production starts to decrease until the birds go again into molting in July. This same production cycle is also common on commercial farms, though not with the same rigidity because of the flexibility of obtaining baby chicks from hatcheries to raise pullets for egg production. Furthermore, with scientific feeding and management layers on commercial egg farms continue laying for about a full twelve months after being placed in laying houses, with much less variation in the number of eggs laid each month.

Monthly prices of eggs were gathered from producers and poultry dealers in order to analyze the effect of seasonal pattern of production on egg prices. Chart 6 shows a 10 - days moving average of retail prices as reported by a poultry dealer in Nablus. It is clear from this chart that egg prices vary in a seasonal pattern in which they reach bottom in the spring and a peak in fall and early winter. A similar pattern was already observed in Chart 4 which was derived from estimates reported by producers. All this proves that egg prices are directly associated with production, and they both display the same seasonal pattern of change.

The other major type of seasonal variation, namely that which pertains to certain recurring occasions, is of peculiar significance to the broiler industry.

It was pointed out previously that producers considered

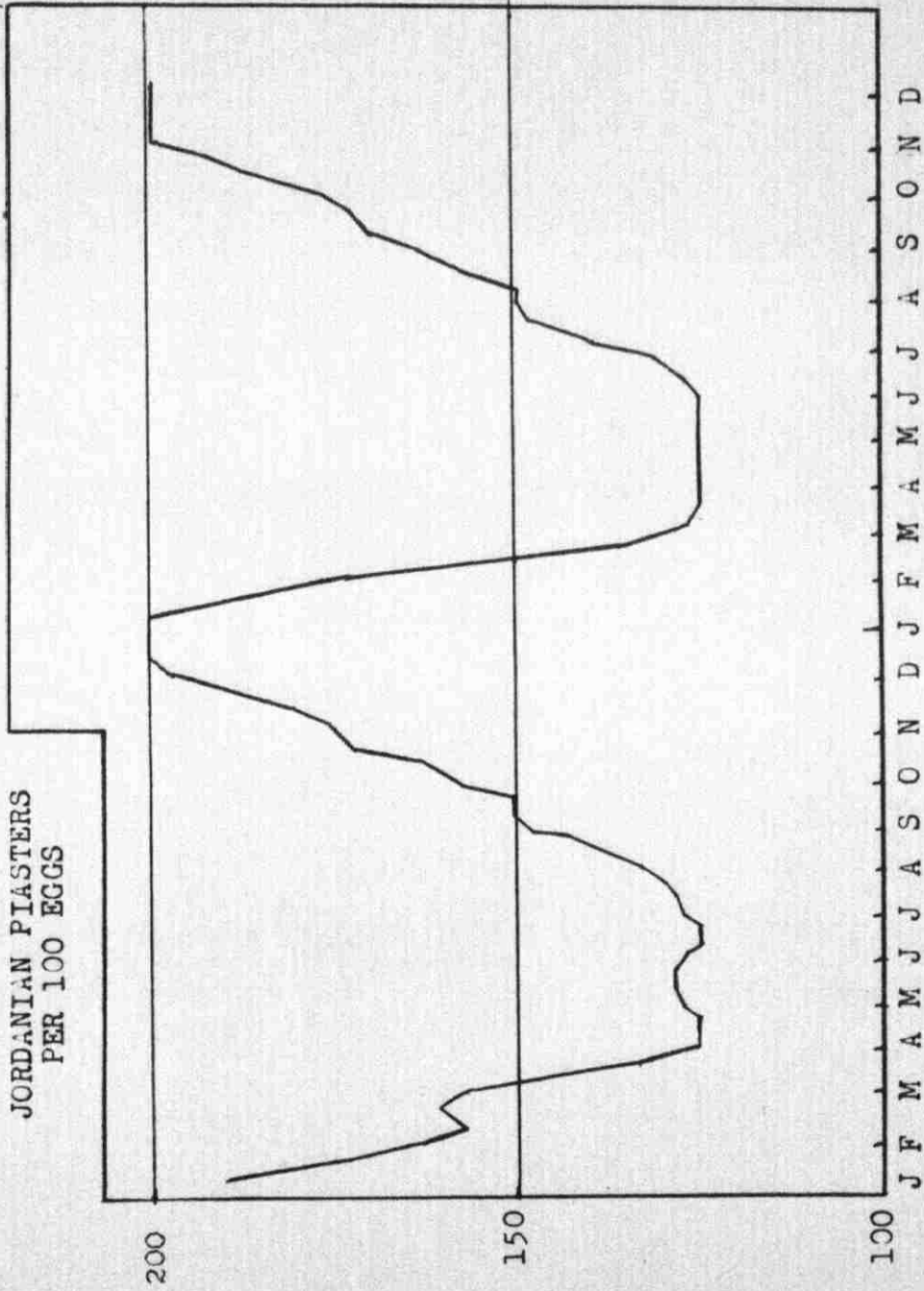


CHART 6
A TEN DAYS MOVING AVERAGE OF RETAIL EGG PRICES IN NAELUS
1961 - 1962

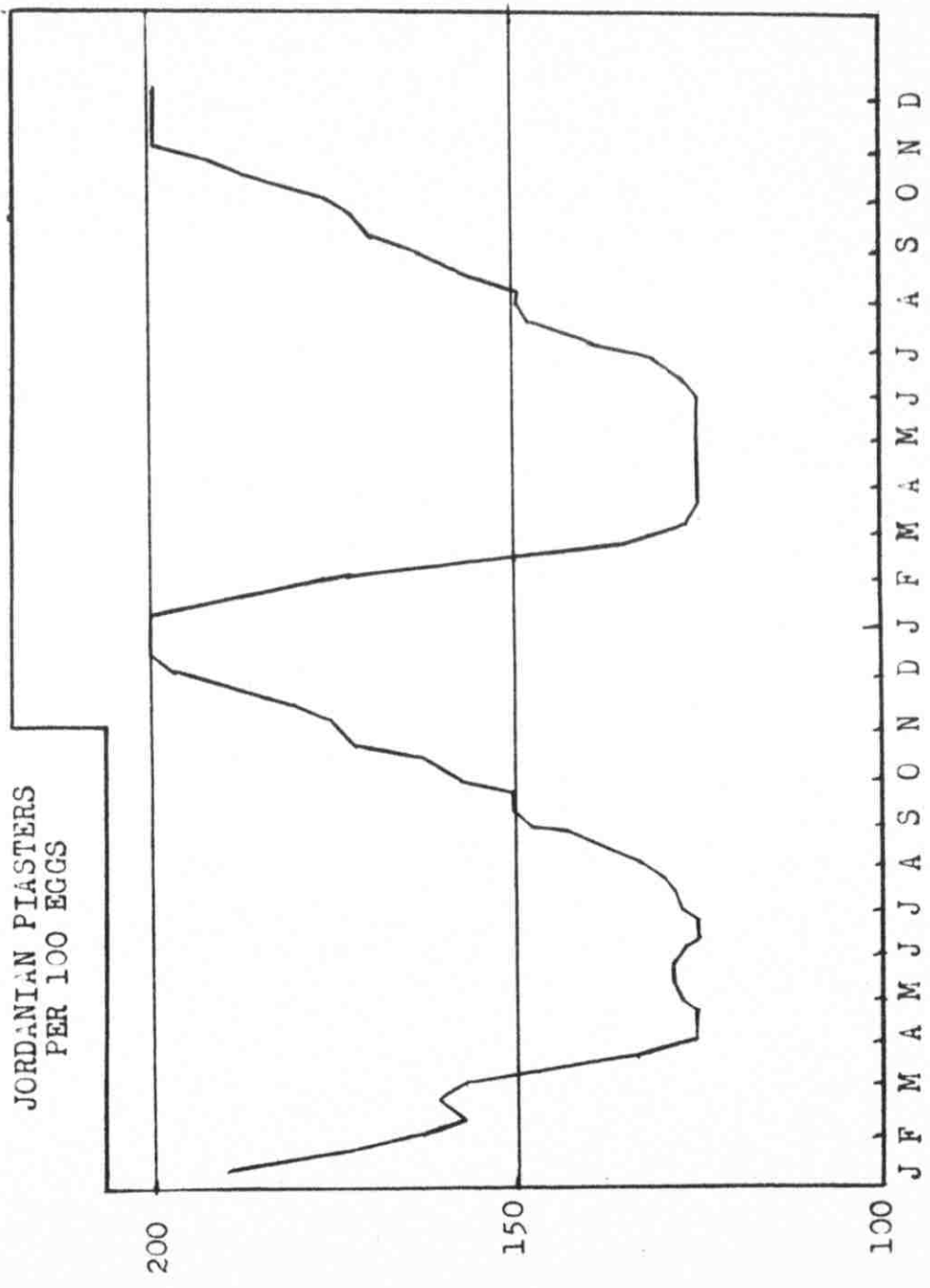


CHART 6
A TEN DAYS MOVING AVERAGE OF RETAIL EGG PRICES IN NABLUS
1961 - 1962

Jordanians returning home for the summer and large numbers of tourists arriving at certain times to be most important causes for seasonal variations in broiler prices. This was reflected clearly in Chart 3 which indicated a pronounced rise in broiler prices toward the end of June extending to early September. In order to study this phenomenon more closely, a complete record of monthly retail prices was obtained from a poultry dealer in Nablus for the years 1962 and 1963. In addition to this, a fairly accurate record of producer prices for the year 1963 was obtained from some producers in the same district. Chart 7 shows a graphical representation of both of these sets of prices. It is evident from this chart that there is a pronounced seasonal rise in June or July reaching its peak around mid August and then declining to a low point in October.

Another important seasonal rise in price starts in January and continues through May. In 1963 this rise coincided with the occurrence of the month of Ramadan (Jan. 24 - Feb. 23), Bayram (Feb. 24), Easter (April 14), and Al-Adha (May 3). All of these occasions had helped to sustain prices at a relatively high level. In that particular year all of the above mentioned occasions happened to occur within a short period of time, thus causing almost a continuous rise in retail prices over a period of more than two months. But when they occur away from each other, as it may happen in certain years, then every one of

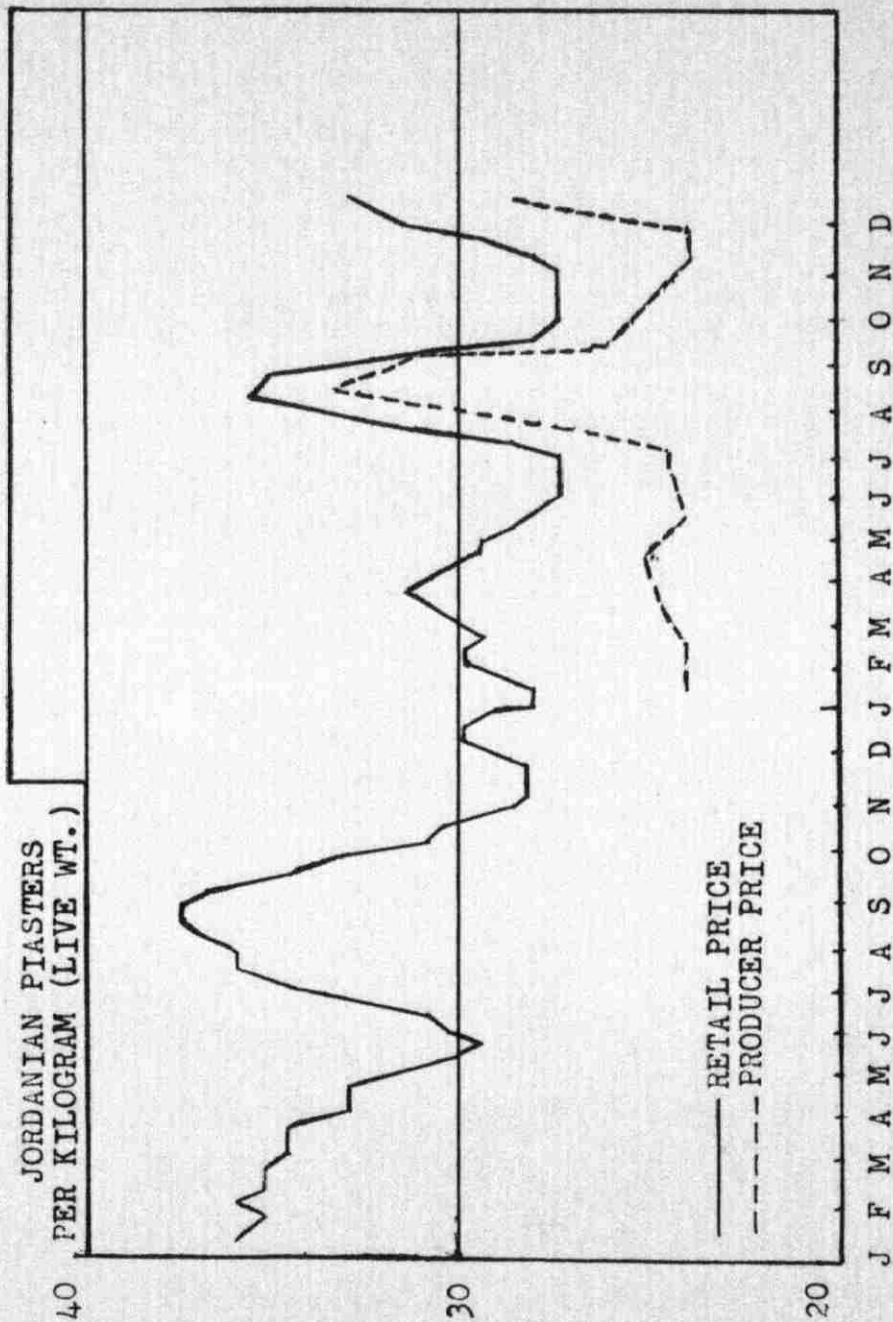


CHART 7
A TEN DAYS MOVING AVERAGE OF RETAIL PRICE OF BROILERS,
1962-1963, AND MONTHLY AVERAGE OF PRODUCER PRICE,
1963 - NAELUS DISTRICT

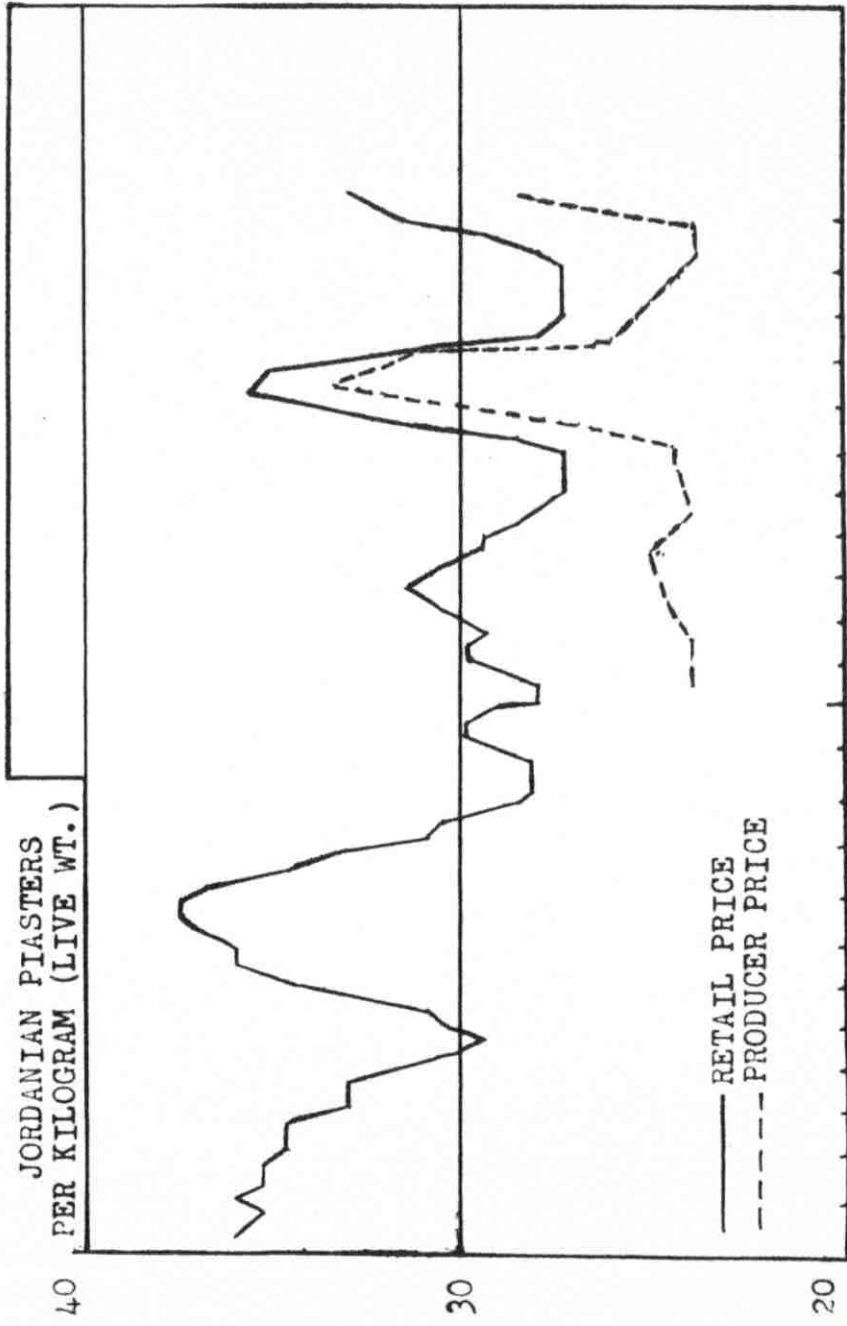


CHART 7
A TEN DAYS MOVING AVERAGE OF RETAIL PRICE OF BROILERS,
1962-1963, AND MONTHLY AVERAGE OF PRODUCER PRICE,
1963 - NAELUS DISTRICT

them is likely to induce a seasonal rise in the price extending over a short period of time.

The third important seasonal rise in broiler prices coincides with Christmas. This rise starts sharply in late December and extends through early January, whereafter market price starts to decline. The Christmas rise of 1963 was markedly higher than that of 1962. This was due to the unusually large number of tourists visiting Jordan during that particular Christmas on occasion of the Pope's visit to the holly lands.

Producers' prices, as indicated in Chart 5, follow a pattern similar to that described for retail prices. Producers in Jordan are usually well informed about anticipated rises in prices. In fact all seasonal variations discussed above were reported by most producers. Moreover, competition in the broiler market is such that producers sell at the prevailing market price.

The response of broiler prices to seasonal variations is not uniform in all parts of the country. Chart 8 shows that the summer boom is common in all of the three major production areas, Nablus, Amman, and Jericho. But Nablus market seems to be more affected than the others because of receiving more returnees than other districts. In Jericho area, prices in winter are significantly higher than those in the other two districts. This is because Jericho is Jordan's leading winter

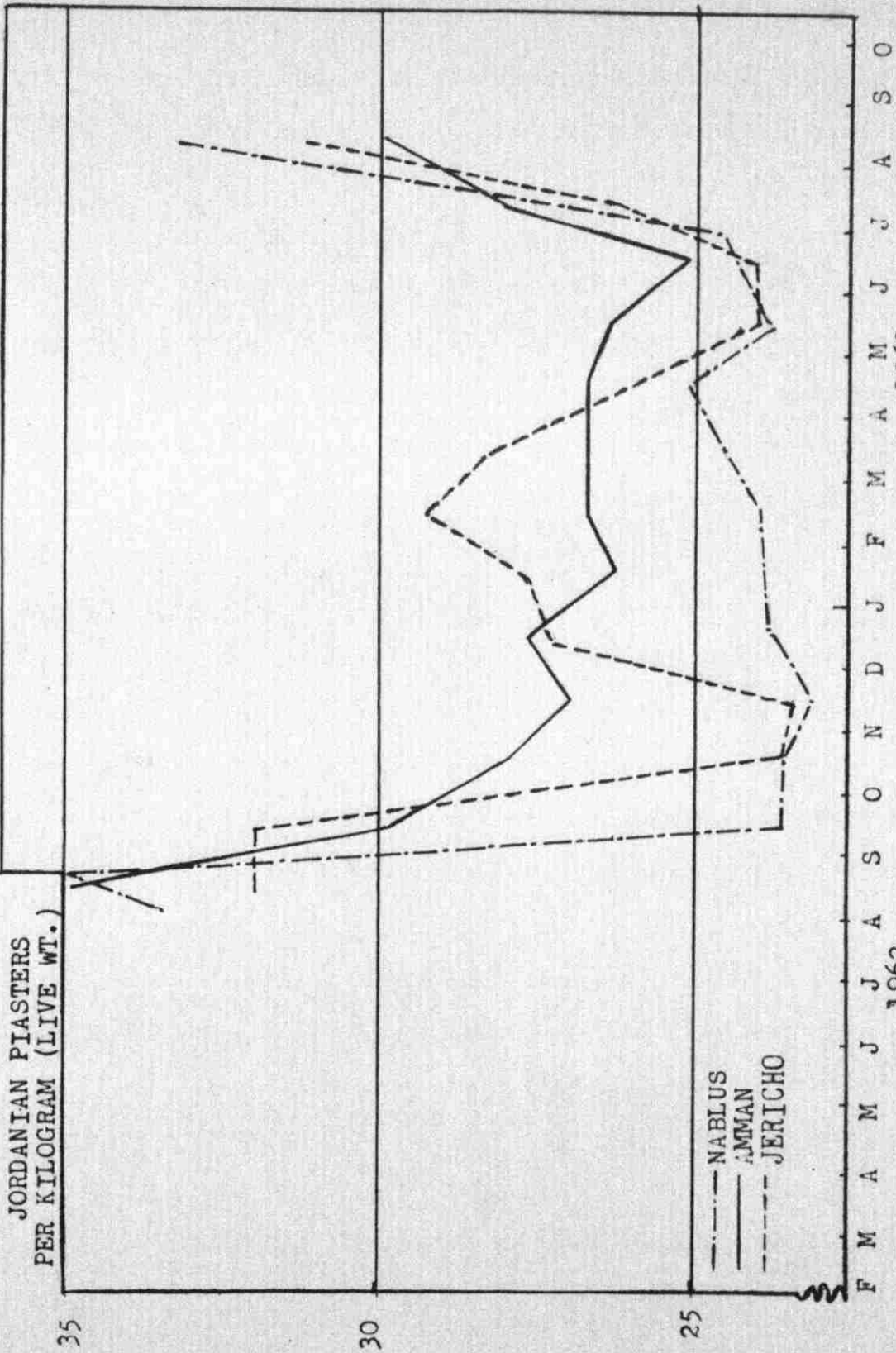


CHART 8
MONTHLY AVERAGE OF BROILER PRICES RECEIVED BY PRODUCERS IN NABLUS,
JERICHO, AND AMMAN DISTRICTS

JORDANIAN PIASTERS
PER KILOGRAM (LIVE WT.)

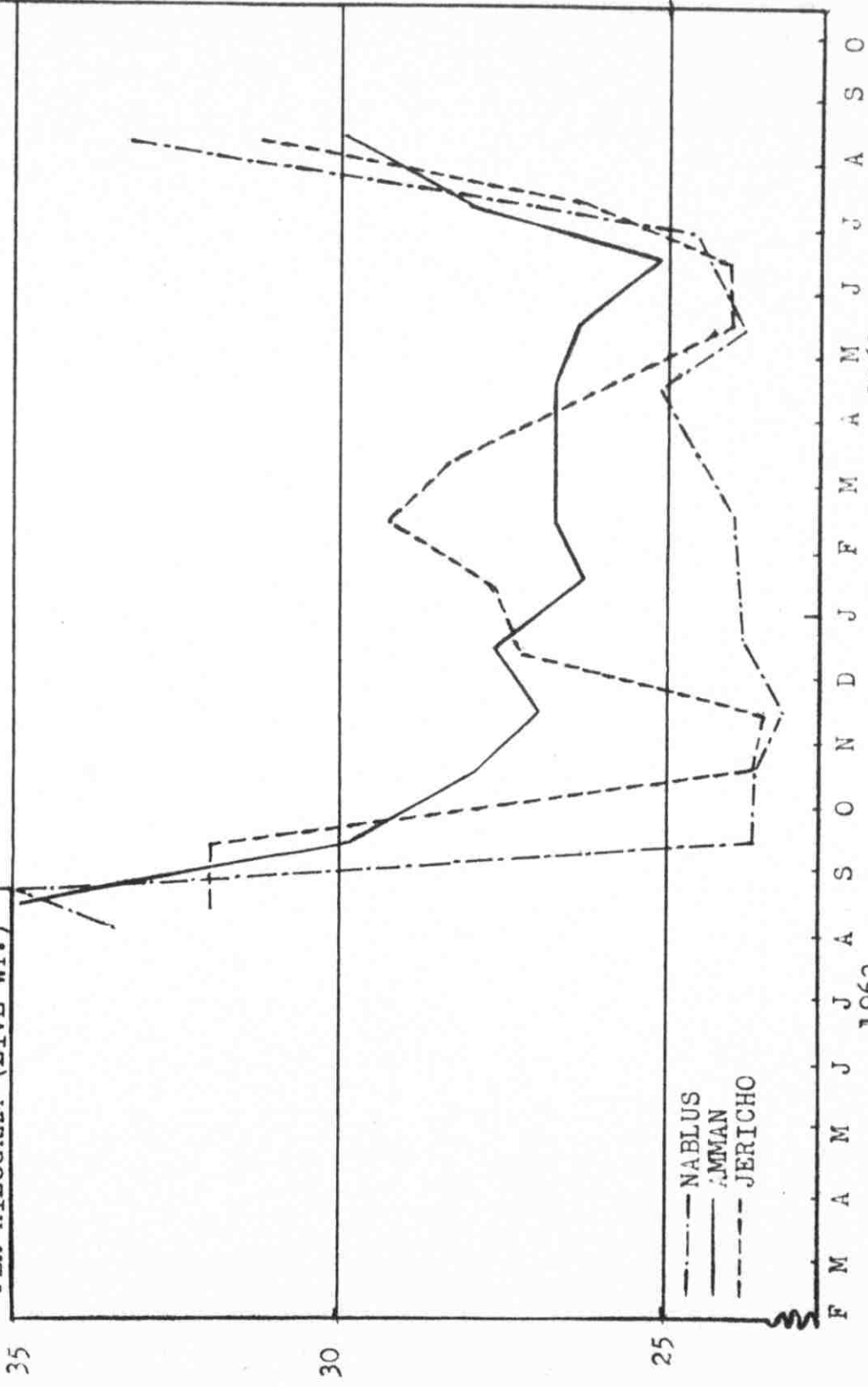


CHART 8
MONTHLY AVERAGE OF BROILER PRICES RECEIVED BY PRODUCERS IN NABLUS,
JERICHO, AND AMMAN DISTRICTS

resort which receives a large number of Jordanians through out the winter months. Prices in Amman, though equally affected by the summer boom, yet they are generally more stable for the rest of the year. Foreigners' consumption of broilers in Amman tends to lessen the extent of variations brought about by any one factor. With respect to the egg industry, "occasional" seasonal variations do not seem to import any noticeable variation in egg prices. Moreover, the variations in supply between spring and fall is so great that this supply factor outweighs variations in demand.

Cyclic Variations

Cyclic variations in agriculture, as in other sectors of economy, represent a recurring type of change which, unlike the previous type, does not have a fixed period. Examples of cyclic variation in agriculture are numerous. They are chiefly determined by weather and biological considerations.

A general theory, known as the Cobweb Theorem, has been presented to explain the cyclic sequence of the interaction between supply, demand, and prices of agricultural commodities. The theoretical version of this theory attempts to explain why in the case of some commodities the price does not settle at the point of equilibrium but fluctuates around it more or less periodically. According to this theory, this kind of behavior is due to the lag in farmers' response to price

changes and to the length of the span it takes to complete the production process of a certain product.

Cyclic variations are very common in agriculture, because practically all agricultural products require time between starting production and marketing of produce. This makes it impossible for producers to respond immediately to price changes in adjusting the quantity produced. The length of the time span required before production can be decreased or increased depends largely on the nature of the product itself. It may vary from less than two months in the case of broilers to more than six or seven years in livestock production.

No cyclical variations were detected in broiler production and prices in Jordan. This is mainly due to the rapid expansion of the industry. New producers are constantly replacing those dropping out due to financial losses. Consumption is increasing so that supply and demand have not yet stabilized on a long term secular trend based on population growth.

Cyclic variations were not detected in egg prices either. The growing demand for eggs from commercial poultry farms has kept pace with expansion of production so that prices have not declined below the cost of production to cause any deliberate reduction in market supply.

Random Variations

The operation of a business is influenced by a large number of factors many of which can not be identified and assessed before their occurrence. Factors of this type induce short-term variations in time series known as random or erratic fluctuations.

Examples of random variations are very common in agriculture. Insect and disease damage are common causes of unpredictable losses in many field and fruit crops which reduce the market supply. Severe weather fluctuations are also sometimes important. Amount and distribution of rainfall have great bearing on the volume of livestock production in Middle East countries where grazing is critically short. In poultry, there are several diseases which hit in an erratic manner causing substantial losses in the production of eggs and broilers. Temperatures higher than 90^o F, which are common in this part of the world, are known to curtail egg production.

There is another factor which is specific to broilers and which was found to cause erratic variation in broiler production, and that is irregular transporting of baby chicks from hatcheries to Jordan. Many producers and baby chick dealers reported that it was not possible to import all the chicks they needed in the summer months of 1963 because some aircraft companies had refused to accept baby chicks as cargo

during that period. When the matter was investigated further, it was found that most of the airline companies in service between Beirut and Jordan had stopped accepting chicks on June 12, 1963 and resumed shipments on September 20 of the same year. The reasons for this action, it was reported by airline officials, was that dead chicks on the aircraft produced an objectionable odor which infiltrated from the cargo cell to the passengers' compartment, causing them great discomfort. This action on the part of airline companies had caused a decreased supply in the broiler output at a time when the market for broilers was most active.

Causes of Price Variations

In this section, an analysis will be presented of the different factors which bear on price variations of eggs and broilers in Jordan. The points which will be discussed have all been mentioned by producers in one way or another. But we shall here try to evaluate the importance of each factor in as far as it affects prices of eggs and broilers at various times of the year.

1. Population Movements

The increase or decrease in the size of the consuming population is a factor which causes a shift in the demand curves of practically all commodities. Broadly speaking, there is always a gradual and continuous shift in the demand curves of consumer goods due to the natural increase

in population. In Jordan, the rate of natural increase of population is estimated at 3 percent annually, which is one of the highest in the world. However, natural increase in population does not cause pronounced fluctuations in the demand for consumer goods.

In Jordan, there are two types of population movements that are known to cause significant fluctuations in the markets for farm products. These are Jordanian summer returnees and tourists. Following is an analysis of both of these factors and an evaluation of their significance on the prices of eggs and broilers.

a. Jordanian Summer Returnees

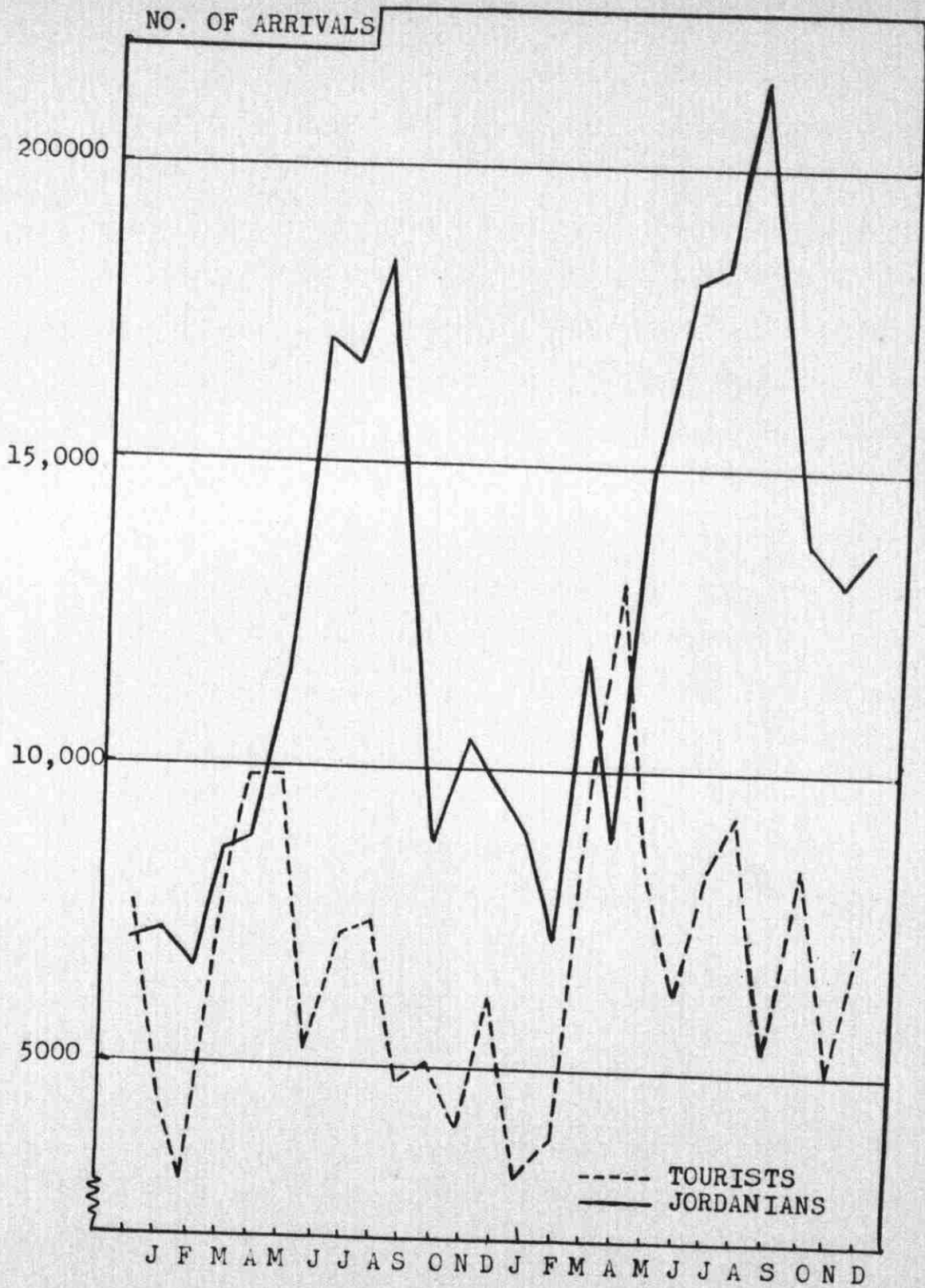
After the political and economic crash which followed the palestinian war of 1948, a large number of Palestinians (who then became Jordanians) left Jordan seeking jobs in the neighboring Arab countries. Most of these immigrants went to Saudi Arabia and to Kuwait, which was then just evolving as an oil producing country. The immigration rate accelerated in the middle fifties to the extent that it caused material improvement in Jordan's economy and a great rise in the standard of living. In 1961, it was estimated that there were 61,972 Jordanians staying outside Jordan of which 31,287 were in Kuwait and 4,231 in Saudi Arabia³.

³ Department of Statistics, Statistical Year book 1961 (Amman: Ministry of National Economy, n.d.), P. 17.

The vast majority of the Jordanians working abroad, especially those working in Saudi Arabia, Kuwait, and countries of the Persian Gulf, return to Jordan in the summer to spend their vacations at home and escape the hot weather in their host countries. Chart 9 shows graphically by months the number of Jordanian returnees for the years 1961 and 1962. It is clear from this chart that there is a sharp rise in the number of arrivals during the months of June, July, and August. The rise starts first in June with Jordanians coming home from Saudi Arabia, and then it soars in July and August with Jordanians coming from Kuwait. Early in September, the tide is reversed and most immigrants begin to leave the country, until practically all of them leave by the end of September. This cycle repeats itself every year but with varying intensity, depending mainly on political considerations,

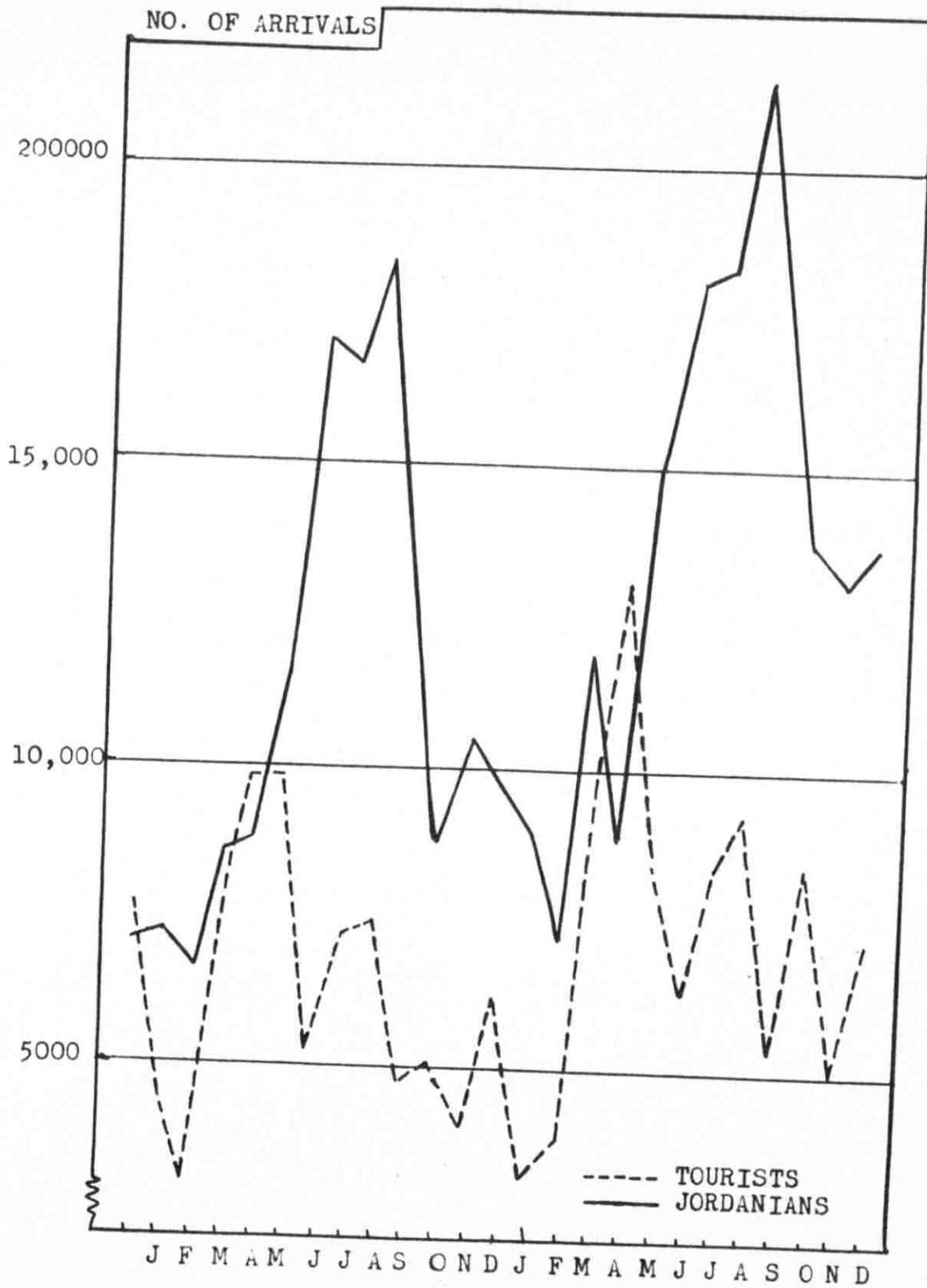
The effect of this annual population movement on the prices of poultry products as well all other consumer goods is tremendous. It gives a momentum to the whole economy which creates a very active market for most goods and services. This is mainly due to the large increase in the disposable income of consumers as well as the increase in consumers themselves.

The effect of this condition on the prices of eggs and broilers is not similar, since broiler prices are far



CHARTS 9

POPULATION MOVEMENTS IN JORDAN 1961 - 1962



CHARTS 9

POPULATION MOVEMENTS IN JORDAN 1961 - 1962

more sensitive than are egg prices. This difference was made clear in Charts 3, 7, and 8, which all indicated a summer rise in the prices of broilers, and Charts 4 and 6 which showed a slow rise in the prices of eggs in June and July that was largely due to a smaller supply rather than to an increase in demand.

The difference between the responsiveness of eggs' and broilers' prices to the influx of Jordanian summer returnees stems from income elasticities of their demands. Discussion of this point will be presented in Chapter VI.

The responsiveness of broiler prices in the different districts to returning Jordanian immigrants is not the same all through the country. It is observed that there are large differences between different districts as to the number of citizens working abroad. Nablus District alone accounts for 48 percent of all Jordanian immigrants working abroad.⁴

Prices received by broiler producers in Amman, Nablus, and Jericho were illustrated in Chart 5. It is evident from this chart that prices in Amman and Nablus Districts have shown an equal rise in the summers of 1962 and 1963, whereas in Jericho there is also a similar rise, but not as high as in the other two districts.

⁴ Ibid., p. 16.

This is partly due to the smaller number of returning immigrants and partly to the hot weather which makes people leave for other districts. Broiler prices in Jerusalem during the summer months also undergo a rise which may be even higher than that of Nablus and Amman because of the combined effects of Jordanian returnees and the influx of foreign tourists. The major source of broilers for Jerusalem market during the summer is Nablus District. So dealers in Jerusalem have to incur transportation expenses for a distance of more than 80 Kilometers. For this reason, the retail prices of broilers are normally 2 - 4 piasters per Kilogram higher in Jerusalem than in Nablus.

b. Tourism

Tourism constitutes an increasingly important sector in Jordan's economy. Tourists' expenditure in Jordan during the year 1961 was estimated at J.D. 3 million.⁵ A large number of tourists, mostly westerners, visit Jordan every year to see some of the most esteemed historical and religious sites in the world. The flow of tourists into Jordan follows a seasonal pattern illustrated in Chart 9. Easter is the occasion which draws the largest number of western tourists. Summer is another favorite season for tourists, especially American

⁵ Jordan Development Board, op. cit., p. 161.

and British who travel during their vacations from colleges and universities. Christmas is also an important religious occasion which draws many tourists but in most years it is less important than the other two occasions.

Tourists, in a way similar to summer Jordanian returnees, stimulate the market for the many goods and services they use. With respect to poultry, tourists cause a noticeable rise in the demand and prices of broilers. Chart 7 indicated a marked rise in the retail and producer prices of broilers concurrent with Easter and Christmas.

The effect of tourists on the prices of broilers varies from one district to another. Generally broiler prices in Jerusalem are most sensitive to the flow of tourists. But since most of the broilers for this district come from Nablus and Jericho areas, then both of these are indirectly affected by the rise in prices in Jerusalem.

Egg prices do not show a marked response to incoming tourists. The volume of eggs consumed by tourists is too small a fraction of total domestic consumption to cause a detectable rise in the demand and prices of eggs in the country.

2. Irregular Chick Placement

One of the important factors which bear on the prices of broilers is the number of broiler chicks placed on broiler farms through out the country. Most producers felt that there was wide fluctuation in the number of baby chicks placed from month to month, resulting later in corresponding variations in the supply and prices of broilers.

Inorder to have a more precise picture of this factor, it was found necessary to procure accurate figures on the imports of baby chicks. A complete record of baby chick imports was compiled from customs departments in the Amman and Jerusalem Airports, which were the only chick receiving terminals in the country. Chart 10 shows the combined weekly imports through both airports for the year 1963. Looking through this chart, it is observed that weekly imports are below average for all the period after mid January through the fourth week of March. In late March imports started to rise, and remained generally above average until mid June. Imports were below average for the period between mid June and late August. This may have been due largely to the restrictions imposed by airline companies rather than to producers' own wishes. In fact, there is good reason to believe that producers would have greatly increased their chick placements during the fore part of this period, had there been no restrictions on air shipping of

HICKS PER WEEK
(THOUSANDS)

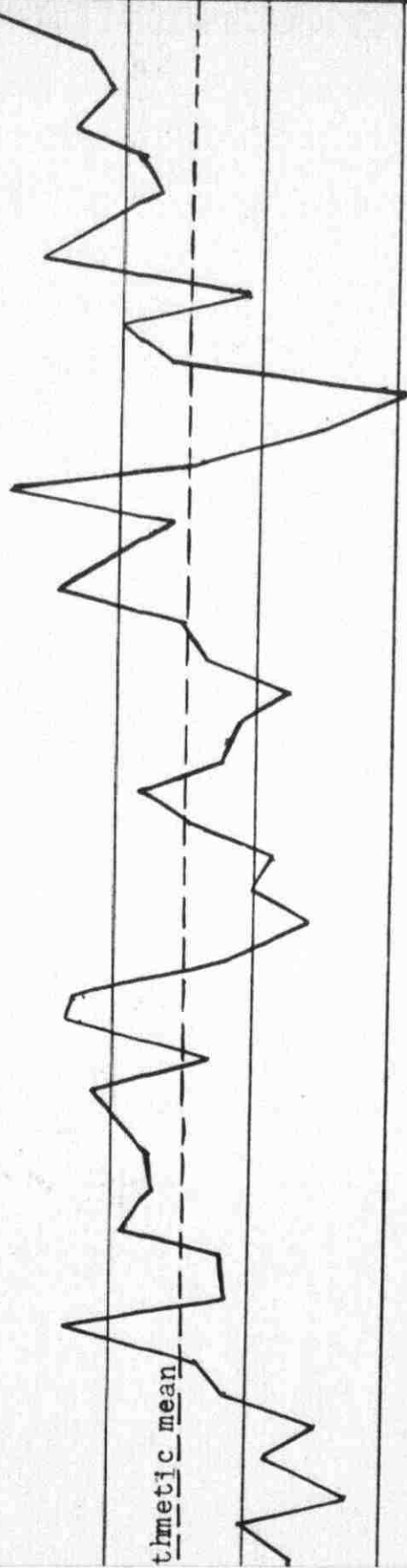


CHART 10
WEEKLY IMPORTS OF BABY CHICKS INTO JORDAN
(1963)

HICKS PER WEEK
(THOUSANDS)

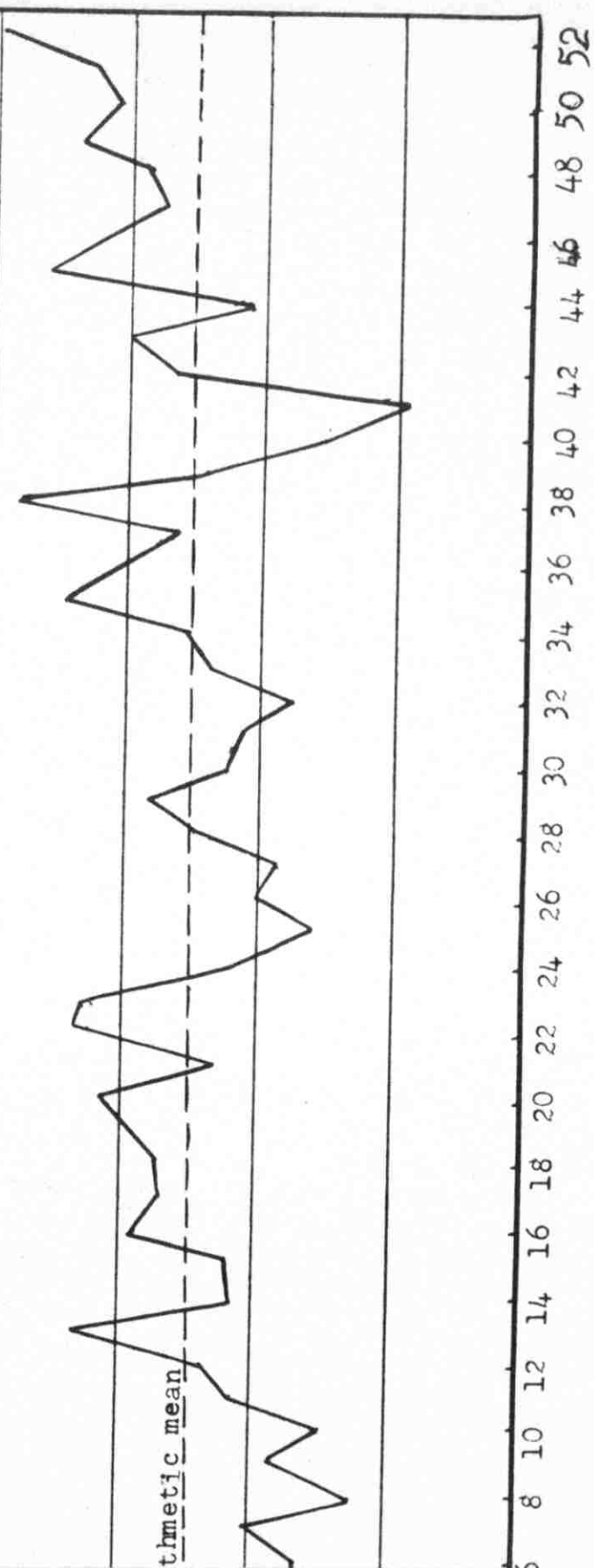


CHART 10
WEEKLY IMPORTS OF BABY CHICKS INTO JORDAN
(1963)

baby chicks. Late in August, imports rose above average for a short period of time and then dropped severely in the last week of September. During the fall months imports were a little above average, in anticipation of higher demand in late December.

On the whole it seems that imports of baby chicks were not as irregular as they were originally thought to be. This was further substantiated by the fact that 57 percent of producers who were interviewed, reported that their broiler output was fairly stable, and 43 percent said it fluctuated, with summer as the high production season. Such purposeful fluctuation tends to make it still easier to bring the supply and demand to an equilibrium. Therefore, it is felt that variations in imports of baby chicks have not had a strong causal influence on changes in broiler prices, except when external factors interfere, such as the air company embargo on chick shipments during the heat of the summer.

3. Diseases

Disease hazards have always been a serious threat to poultry farms in Jordan. Until recent years, producers stood helpless in the face of the many disease outbreaks they used to encounter on their farms. Among the most common diseases in Jordan are Newcastle, coccidiosis, chronic respiratory disease complex, fowlpox, choryza, and internal parasites.

Newcastle is the most damaging disease to poultry in Jordan. The strains prevailing there are highly virulent and almost always present in the country. The damage resulting from Newcastle may be one or more of the following:

1. High mortality, which approaches 100 percent in young chickens.
2. Reduced egg production by layers and malformation of eggs.
3. Poor growth and reduction in feed efficiency in broilers and replacement pullets.

It is then clear that a Newcastle outbreak will severely reduce the supplies of both broilers and eggs. But its effect on broilers does not cause an appreciable rise in broiler prices for a long period because of the relatively short time it takes to start again with a new flock. But with layers the situation is completely different. When an outbreak of Newcastle erupts in the country, it may wipe out a relatively large proportion of all layers and impair normal growth and production of the rest. This automatically reflects on the conditions of the egg market. With a reduced egg supply, prices of eggs may soar to a level higher than the seasonal trend depicted already. This higher level of prices may last for a year or more because it takes about six months before replacements come into production. Thus, it may be concluded that outbreaks of Newcastle disease may cause medium term variations in egg prices extending from six months

to one year, and short term variations in broiler prices rarely exceeding three months.

There are a number of other diseases that cause mortality and lowered egg production in poultry. But with the exception of severe outbreaks of fowl pox and bronchitis, none of them is so serious as to cause a large enough reduction in the market supply to lead to higher prices.

4. Hot Climate

High temperature is detrimental to normal egg production and growth. At an atmospheric temperature of 90^o F, egg production is lowered and growth is retarded, At temperatures higher than 100^o F, egg production is almost completely stopped and birds begin to die of heat prostration.

Jordan has wide regional variations in its climate. In the Jordan Valley, which is around 1200 feet below sea level, temperature in the summer is too high to permit commercial egg production. In some other parts of the country, such as Nablus and Amman Districts, temperature in the summer ranges between 80 to 90^o F during day time but at times it may go beyond 100^o F. This is most likely in July and August when there are frequent hot spells which may continue for several days. These spells are characterized by both high day and night temperature. Such weather has a drastic influence on egg production. During the periods of heat spells, egg production is suddenly reduced to a very

low level which lasts for several days after the hot spell is over. The summer of 1963 was a striking example. Egg production on commercial farms during August and early September of that year was reported to average around 35 percent due to unusually hot weather.

The effect of the reduced rate of lay on egg prices is usually prompt because of the direct connection between production and market supply. Broiler production, on the other hand, is less sensitive to adverse weather changes. At higher temperatures growth is retarded and feed efficiency is reduced but the effect is not so severe as to affect the market supply of broilers.

5. Imports

It has already been mentioned that egg imports into Jordan have been increasing rapidly and steadily for the past several years, until they exceeded nine million eggs in 1963. Many producers were generally of the opinion that egg imports depressed the prices of locally produced eggs. Poultry dealers were even more conscious of this relation and many of them complained bitterly of the Government permitting free egg imports.

However, the analysis of egg prices presented in section II of this chapter, revealed that the above argument had little evidence to support it. Egg imports in 1963 amounted to about 12 percent of total domestic consumption

for that year, and the mean price of eggs in the same year was 1.58 Jordanian piaster per egg (which is equivalent to 13.6 Lebanese piasters) This means that egg prices in Jordan are still at a level higher than what they are in countries with a more developed poultry industry, such as Lebanon. The difference is due to higher costs of production in Jordan, and to the short market supply relative to the effective demand. Therefore, it is rather absurd to ask for protection of local production when the price that consumers pay is higher than in neighbouring countries. What the Government might do for the benefit of consumers and producers is to promote local production by the extension of loans and technical advise with an effort to reduce costs of production to a normal level. If producers become conditioned to high prices and have no stimulus to reduce their high cost of production, this would ultimately weaken their competitive position against other exporting countries. A reasonable form of protection for the local producers would be the requirement that all eggs imported bear the word "Imported" or the name of the country of origin. Consumers can then identify Jordanian eggs which are preferred because they are fresher.

As to broiler prices, they are not affected by imports of dressed broilers. In the first place, imports constitute a very small fraction of the total supply. Second, consumers

in general do have an unfavorable attitude towards dressed broilers, and more so towards imported frozen chickens.

The Relation Between Prices and Costs

Total profits of any producer depend on both, his volume of sales and the margin between his costs and selling prices. Therefore, the relation between costs of production and the price of the good produced is very important in determining the profitability of a business enterprise. According to Shepherd:

"Basically, this relation is simple. It is the same in agriculture as in other lines. The price must cover the cost of production, or to look at it the other way around, the cost of production **must** be lower than the price; otherwise the producer sooner or later will run out of money and quit producing"⁶.

In most branches of business activity, costs serve as a basis for computing selling prices. Businessmen determine their costs, add a margin of profit, and set their prices accordingly. But farmers seem to operate under opposite conditions. The trend for most agricultural commodities has been recently towards a narrower margin between the cost of production and the sale price at the farm gate. Producers can maintain their level of income only by cutting their costs and enlarging their volume of business.

6

Geoffrey S. Shepherd, Agricultural Price Analysis (Ames: The Iowa State College Press, 1963), P. 173.

Reducing the cost of production is a goal to which every producer aspires to in order to increase his profits. But in most cases there is always a limit set by various factors and beyond which any further reduction in costs is slowed down to a minimum. Expanding volume of business seems to offer a more flexible means for maintaining profits in the face of declining prices, provided that offering a larger volume of product does not lower the prices proportionally or more than proportionally.

The cost-price relationships of eggs and broilers in Jordan until recently remained quite favorable for poultry producers. The costs of producing broilers were high compared to more advanced countries, but prices of the finished product were so high that many producers could make a living even with relatively small operation. However, the trend of broiler prices for the last few years has declined to a point where many small producers have withdrawn from broiler farming, because these producers could not manage to cut their costs comparably, and were unable to expand their volume to maintain a living income at lower prices. There lies the challenge for most broiler producers. The price level will decline until it reaches to a level comparable to prices prevailing in foreign markets, or the average cost of production for the volume that consumers will buy at this price. Unless broiler producers in Jordan manage to cut their costs still further and expand

their individual volumes of operation appreciably they soon will be faced with a difficult situation regarding the cost-selling price relationship.

As for egg, the situation is different. Costs of production for Baladi farm flocks are negligible, whereas on commercial farms they are high. On the other hand, the price of eggs, whether Baladi or commercial, is high enough to let producers make profits, inspite of their high costs. But this situation is not expected to continue for long. Prices will eventually be affected by imported low priced eggs until they decline to a level closely correlated with market price in other foreign competing markets, unless the Government interferences and enforces protective regulations. The subjects of price trends and variations were discussed earlier in this chapter. In the remaining part of this section we shall discuss costs of producing eggs and broilers in Jordan as observed by the writer during the field work of this study which was conducted during the summer of 1963.

Costs of Producing Broilers and Eggs.

Costs of production consist of variable and fixed costs. Variable costs include such items as baby chicks, feed, labor, fuel, electricity, litter, medicine, and vaccines. While fixed costs cover depreciation and insurance charges on buildings and equipment, interest on the investment in the poultry farm, and repairs to buildings and production equipment. The assessment of fixed production costs in Jordan will be based

on the analysis made by Ward and Fuleihan for Lebanese poultry farms in 1960-61. In this study fixed costs amounted only to 5 percent of net total costs, while the costs of baby chicks and feed amounted to 81 percent of the net total⁷. In our rough estimate for Jordan we shall consider all costs to be the same as for Lebanon, except for chicks and feed. This assumption does not lead to a gross deviation from the actual costs in Jordan because of the small proportion of fixed costs, and because the corresponding costs in Jordan apparently are not very far from those in Lebanon.

The cost of baby chicks in Jordan varies from one strain to another but on the average it is around 8 piasters per chick (equivalent to 69 Lebanese piasters). The cost of broiler feed also is variable but most producers use a locally produced ready mixed feed which costs them about 5.1 piasters per Kilogram (equivalent to 44 Lebanese piasters). A feed conversion ratio of 2.4:1 is about average on most commercial broiler farms in Jordan during 1963 where the birds usually are marketed at around seven weeks of age. Therefore, the total costs of producing a live broiler of one kilogram in weight will be approximately as follows:

⁷ Ward and Fuleihan, op. cit., pp. 44-45.

Baby chick	J. Pst.	8.0
Feed (2.4 Kg 5 pst.)		12.2
All other expenses		4.5
		<hr/>
Total		24.7 (equivalent to L.Pst. 212.4)

This estimate is much higher than the corresponding estimates in countries with more advanced poultry farming. In Lebanon, the costs per Kilograms of live broiler weight was computed at L.Pst. 205.25 in 1961 and 163 in 1963, in Holland L.Pst. 180.4 (1959), in Denmark L.Pst. 177.6 (1959), and in the United States L.Pst. 119.47 (1961)⁸. The major sources of the higher costs in Jordan are the high cost of baby chicks and feed, and the lower efficiency of labor.

The costs of producing eggs are more difficult to approximate. Again we shall base the estimate for Jordanian farms on the study conducted by Ward and Fuleihan for Lebanon during 1960-1961. The main items which might account for a significant difference between the two estimates are the cost of feed and the number of eggs laid per layer per year. Ward and Fuleihan found that egg production on Lebanese commercial layer farms of a size in the range of 500 to 1000 layers averaged 192.2 eggs per hen per year. Feed price was estimated at L. Pst. 34.1 per Kilogram. In Jordan, layer feed costs J.Pst. 4.0 per

⁸

Ward and Fuleihan, op.cit., pp. 90-94.

Kilogram (L.Pst. 34.4). So total feed cost may be assumed to be about the same for Jordan and Lebanon. But egg production is extremely variable due to wide variations in management practices. In Chapter II, egg production on Jordanian commercial farms was assumed to be 160 eggs per hen per year. On this basis the cost of producing an egg will be J.Pst. 1.56 (L.Pst. 13.0). While for a layer producing 200 eggs per year the cost of an egg will be reduced to around J.Pst. 1.24 (L.Pst. 10.7). Moreover, the size of the flock has a direct bearing on the net cost of production, as has been demonstrated in Ward and Fuleihan's study.

So it is very difficult to compute one figure as representative of costs on Jordanian layer farms. But a range of J.Pst. 1.3-1.5 probably covers most commercial layer farms in the size group of 500-1000 layers.

Again, comparing the cost of egg production approximated for Jordan with those in competitive countries, one finds the cost in Jordan is quite high. For instance, the corresponding cost in Lebanon amounted to L.Pst. 10.3 (1961), in California (U.S.) L.Pst. 9.35 (1961), and in Arkansas (U.S.) L.Pst. 8.3 (1957)⁹. The main reason for the lower cost in these countries is the higher productivity of layers and the generally lower cost of feed.

⁹

Ward and Fuleihan, op.cit., pp. 80-88.

CHAPTER V

CONSUMER SURVEY

The previous two chapters covered a general description of the basic characteristics of the market for eggs and broilers in Jordan. But a marketing study of the poultry situation in Jordan would be incomplete if it overlooked consumers, for whom the products were produced. It is generally believed that fundamental to all marketing is the basic premise that it is the viewpoint of consumers regarding what he buys which is important, rather than ideas of the producers of the products. It is for this reason that this survey of consumers attitudes towards poultry was conducted.

The primary objectives of this part of the study were the following:

1. To determine consumers' attitudes towards eggs and chickens in general, and the reasons why people like or dislike them.
2. To determine any consumer preferences for Baladi eggs and chickens or for those produced on commercial farms.
3. To determine the reasons why people do not consume more eggs and chickens.

The consumers' survey consisted of two main parts, one dealing with Jordanians and the other concerned with foreigners living in Jordan. Both parts of the survey were conducted during the summer and fall months of 1963. The opinions and preferences of these two groups of consumers will be discussed separately in this chapter.

Consumer Survey

(Jordanians)

Methodology

A detailed consumer questionnaire was prepared and distributed in various parts of the country by a variety of means. By the end of the survey there were more than 600 copies distributed through out the country, and 365 of them were restored.

The sampling procedure followed in this survey was based primarily on the limited objective of obtaining information regarding the preferences of actual and potential consumers of eggs and broilers in Jordan. This made it unnecessary to take a sample which would be representative of the entire population of Jordan. The Bedouins, who are not (and will not be for several years) an important element in the market for poultry products were omitted for this very reason. Consequently, the consumers sampled in this survey were above average in income and education.

Such a method of sampling deviates from the accepted procedures used in consumer surveys covering a whole country. In such surveys, the sample is expected to be adequately representative of the entire population, mainly with regard to the basic attributes of location, income, and education. In

this sense, our consumers' sample was not representative of the population of Jordan. Therefore, the major conclusions from the survey reported in this thesis are not reliably applicable to the consumers' population as a whole.

How serious this drawback is in limiting the usefulness of this survey depends on the extent to which the conclusions drawn from the small study of a group of above average consumers, can be applied to the market for eggs and broilers in Jordan. The consumer survey reported in this thesis, has merely served to give a concrete confirmation of certain already known facts, as to consumer preferences regarding eggs and chickens. Actually, all quantitative estimates of consumption derived from the consumers' questionnaires were rejected because they were far higher than the estimates calculated from figures of production, imports, and exports.

The author believes that there is an urgent need for a nation-wide comprehensive consumer survey, with the objective of providing basic information necessary to properly organize the distribution systems for both poultry and eggs, and launch an effective advertising campaign to promote the consumption of eggs and chickens in Jordan.

1. Distribution of Consumers' Sample According to Districts

The completed questionnaires were less representative on a district basis than what was first planned. Table 41 shows that the districts of Amman, Nablus, and Jerusalem

have the highest representation in the sample. This should be so on account of their population and income earned by consumers. Ajloun District was fairly represented but Hebron was under-represented. The South was not at all represented.

2. Education

Education of the family head or housewife is important in determining the consumption habits of their families. Educated people are generally regarded as being better informed regarding the nutritional values of different foods. Table 42 shows the distribution of the consumer sample on the basis of their level of schooling.

3. Religion

Distribution of the sample according to religion was fairly representative. Table 43 indicates that 84 percent of the sample were Moslems and 16 percent Christians.

TABLE 43

RELIGION OF RESPONDANTS

	Moslems	Christians	Totals
No. of respondants	305	60	365
Percent of sample	84	16	100

TABLE 41

DISTRIBUTION OF CONSUMERS' SAMPLE ACCORDING TO DISTRICTS

	Amman & Belqa	Ajloun	South	Nablus	Jerusalem	Hebron	Total
No. of respondents	110	48	0	110	80	17	365
Percent of sample	30	13	0	30	23	4	100

TABLE 42

LEVEL OF SCHOOLING OF RESPONDANTS

	Illiterate	Elementary	Preparatory	High School	College	Total
No. of respondents	30	78	55	129	71	363
Percent of sample	8	21	15	36	20	100

4. Income

The demand for any commodity is a function of several factors, particularly, taste, size of the population, income, and prices of close substitutes. In regard to poultry products, income is a very important factor in determining the quantities consumed. Table 44 shows the distribution of the consumers' sample according to different income brackets. This distribution is not very accurate because of the tendency of some respondents to understate or overstate their incomes.

5. Size of Family

Another important factor that has a direct relation to the demand for any good is the size of the consumer population. It was therefore necessary to have the consumers sample as representative of various family sizes as possible. Table 45 shows the distribution of the sample according to family size groups. Of course, it would have been more representative to have a break down of the families according to different age groups, but this was not attainable due to some methodological and statistical difficulties.

TABLE 44
 DISTRIBUTION OF SAMPLE ACCORDING TO INCOME
 (J.D.s Per Year)

	Less Than 300	300-500	501-700	701-1000	More Than 1000	Totals
No. of respondents	83	112	80	64	25	364
Percent of sample	23	31	22	17	7	100

TABLE 45
 FAMILY SIZE
 (Total Number of Family Members)

	1-3	4-6	7-9	10-12	13-15	16-18	18-20	Totals
No. of respondents	45	126	125	43	21	3	1	364
Percent of sample	12	35	34	12	6	1	0	100

Consumer Preference For Broilers

1. How Well The Family Likes Chickens

Half of all the sample reported that their families liked chicken meat, and 44 percent said they liked it very much. Only 5 percent were indifferent and 1 percent did not like poultry.

TABLE 46

HOW WELL THE FAMILY LIKES CHICKENS

	Does Not Like	Indifferent	Likes	Likes Very Much	Total
Number	3	17	184	161	365
Percent of sample	1	5	50	44	100

2. Reasons For Buying Chickens

Most consumers bought chickens primarily because they were delicious and nutritious. Honoring of guests was also a frequent reason

TABLE 47

REASONS FOR BUYING CHICKENS

	Delicious	Cheap	To Honour Guests	Nutritious
Frequency	231	51	137	229
Percent of average	142	31	85	141

3. Reasons For Not Buying Chickens More Often

The most important reasons for not buying chickens more often were that the family was eating all the chicken it wanted and the high price of chickens. This gives a clue towards probable ways of promoting chicken meat consumption, as will be discussed later.

TABLE 48
REASONS FOR NOT BUYING CHICKENS

	Expensive	Do Not Like Them	Eating Enough	Habit
Number	151	8	179	1
Percent of average	177	9	210	1

4. Preference For Baladi or Commercial Chickens

The majority of consumers (76 percent) preferred Baladi chickens to commercial broilers, while 23 percent preferred the latter, and 1 percent were indifferent. This preference for the ordinary village grown chickens presents one of the problems which face commercial broiler producers in Jordan. In fact, Baladi chickens are always sold with a premium of J.Pst. 4-6 per Kilogram higher than the price of commercial broilers. When asked about the reasons for their choice, the vast majority of those favoring Baladi chickens considered them to be more tasty than

broilers raised on commercial farms. Some others considered them more nutritious and tender. In fact, the major reason for this choice, namely better taste, is not without basis for those who have been eating them previously. Baladi chickens have sharper flavor which most consumers have been accustomed to for many years. Changing this attitude may require a long time. Nevertheless, it will not cause any serious threat to commercial broiler farming because of the small volume of Baladi chickens that is available in the market.

TABLE 49
PREFERENCE FOR BALADI OR COMMERCIAL BROILERS

	Baladi	Commercial	No Difference	Total
Number	272	84	3	359
Percent of total	76	23	1	100

TABLE 50
REASONS FOR THE ABOVE PREFERENCE
(Frequency of Each Reason)

	More Tasty	More Nutritious	More Tender	Cleaner
Baladi	235	64	54	4
Commercial	22	20	54	6

5. Most Preferred Weight of Chickens

Most consumers in Jordan have preference for smaller size chickens. Only 8 percent of the sample preferred chickens which had a live weight of more than one kilogram, whereas 37 percent preferred a weight of around one Kilogram, and 32 percent were in favor of broilers weighing 750 grams. Little less than one fourth of the sample consumers preferred even a weight of 500 grams and below.

The preference for smaller broilers entails two main difficulties for broiler producers in Jordan. First, it prevents them from producing at minimum costs per kilogram of meat attainable at 9-10 weeks of age. Second, it reduces the flexibility of supply, since producers are reluctant to keep their birds after they reach the preferred weight for fear of a decline in their prices.

The reasons for preferring a smaller weight of broilers were numerous, but the tenderness of meat was the most frequent. This idea evidently was based on past experience with Baladi chickens. Those who favored a one-Kilogram broiler were aware that it carried more meat and was more tasty.

The problem of preferring a smaller weight broiler is more intricate than what is revealed above. Chickens are mostly served whole rather than in parts, regardless of their weight. So it is more economical to buy a smaller

chicken, since in most cases an individual will be allotted one chicken, large or small. If it is served in parts, then again a given total weight of small size chickens would yield more pieces because of the greater number of broilers cut into the standard parts. Another fundamental reason for this preference is the fact that consumers are still conditioned to the toughness of Baladi chickens when they are above one kilogram in weight. So they might think that commercial broilers of the same weight are similarly tough.

TABLE 51
PREFERRED WEIGHT OF CHICKENS
(Grams of Live Weight)

	500 And Below	Around 750	Around 1000	Around 1500	More Than 1500	Total
Number	73	117	136	25	2	353
Percent of sample	23	32	37	7	1	100

TABLE 52
REASONS FOR THEIR CHOICE

	More Tender	More Tasty	More Nutritious	More Meaty	More Cuts
500 gms and below	39	12	7	-	4
Around 750 gms	46	15	4	11	7
Around 1000 gms	39	25	10	38	6

6. Preference For Live or Dressed Broilers

One of the main difficulties in broiler farming in Jordan, is the fact that Jordanian consumers still prefer to buy their chickens alive, rather than ready to cook. Selling the birds alive, and by necessity at a certain narrow range of weight, makes of broilers a risky enterprise for both producers and poultry dealers, since it reduces to a minimum the flexibility of supply to meet fluctuations in demand. This decided preference for live birds accounts to a large extent for the occasional wide discrepancies between supply and demand, and thus gives rise to undesirable price variations because the surplus can not be stored nor the deficit be supplied from stored frozen broilers.

The results of this survey revealed that 80 percent of all consumers in the sample preferred live broilers, while only 20 percent favored ready-to-cook chickens. When asked about the reasons for their choice, most of those who preferred live broilers did so because they were doubtful of the health and freshness of dressed birds. Other less important reasons included sureness of obedience to the religious prescribed method of slaughtering and to cleanness of carcass. On the other hand, the majority of those who preferred ready-to-cook broilers did so because it saved them time and effort.

With this background, the problem seems to be less obstinate than what is suggested by most poultry producers and dealers. It originates mostly from the lack of confidence on the part of consumers regarding the quality of dressed broilers, which is reinforced by the actions of dishonest dealers and producers, who do not hesitate to slaughter and offer for sale whatever sick birds they might have. Fortunately, there are no sentimental reasons involved. So, what is actually needed is an advertising campaign which would stress the points that consumers are most skeptic about. Moreover the government should undertake inspection of live birds before slaughter to eliminate any sick chickens.

TABLE 53
PREFERENCE FOR LIVE OR READY-TO-COOK BROILERS

	Live	Ready-to-cook	Totals
Number	288	69	357
Percent of sample	80	20	100

TABLE 54
REASONS FOR THE ABOVE PREFERENCE

	Health of Hirds	Cleaness & Effort	Saves Time & Religious	Religious Slaughtering	Less Expensive	Freshness Tastier
Live	116	20	-	29	111	12
Ready-to-cook	2	-	56	-	1	-
						4

TABLE 57
FREQUENCY OF BUYING CHICKENS

	Twice Weekly	Weekly	Twice Monthly	Monthly	To Honor Guests	Feasts & Occasions
Number	41	114	66	103	132	94
Percent of average	45	124	72	112	143	102

7. Rating of Chickens With Respect to Other Meats

The competitive position of chicken meat with respect to other kinds of meats is an important factor in determining the amounts of broilers consumed. In Jordan there are four kinds of meat consumed by the majority of consumers, namely, mutton, beef, fish, and chickens. Pork is not popular, and is not likely to be.

The most popular kind of meat in Jordan is mutton. It is by far the major source of animal protein for the masses of people. Thus, any further expansion in chicken meat consumption should lead to corresponding reduction in the consumption of mutton, unless consumer incomes rise so they can buy more meat. As to taste, chicken meat ranks favorably with mutton, with 37 percent of consumers considering chickens as their first choice and 60 percent placed it second, usually next to mutton and fish. But taste is not all that is involved in the popularity of mutton. Mutton, and beef to some extent, are far better adapted to the cooking habits of Jordanians than chickens. Families with ordinary incomes rarely use meat as a main dish but rather have it cut into small pieces and cooked with vegetables. By so doing, it will be possible to have some meat for every member in the family, and at the same time impart a better flavor to the main vegetable dish. But in the case of broilers this does not occur because

each person has to have a sizeable piece. Chicken meat is an expensive replacement of mutton when consumed in a way similar to that of mutton. The maximum number of individual portion pieces that a chicken could be made into is four or five. But at the cost of one chicken a family can buy about 600 grams of mutton which would make many more pieces than single broiler. It is for this fundamental reason that chicken meat can hardly be a part of the normal diet of an ordinary family. For the same reason, most consumers felt that the price of dressed chickens should be lower than mutton, not because they liked mutton more, but because at prevailing prices it was more economical.

TABLE 55

RATING OF CHICKEN MEAT WITH RESPECT TO OTHER MEATS

	First	Second	Third	Totals
Number	133	213	10	356
Percent of sample	37	60	3	100

TABLE 56

SHOULD THE PRICE OF DRESSED CHICKENS BE HIGHER OR LOWER THAN MUTTON

	Higher	Lower	Same	Total
Number	16	295	48	359
Percent of sample	5	82	13	100

8. Consumption of Broilers

Consumers were asked a few questions which would help to give an indication to their consumption of broilers. However, an important precautionary note should be made before the results are interpreted. Consumers' estimates of their broiler consumption are expectedly higher than the per capita consumption based on the domestic consumption already calculated in Chapter II. This difference may be largely due to the fact that this survey was conducted in the summer, which is the season of highest consumption for most Jordanians. Besides, it is expected that most consumers tend to report rather inflated estimates of their broiler consumption because they may consider this to reflect on their social prestige.

Consumers were first asked about the frequency of buying chickens, and they were given the freedom to check more than one choice. Buying chickens to honor guests received the highest frequency, then followed by weekly and monthly purchasing, respectively. A large number of consumers bought chickens to celebrate feasts and special occasions. This question was supplemented by another one regarding the average number of chickens bought each time and the average weight of each chicken. On the basis of this information it was possible to make a rough estimate of the monthly chicken consumption of each family.

Table 57 (see page 145) indicates that 75 percent of all families surveyed had an average monthly consumption of not more than ten kilograms (on live weight basis), while 25 percent consumed more than that amount. The arithmetic mean of chicken consumption for all families in the sample was 8.9 kilograms of live chickens per month. On the other hand the arithmetic mean for family sizes of all the sample consumers was found to be four members per family. On this basis, the per capita consumption of chicken meat by the families questioned was 24.7 kilograms per year.

The above calculated estimate is far higher than what can be deduced from estimates of national consumption. The net total domestic consumption of chickens in 1963 was calculated at 1,515,000 chickens, or 1,363,500 kilograms on the basis of 900 grams per chicken. Counting on a population of 1.87 millions¹, the per capita consumption of broilers will be 0.7 Kgm. of live chickens. The writer believes that this figure is much closer to the actual consumption than the estimate computed from the consumer survey. In fact, it was estimated in an anonymous study that the per capita consumption of chickens in Jordan during 1962 was 0.3 kilogram. Apparently, the families who filled out the

¹ Based on the official estimate of 1962 plus 3 percent to account for the annual natural increase.

questionnaires in the survey herein reported were consuming considerably more than the average amount of chicken meat.

Comparing per capita broiler consumption of Jordan of 0.7 kilogram with estimates for more advanced countries, as one finds that broiler consumption in Jordan is very low. In the United States, for example, it was estimated that the per capita consumption of broiler meat was 13.9 kilogram in 1963².

TABLE 58

ESTIMATED MONTHLY CHICKEN MEAT CONSUMPTION (KILOGRAMS)

	Less Than 5	5-10	10-15	15-20	Above 20	Totals
Number	119	118	58	19	3	317
Percent of sample	38	37	18	6	1	100

TABLE 59

NUMBER OF CHICKENS CONSUMED DURING THE PREVIOUS MONTH

	Less Than 3	3-5	6-8	9-14	15-20	21-30	Above 30
Number	57	79	78	62	44	11	9
Percent of sample	17	23	23	18	13	3	3

² U.S., Economic Research Service, Poultry and Egg Situation (Washington: United States Department of Agriculture, PES-228, Nov. 1963), p. 4.

At this stage, it will be useful to formulate a forecast of chicken consumption in the future because this will be the decisive factor which places the ceiling for further expansion in broiler farming.

There are several factors which bear on the demand of any food commodity. The most important are the price of the good itself, prices of close substitutes, size of population, level of income, and consumption habits.

The level of broiler prices in Jordan has been declining for the past several years. This trend was accompanied by a large increase in consumption, which was partly due to lowered prices and partly to a substantially higher standard of living. Other reasons for higher chicken consumption include better nutritional education and natural increase in population. But for how long these factors will continue to operate is a matter which needs careful analysis.

Further decline in broiler prices is expected, but it will neither be very rapid nor great. A noticeable drop in prices is likely to happen if producers succeed in cutting their costs of production to a level comparable to what is prevailing in competing countries. This may take about two more years. When this happens, however, retail prices of broilers may fall to an average of 23-24 Jordanian piasters per kilogram of live chickens, or 32 piasters per kilogram

of ready-to-cook broilers. Naturally, this is expected to stimulate higher chicken consumption.

The prices of competing types of meats are another important factor to consider in relation to increasing the consumption of broilers. Mutton is the most common type of meat in Jordan, and it is the most expensive except for pork, which is of minor importance. It usually sells at about 55 piasters per kilogram. The price of mutton is not expected to fall in the foreseeable future; most probably it will stay at around its present level because of the continuing demand in relation to the prospect of limited supply. The broiler/mutton price ratio is going to decline further in the course of the next several years as broiler production continues to grow, until broilers are cheaper than mutton. But this should not necessarily mean that there will be a great substitution of broilers for mutton, because it seems that chicken meat and mutton are not considered as being close substitutes by most Jordanian families. Mutton is the staple meat for the rich and the poor, while chicken meat is a special kind of meat consumed on special occasions regardless of what the price of mutton is. Of course this argument assumes no change in the tastes and eating habits of consumers.

The eating habits of consumers in regard to various kinds of meat were already discussed. For all consumers in

the lower income brackets, the substitution of broilers for mutton is not economically feasible, because a given amount of mutton feeds more persons than the same weight of broiler meat. On the other hand, consumers with above average income are likely to expand their chicken meat consumption if its price falls further.

The level of income is a very important factor in determining the demand of most goods, especially those with high prices. This is what is referred to as income elasticity of demand. This type of elasticity is quite high in the case of broilers and other meats consumed by people in the lower income brackets. This is illustrated in Tables 60 and 61, which show the estimated per capita consumption of chickens and other meats by families in various income brackets.

TABLE 60
CHICKEN MEAT CONSUMPTION OF VARIOUS INCOME GROUPS

(Quantity consumed in kilograms)						
Income Group	Less Than 5	5-10	10-15	15-20	More Than 20	Totals
(J.D.s./Year)	(Percent of total respondents in income groups)					
Less than 300	57	35	8	-	-	100
300-500	43	43	20	3	-	100
501-700	35	35	22	8	-	100
701-1000	21	43	20	14	2	100
More than 1000	13	46	25	8	8	100

TABLE 61
MEAT CONSUMPTION OF VARIOUS INCOME GROUPS

Income Groups (J.D.s./Year)	(Quantity consumed in kilograms, excluding chickens) Less					Totals
	Than 1	1-2	2-4	4-7	7-10	
	(Percent of total respondents in income groups)					
Less than 300	33	42	19	5	1	100
300-500	14	40	36	9	1	100
501-700	3	30	35	23	9	100
701-1000	2	18	49	26	5	100
More than 1000	-	98	29	58	4	100

Both of the above tables indicate a direct correlation between consumption of both types of meat and income, with families of higher income consuming relatively more of them. In fact, it appears that the income of consumers is probably the most important factor which bears on the quantity of broilers and other meats consumed. Even the eating habits of consumers which tend to favor mutton over broilers as the principal type of meat, stem directly from economic reasons. It was mentioned earlier that mutton is considered more economical to use by the ordinary Jordanian family.

The level of family income has been rising for the past several years, largely due to external factors which are not intrinsic in Jordan's economy. Thus, the future may not be

as shiny as the present or, at least, the course of family incomes in the future is not very clear. Therefore, it is not to be expected that incomes will rise markedly in the future and foster a substantial expansion in consumption of broilers.

Population as a factor affecting the consumption of chickens is fairly stable. The natural increase of population in Jordan is likely to stay fairly constant at about 3 percent. Tourists cause a rise in the demand which most broiler producers can fairly predict but no unusual jump in tourism is anticipated. Summer influx of Jordanian returnees from the oil producing countries is not likely to rise on the contrary, it may even fall. On the whole, then, there is no great rise in broiler consumption that is likely to be brought about due to population considerations.

To conclude, the demand for chickens in Jordan is going to be primarily affected by further lowering in its price and the price level of other meats. In the short run, say one or two years from now, chicken consumption will rapidly rise because more people can afford chickens as a delicacy, since it is getting cheaper. In the long run, the rise in consumption will continue, but at a much lower rate, and it will depend largely on how far broilers will be substituted for mutton in the diet of well-to-do families

Furthermore, in the long run, families with average and less than average incomes are not likely to increase their consumption of broilers substantially, due to the greater economy of mutton in Jordanian family cooking.

9. Season of Highest Consumption

A little less than half of all respondents reported no seasonal change in their chicken consumption, and one fourth regarded summer to be the season of their highest consumption. Winter was so considered by 21 percent of the sample.

TABLE 62
SEASON OF HIGHEST BROILER CONSUMPTION

	Summer	Fall	Winter	Spring	Little Difference	Total
Number	25	14	75	33	148	360
Percent of sample	25	4	21	9	41	100

10. Increase or Decrease in Chicken Consumption

More than half of all respondents thought that there was no change in their purchases of chickens during the previous year. On the other hand, 41 percent of them reported to have increased their chicken purchases and only 7 percent reported a decrease. The reasons for the increase or decrease were numerous. Foremost among all was the

abundance of chickens in the market at a relatively cheap price. Other reasons, in the order of their importance, were the growing size of the family and an increase in the number of guests. The sole reason for a decrease in chicken purchases was the fact of the family not being able to afford as much as previously.

TABLE 63
INCREASE OR DECREASE IN CHICKEN PURCHASES

	Increased	Decreased	No Change	Total
Number	146	24	187	357
Percent of sample	41	7	52	100

TABLE 64
REASONS FOR CHANGING AMOUNT OF CHICKEN PURCHASED

	Bigger Family	Higher Income	Cheap	Can not Afford it	More Guests	Less Mutton
Increased	22	16	50	-	20	2
Decreased	-	-	-	10	-	-

Replies regarding changes in chicken purchases were correlated with incomes of respondents, as illustrated in Table 65. The results obtained do not show a close correlation between both of these considerations. A large propor-

tion of respondents in all income groups indicated an increase in their chicken purchases. Similarly, there is a large proportion of them who have indicated no change in this regard, irrespective of income. Reduction of chicken purchases seems to be associated with lowered income.

TABLE 65
CORRELATION OF CHANGE IN CHICKEN PURCHASES WITH INCOME
BRACKETS (J.D.s)

Income of:	Less Than 300	300-500	501-700	701-1000	More Than 1000
(Percent of respondents in each income bracket)					
Increase	31	40	45	43	60
Decrease	15	4	6	3	2
No change	54	56	49	54	40
Totals	100	100	100	100	100

Consumer Preference For Eggs

1. Number of Eggs Consumed

Consumers were asked to estimate the number of eggs consumed during the previous week, and then asked to estimate their average monthly consumption of eggs. The results are shown in Tables 66 and 67.

TABLE 66
FAMILY CONSUMPTION OF EGGS DURING
THE PREVIOUS WEEK

	Less Than		21-30	31-50	More Than		Totals
	10	10-20			50		
Number	70	130	84	59	21	364	
Percent of sample	19	36	23	16	6	100	

The figures in the above table show that more than 50 percent of the families sampled consumed less than 20 eggs during the week prior to the date of when they filled the questionnaires.

Seventy percent of all consumers answering the questionnaires estimated their average monthly egg consumption to be less than 100 eggs, 18 percent consumed 100-150 eggs, and 12 percent consumed more than 150, as shown in Table 67.

TABLE 67
ESTIMATED MONTHLY FAMILY CONSUMPTION OF EGGS

	Less Than		101-150	151-200	More Than		Totals
	50	50-100			200		
Number	103	154	64	27	14	382	
Percent of sample	28	42	18	8	4	100	

The consumption of eggs per person per year in the families surveyed was calculated from the above data and found to be 249, on the basis of a mean family size of four. On the other hand, a completely different estimate is obtained if we rely on the calculated net total domestic consumption of eggs in Jordan based on production, imports and exports. In Chapter II, it was estimated that Jordan's consumption of eggs in 1963 was 73.4 millions. Dividing this by population, estimated for that year at 1.88 millions, the per capita consumption would be 39 eggs per year. Thus, the disparity between both estimates is very wide, as it was in the case of broilers. It is mainly caused by inflated consumer estimates of the number of eggs they consumed and bias in selecting the sample. However, the true figure is not much higher than 39 eggs, because the previous estimate of the national domestic consumption is certainly not far from the actual figure.

Again, upon comparing the egg consumption estimate in Jordan with the United States figure, it will be observed that the difference is quite large. For the year 1963, the per capita consumption in the United States was calculated at 315 eggs³. No estimate could be figured for Lebanon on account of lack of census data on population.

3

Ibid., p. 4.

The figures of egg-consumption, as estimated by consumers themselves, were correlated with consumers' incomes. The results are shown in Table 68. It is evident from the data in this table that there is a strong and direct relation between income and egg consumption for consumers in the lower income brackets. However, the correlation becomes weaker as family income rises, until it almost vanishes completely for consumers with an income of more than 1000 J.D.s. This observation suggests a very important feature regarding the nature of consumers' demand of eggs. At lower incomes, the income elasticity of demand for eggs is positive and high. But it diminishes with higher income until it disappears completely after a certain level of income.

TABLE 68
EGG CONSUMPTION OF VARIOUS INCOME GROUPS

Income Group (J.D.s./Year)	(No. of eggs consumed per month)					Totals
	Less Than 50	50-100	101-150	151-200	More Than 200	
Less than 300	44	37	12	7	-	100
300-500	32	48	14	6	-	100
501-700	22	51	20	5	2	100
701-1000	19	37	30	6	8	100
More than 1000	8	28	16	20	28	100

2. Season of Highest Egg Consumption

There was little agreement on the season of highest egg consumption. About equal responses were reported for summer, winter, and for the item of little difference. The replies reflect mostly seasonal preferences for eggs rather than actual variations in consumption. As a matter of fact, the seasonal variation in consumption follows rather closely variations in egg production. Accordingly, spring and early summer will be the seasons of highest consumption, while in late fall it is lowest because of the small supply coming to market.

Unlike the case of broilers, seasonal changes in egg consumption are thus due to corresponding variations in supply rather than to changes in consumer demand. This difference stems from a very important reason relating to consumers' attitudes towards eggs and broilers. Eggs are considered by the majority of consumers as close to a staple food which does not have close substitutes. Whereas broilers, as stressed earlier, are still considered as a luxury type of meat, occasionally substituted for other types, mainly mutton.

TABLE 69
SEASON OF HIGHEST EGG CONSUMPTION

	Summer	Fall	Winter	Spring	Little Difference	Totals
Number	97	9	99	58	98	361
Percent of sample	27	2	28	16	27	100

3. Change in Egg Purchases

More than half of all sample consumers reported no change in egg purchases, while 39 percent reported an increase, and only 8 percent said they decreased their egg purchases during the previous year. These results signify another feature of the staple character of egg consumption.

Several reasons for changing egg purchases were presented. The main reasons for buying more eggs were bigger families and abundant market supply with lower prices.

TABLE 70
CHANGES IN EGG PURCHASES

	Increased	Decreased	No. Change	Totals
Number	140	27	191	358
Percent of sample	39	8	53	100

TABLE 71
REASONS FOR INCREASING EGG PURCHASES

	Bigger Family	Higher Income	Abundant Supply
Frequency	42	12	36
Percent of average 140		40	120

4. Consumers Attitudes Toward Eggs

The vast majority of the consumers surveyed had a favorable attitude towards eggs as a food. Fifty five percent of the sample consumers reported that they liked eggs, and 35 percent of them were even more affirmative. These two groups together constituted 90 percent of all the consumers' sample.

The reasons for this favorable preference were many, but foremost was the high nutritional value of eggs. Good taste and ease of cooking were also important reasons.

TABLE 72

HOW WELL THE FAMILY LIKED EGGS

	Very Little	Fair	Medium	Much	Totals
Number	6	28	201	129	364
Percent of sample	2	8	55	35	100

5. Reasons For Not Buying More Eggs

The main reason reported for not buying more eggs was that all the eggs the family wanted to eat were being purchased. A much less important reason was the high cost of eggs.

The above reported satiation of consumption is questionable. It is unlikely to be so when the per capita consumption is less than 50 eggs a year. This fact was further evidenced

by a latter question, where more than 80 percent of the sample consumers reported that they would increase their consumption of eggs if the prices were lowered. Therefore, it is more realistic to assume that the consumption is rather momentarily satisfied, only at the present conditions of price and income. A change in either one of these, especially a reduction in price, is likely to cause a noticeable increase in the number purchased and consumed.

TABLE 73
REASONS FOR NOT BUYING MORE EGGS

	Expensive	Buying Enough Now	Do Not Like Them	Scarce
Number	82	243	8	3
Percent of average	98	289	10	4

It is on this assumption that the future expansion of the egg industry is to be based. If the price is lowered to a moderate level, say to an average of 1.25 Jordanian piasters per egg, and if the supply of good quality eggs is more abundant, then the consumption of eggs may rapidly rise by a substantial proportion of its present number, assuming no change in tastes or in incomes of consumers.

Of course, a reduction in price is not feasible at the present, with the prevailing high costs of production. But

producers should do something in this regard and do it quickly. Otherwise, they will soon find it very difficult to stay in business and compete successfully with egg importers who are ready to sell at lower prices.

6. Preference For Baladi or Commercial Eggs

Competition with Baladi eggs is much less of a problem for commercial egg producers than it is in the case of broilers. Although more than 50 percent of the sample consumers preferred Baladi eggs, yet it was observed that eggs from commercial poultry farms were always sold at higher prices. It is therefore concluded that the apparent consumers' preference for Baladi eggs is not sufficiently significant to cause any difficulty for commercial egg producers.

The real difficulty which is facing commercial egg producers in regard to Baladi eggs stems from their much lower production costs, thus resulting in price competition in which commercial producers are at a cost disadvantage. However, consumers seem to be willing to pay a premium for commercial eggs, mostly on account of their bigger size

The reasons for consumers' preference for Baladi eggs are reported in Table 75. The main reason given for their preference was the better taste of Baladi eggs. Other reasons included freshness, nutritional value, and better yellow yolk color. The reported superior taste of Baladi eggs was

due to their sharper flavor to which consumers have been accustomed. But this preference does not seem to be rigid, and it can be easily out balanced by more important attributes, especially egg size. In fact, egg size was reported to be the most important visible factor bearing on prices of commercial eggs. Other attributes of quality, such as freshness, milder taste, and superior nutritional value were also reported to be reasons for preferring commercial eggs.

TABLE 74
PREFERENCE FOR COMMERCIAL OR BALADI EGGS

	Commercial	Baladi	No Difference	Totals
Number	102	201	61	363
Percent of sample	28	55	17	100

TABLE 75
REASONS FOR ABOVE PREFERENCES

	Taste Better	Fresher	More Nutri- tous	Larger	Better Yolk Color	Cleaner	More Avail able
Prefer commercial	36	57	28	47	15	2	-
Prefer Baladi	145	73	48	7	42	-	11

Consumer Survey

(Foreigners)

Procedure

The questionnaire used in this survey was an abridged form of the one used in the Jordanian consumers' survey. The sample of consumers covered in this study was entirely American, since it was not possible, within the short period of time available, to arrange for a wider coverage of foreigners in Jordan.

Questionnaires were mimeographed and distributed by the Office of Irrigated Farming of the United States Aid Mission to Jordan. Out of 50 copies distributed, 25 were completed. The results are summarized in the following pages.

Broilers

1. All sample consumers had a favorable attitude towards chicken meat. Fifty six percent of them said they liked it, and 44 percent liked it very much.

TABLE 76

PREFERENCE FOR BROILER CHICKENS

	Does Not Like Them	Indifferent	Like Them	Like Them Very Much	Totals
Number	0	0	14	11	25
Percent of sample	0	0	56	44	100

2. The most frequent reason for buying chickens was to have variety in meals. Desirable taste was also reported by many.

TABLE 77
REASONS FOR BUYING CHICKENS

	Delicious	Cheap	Nutritious	Variety in Meal	Special Meal
Number	12	4	2	19	2
Percent of average	150	50	25	238	25

3. Chickens were served once a week by more than half of the sample. "Occasional" consumption of chickens was not common, contrary to what was prevailing among Jordanian consumers.

TABLE 78
FREQUENCY OF SERVING CHICKENS TO FAMILY

	Twice Weekly	Weekly	Twice Monthly	Monthly	Special Meal	Sunday
Number	3	14	4	3	0	2
Percent of average	70	326	93	70	0	47

4. The main reason for not buying more chickens was the preference for other meats. High cost was also frequently mentioned. The writer later found, that the price of ready-to-cook chickens

in the leading super-markets in Amman was around J.Pst. 55 per kilogram. This is considerably higher than the current price in the United States.

TABLE 79
REASONS FOR NOT BUYING MORE CHICKENS

	Expensive	Do Not Like Them	Prefer Other Meats	Quality Unsatisfactory
Number	7	0	12	3
Percent of average	127	0	218	55

5. No marked seasonality in consumption was reported. More than 70 percent of the sample consumers reported little difference in their consumption of broilers from season to season, while 20 percent reported a higher consumption in summer.

TABLE 80
SEASON OF INCREASED BROILER CONSUMPTION

	Spring	Summer	Fall	Winter	Little Difference	Totals
Number	0	5	1	1	18	25
Percent of sample	0	20	4	4	72	100

6. Forms of chickens preferred by the sample consumers were distinctly different from those of Jordanian consumers. Cut-up parts and cut-up chickens were the most liked forms. Ready-to-cook chickens came next.

TABLE 81
FORMS OF CHICKENS PREFERRED

	Eviscerated (Head & Feet on)	Ready- to- Cook	Cut- up- Parts	Cut-up Chickens
Number	1	10	14	14
Percent of average	10	103	144	144

7. The majority of sample consumers preferred chickens weighing 1 to 1.5 kilograms (ready-to-cook), which was about two times heavier than the average weight of chickens produced locally. This is one of the reasons why some of the leading supermarkets import chickens from the United States, in spite of the abundant local supply.

TABLE 82
SIZE OF CHICKENS PREFERRED
(Kgs)

	Under 1	1-1.5	Over 1.5	Totals
Number	5	17	3	25
Percent of sample	20	68	12	100

8. Eighty percent of the respondents reported no increase or decrease in their chicken purchases. This is quite different from what has been found in the Jordanians' consumer survey, where 41 percent of the sample consumers have reported an increase in their chicken purchases.

TABLE 83
CHANGE IN CHICKEN PURCHASES

	Increased	Decreased	No Change	Totals
Number	2	3	20	25
Percent of sample	8	12	80	100

The reasons for the reported decrease in chicken purchases were their high cost and poor processing, while the increase was attributed to chickens' improved quality.

9. Several improvements were suggested in order to increase the consumption of locally grown broilers. Foremost was the production of plumper and meatier birds. Care in processing was emphasized by many respondents, so was the production of broilers with better finish.
10. The per capita chicken consumption was calculated at 46.4 kilograms on a dressed weight basis, or what is equivalent to 65 kilograms on live weight basis. This was much greater

than for Jordanians. It indicates that with higher incomes and improved quality and better dressed broilers produced in Jordan, the consumption of local grown broilers can be expected to increase substantially.

Eggs

1. Seasonal changes in egg consumption were negligible; 88 percent of all sample consumers said that there was little difference in their egg consumption.

TABLE 84
SEASON OF INCREASED EGG CONSUMPTION

	Spring	Summer	Fall	Winter	Little Difference	Total
Number	0	0	1	2	22	22
Percent of sample	0	0	4	8	88	100

2. Eighty percent of all families served eggs daily and 12 percent served them on alternate days.

TABLE 85
FREQUENCY OF SERVING EGGS TO THE FAMILY

	Daily	Alternate Days	Others	Totals
Number	20	3	2	25
Percent of sample	80	12	8	100

3. The main reason for not buying more eggs was that the family was buying all what they wanted to eat. Poor quality was mentioned by three respondents.

TABLE 86
REASONS FOR NOT BUYING EGGS MORE OFTEN

	Eat Enough	Price Too High	Quality is Uncertain	Poor Quality
Frequency	22	1	1	3
Percent of average	325	15	15	44

4. More than 90 percent of the respondents preferred eggs produced on commercial farms. The main reasons for this choice were their dependable quality, freshness, and better taste.

TABLE 87
PREFERENCE FOR BALADI OR COMMERCIAL EGGS

	Prefer Baladi	Prefer Commercial	Totals
Number	2	21	23
Percent of sample	9	91	100

TABLE 88
REASONS FOR PREFERRING COMMERCIAL EGGS

	Fresher	Taste Better	Larger	Dependable Quality	Cleaner Shell
Frequency	12	10	5	15	5
Percent of average	127	106	53	159	53

7. The majority of respondents reported no change in their egg purchases. Only three consumers out of 25 said that they increased their egg purchases. The main reason for this increase was better quality of eggs in the market.

TABLE 89
CHANGE IN EGG PURCHASES

	Increased	Decreased	No Change	Totals
Number	3	0	22	25
Percent of sample	12	0	88	100

8. The estimated monthly egg consumption is shown in Table 90. The arithmetic mean for this data is computed to be 105 eggs per family per month. Per capita egg consumption is then calculated on the basis of an average family size of

three, and has been found to be 420 eggs per year. This is considerably higher than the 315 eggs consumed annually per person in the United States. The difference is mainly due to the fact that the sample of Americans selected for this study, is definitely above the average American family as to income and education.

TABLE 90
ESTIMATED MONTHLY EGG CONSUMPTION

	Less Than 50	50- 100	100- 150	150- 200	200- 250	Above 250	Totals
Number	4	11	5	2	2	1	25
Percent of sample	16	44	20	8	8	4	180

9. A number of those who answered the questionnaire indicated they would buy a greater number of eggs if certain improvements were made. The most important were the following (in order of their reported frequency): freshness, uniformity of quality, grading, and freedom from blood spots.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Conclusions based on the data and information presented in the previous chapters will be set forth in the first section. In the following section recommendations based on the main conclusions will be made regarding ways and reasons for improving the marketing of poultry products in Jordan.

CONCLUSIONS

I. Consumer Attitudes and Preferences

- A. The attitudes of Jordanian consumers towards eggs and broilers are quite favorable, and based mainly on taste and nutritive value.
- B. Most consumers still prefer Baladi eggs and chickens to those produced on commercial farms. The main reasons for this choice are:
 1. The taste of the Baladi products is liked more, or rather consumers are accustomed to their taste.
 2. Baladi eggs were claimed to be fresher because they were fresher than the imported, which was the alternative kind before commercial egg farms were established.
- C. Consumers' attitudes towards poultry products produced on commercial farm are improving.
 1. Consumers are slowly getting to appreciate the milder taste, tenderness, and better quality of commercial farm broilers.

2. They are also willing to pay a premium for commercial farm eggs because they are larger and cleaner. Some consumers recognize they are fresher than most Baladi eggs reaching city markets.

D. The vast majority of consumers prefer to buy their broilers alive.

1. Consumers are suspicious regarding the healthiness of birds offered already dressed and the cleanness of processing.

2. They want to be sure of obedience to religious rituals in slaughtering chickens.

Now, however, more and more consumers are switching to ready-to-cook broilers after their suspicions have been proved unwarranted.

E. Small size broilers (750-1000 grams live) are most preferred.

1. They are considered more economical to serve on occasions where every person is allotted one portion. Thus, more persons are served with a given weight of meat.

2. Most consumers believed that smaller chickens have better taste.

F. Consumption of broilers is largest during the summer and the heavy tourist influxes and at the times of religious feasts. Consumption of eggs, on the other hand, follows

the seasonal pattern of production.

1. Broilers

The increased summer demand for broilers is stimulated by the sudden influx of Jordanian immigrants coming home for their vacations. Demand is temporarily increased during tourist seasons and religious feasts such as Easter, Christmas, Al-Adha, and Ramadan.

2. Eggs.

Variations in consumption of eggs follow closely the seasonal pattern of production. The shortage in production during fall and winter is not adequately balanced by imports while there are no stocks of eggs stored from the spring surplus to be released from cold storage.

G. Broilers and eggs in Jordan are consumed mostly in homes except during the summer when returnees eat many broilers in restaurants, while tourists consume substantial quantities of broilers and eggs in hotels.

II. The Supply of Poultry Products

Jordanian producers supply virtually all the domestic consumption of broilers and chickens and nearly 88 percent of the eggs consumed. While commercial poultry farms provide the market with over 90 percent of the supply of broilers and young chickens, they send to market only 9 percent

of the eggs consumed.

1. The number of young Baladi chickens reaching the city markets is quite limited. On the other hand the supply of broilers from commercial poultry farms is generally adequate except when shipments of baby chicks are embargoed by airplane companies during hot summer months.
2. The supply of broilers shows erratic variations from month to month. The reasons are the following:
 - a. Marked seasonal variation in demand.
 - b. Rapid and continuous change in the number and sizes of poultry farms.
 - c. Irregular air shipping of baby chicks.
3. The supply of eggs from commercial farms is increasing but slowly due to the heavy investment required for a layer farm while the competition from imported eggs sold at low prices is strong. The cost of producing eggs on commercial egg farms in Jordan is higher than in competing countries.
4. The number of eggs produced on commercial egg farms for the year 1963 is estimated at 6.72 millions which is only 9 percent of the total domestic consumption.
5. The net domestic consumption of eggs in 1963 was calculated at 73.4 million eggs, while that of broilers was 1.5 million or 1363 tons (live weight).

6. Imports of broilers are negligible, whereas egg imports have been rising steadily, until they exceeded 9 millions in the last two years, which is around 12 percent of net domestic consumption.
7. Higher costs of poultry production in Jordan, compared to competing countries, tends to discourage larger scale of operation because local producers are at a cost disadvantage when they compete with imported eggs.

III. The Market System which Coordinates Supply and Demand.

- A. The following are the principal agencies which handle eggs and broilers in Jordan, with the approximate percentage of the product handled by each:

Percent of Total Volume Handled By
Various Marketing Agencies

	<u>Eggs</u>	<u>Broilers</u>
<u>Wholesale level:</u>		
Country collectors	70	10
Poultry merchants	78	80
<u>Retail level:</u>		
Groceries	50	5
Hotels and restaurants	10	18

Poultry merchants constitute the main agency in the poultry market. Country poultry collectors are the

primary handlers of Baladi eggs. But selling of eggs to consumers is accomplished mainly by groceries and poultry merchants. Selling on contract is not yet common.

- B. Auxiliary marketing services are not in wide use, neither by producers nor by marketing agencies.
1. Eggs are rarely graded or candled, but they are quite often cleaned by commercial farms prior to marketing.
 2. Baladi eggs are transported in wooden boxes, while eggs from commercial farms are transported in molded cup trays placed in wooden boxes.
 3. Broilers are marketed mostly alive.

Most poultry merchants have small processing units in their shops to dress birds at the request of consumers.

- C. Information regarding consumer demand is relayed to producers promptly due to the short chain of intervening agencies.

The main agency which reflects consumer preferences to producers is the poultry merchants. He offers producers prices necessary to obtain the supply of products demanded by consumers.

IV. The Price Making Mechanism and the Behaviour of Prices.

A. Determination of prices at the wholesale and retail levels.

1. Poultry merchants sell live broilers to consumers at such prices at which they can dispose of all the volume of live birds they have at their shops. Prompt sale of broilers is necessary because they can not be kept in the shop for more than few days.
2. Retail prices of eggs are determined at the grocery store level where about half of all eggs are sold, according to the conditions of supply and demand.
3. Wholesale price of eggs, i.e. producer price, is determined on the basis of the retail price, regardless of costs of production.

B. Short term fluctuations in broiler prices are caused mostly by changes in demand. They coincide mostly with religious feasts and occasions such as Christmas, Al-Adha, and Easter.

No short term variations in egg prices were noticed.

C. Seasonal variations in egg prices are determined primarily by the natural pattern of egg production prevalent among Baladi farm flocks.

For broilers, seasonal variations in prices are caused mostly by population changes, mainly, Jordanian immigrants returning home in the summer and the influx

of tourists in certain seasons.

- D. The secular trend in broiler prices has been declining steadily for the last few years, while eggs prices have shown a rather steady trend.

The average retail price of eggs in 1963 was 1.58 Jordanian piasters per egg; for broilers it was 28 piasters per kilogram (live weight).

- E. The prices of Baladi chickens are usually 4-6 piasters per kilogram higher than those of commercial farms. But both types undergo the same types of variation and almost with the same magnitude.

Prices of chicken meat are not strongly related to prices of mutton and other types of meat.

- F. Producer's share of the retail prices of eggs and broilers produced on commercial poultry farms ranges from 82 to 93 percent. Baladi egg producers receive around 76 percent.

The main reason for these apparent high returns to producers is the fact that marketing agencies intervening between producers and consumers render little service to the product after it leaves the farm.

RECOMMENDATIONS

Recommendations for the improvement of the marketing of poultry products and related improvements in poultry production will be grouped into three categories:

1. Improving marketing techniques and practices.
2. Stabilizing market conditions.
3. Reduce costs of production.

Each of these matters will be discussed separately.

I. Improving Marketing Techniques and Practices

A. Improving the marketing of eggs

1. The Department of Extension should educate farmers to produce infertile eggs for table use in order to maintain quality until the eggs reach consumers, particularly during hot weather.

The interior quality of fertile eggs deteriorates rapidly during hot weather due to the development of the embryo. Primary attention should be given to teaching commercial egg producers the importance of producing infertile eggs. Producing such eggs will be difficult for Baladi farm flock producers because they hatch their own replacement chicks under broody hens.

2. Producers and handlers should keep their eggs in cool places where the temperature ranges from 55 to 60^o F.

Keeping eggs cool is the most important factor in maintaining the new-laid quality of eggs. Egg dealers and producers should store their egg supply in cool cellars or rooms especially constructed and equipped for this purpose. They should use mechanical cooling devices when their volume of business makes these economical.

3. Producers should produce cleaner eggs by keeping the litter dry and the nests clean.

Producers should use wood shavings as the litter material and try to keep it dry because wet litter is the is the main reason for dirty eggs. Tiben should not be used as litter because it packs with moist droppings without absorbing the excess moisture unless stirred frequently and ample ventilation carries off the moisture. Laying nests should be dark, well secluded and kept supplied with clean nesting material.

4. Poultry dealers should candle individual eggs only when consumers are particular about quality and are willing to pay the extra cost of this service.

The great majority of consumers at present, do not appreciate superior quality in eggs, sufficiently to be willing to pay a higher price for individually candled top quality eggs, as compared with straight-run eggs as received from producers.

5. Wholesale handlers of eggs should use mechanical grading and sizing equipment which also reveals blood and meat spots before separating the eggs into three sizes, large, medium, and small.

Exact grading according to narrow differences in interior quality and size entails additional expenses which Jordanian consumers are not ready to pay. At present, producers and handlers should manage to get clean eggs which are sorted into three size classes and then stored in cool places. The specifications of each size class should be as follows:

- a. Large, with a weight of above 57 grams.
- b. Medium, with a weight of 50-56 grams.
- c. Small, with a weight of 49 grams and below.

Sizing to more than three classes is not recommended, due to consumers' indifference to extra large size.

5. Country egg collectors should be educated by extension personnel to abandon the traditional method of transporting eggs in large wooden boxes with tiffin to avoid breakage, and instead to use molded cup trays packed in suitable wooden boxes.

Most commercial egg producers are using satisfactory methods of packing their eggs, unlike country

egg collectors and many poultry merchants.

Egg trays holding 30 eggs have proven both safe and easy to handle. The use of cartons holding a dozen or half a dozen of eggs is not advocated for retailing at present, except in certain discriminating markets, where consumers are willing to pay for the price of the cartons.

6. A national poultry marketing federation should be sponsored by the Department of Cooperatives to improve the marketing of eggs and carry on a market development program, to expand the demand for eggs from commercial poultry farms.

B. Improving the marketing of broilers

1. Consumer acceptance and demand for ready-to-cook broilers should be stimulated through a massive advertising campaign stressing freshness, health, and proper slaughtering of birds, to be conducted by a national poultry marketing federation and the Agricultural Marketing Bureau. The government should inspect poultry processing plants to make sure they follow certain prescribed sanitary measures and slaughter only healthy birds.
2. When there is widespread consumption of ready-to-cook broilers, arrangements should be made, probably through a nation-wide poultry marketing

federation for freezing surplus ready-to-cook broilers which the market does not take at prices above the cost of production. These should be offered in the market as soon as the price rises sufficiently to permit their sale at a gain over storage and carrying costs.

3. Consumers should be educated through an effective advertising campaign to develop a favorable attitude toward ready-to-cook broilers of a weight not below 750 grams.

Marketing broilers at such a weight is more economical for producers and offers better quality broilers for consumers

II. Stabilize Conditions of the Poultry Industry

The government should undertake the following measures to help in achieving a reasonable degree of stability in the poultry industry of Jordan.

1. Encourage a greater and more uniform egg production by providing credit and technical assistance for all eligible egg producers.

This program necessitates the support of the Agricultural Credit Corporation, the cooperative credit societies and the Extension Department of

the Ministry of Agriculture. Commercial producers should be educated by the extension specialists on the advantages of growing two or three replacement flocks a year instead of raising one flock of the same age. This will lead to more uniform numbers of eggs going to market from commercial poultry farms, month by month through out the year.

2. Encourage larger scale of broiler operations which have a monthly output of not less than 3000 broilers. This should be done by implementing a less conservative financing policy, and by coordinating marketing of broilers from the various commercial producers through a national poultry marketing federation. Amateur small size broiler farming should be discouraged, because it creates instability in the market through its erratic production pattern.
3. Imports of eggs should be regulated by the government in relation to projected production and consumption. The following steps should be undertaken to achieve this objective.
 - a. Forbid imports in seasons of high local production.
 - b. Enforce a regulation that every imported egg individually shall bear a stamp to designate it.

- c. Inspect quality to make sure it is above a certain minimum for the protection of consumers, and foster consumption of better quality eggs.
4. Abolish all protective tariff measures regarding import of poultry supplies, especially feed and baby chicks.

Poultry producers in Jordan operate in a highly competitive market for their products, and it is unfair to let dealers in feed operate in an oligopolistic market with tariff protection which adds to the disparity between the cost of production in Jordan and in competing countries.

5. Synchronize broiler baby chick placements with anticipated demand in order to reach a reasonable balance between production and consumption.

Marketing research along this line should be conducted by the suggested poultry marketing federation. Its recommendations should be scrutinized and measures which help to stabilize the poultry industry for the benefit of both producers and consumers should be implemented by the government.

III. Reduce Costs of Production

The costs of producing broilers and eggs in Jordan should be reduced by carrying out the following proposals:

1. The price of baby chicks should be reduced from the present level of approximately J.Pst. 8 (L.Pst. 69) to 7 piaster (L.Pst.60) or less, in line with prices of chicks in Lebanon. In order to make this possible, the government should extend loans at convenient terms to farmer cooperatives or companies, in order to establish an adequate number of hatcheries in the country to supply the commercial poultry farms with their requirements of chicks.
2. The government should foster reduction of the price of feed to a normal level in relation to prices in competing countries, by abolishing tariffs presently imposed on imported mixed feeds and by allowing free competition in the feed industry. The price of feed should not be higher than 4.6 piasters (L.Pst.40) per kilogram of boiler feed and 3.9 piasters (L.Pst.34) per kilogram of layer feed.
3. Producers should be encouraged to join poultry cooperatives which would supply them medicines and equipment at reasonable prices because of stronger bargaining power through joint volume purchasing of supplies.
4. The Extension Service and poultry cooperatives should teach commercial poultrymen how to keep mortality in broiler flocks below 2 percent in the summer and below 5 percent in the winter, and the mortality of layer

farms below 10 percent.

5. Commercial poultry producers should reduce their cost of labor by employing intelligent and interested workers, and by installing automatic feeding and watering equipment, whenever economically feasible.

An efficient working manager, with proper automatic equipment can take care of 12,000 to 18,000 broilers or 5,000 - 10,000 layers. If a good worker in Jordan is provided with automatic feeding and watering equipment, he should be able to take care of more than 5000 broilers or 3000 layers. As poultry farm worker and management improve, the number of birds cared for per worker will increase toward the numbers looked after by poultrymen in countries with an advanced poultry industry.

6. Poultry houses should be so designed and constructed as to provide adequate ventilation and admittance of sun shine. This helps to keep the litter dry and to improve the sanitary level inside the pens, so that the chickens are healthier, and grow faster into larger broilers, or lay more eggs.
7. Houses and equipment should be used at close to capacity.

Houses and other capital assets should be used at capacity, or nearly so, since idle facilities and equipment add to the fixed costs of production.

8. Commercial poultry farmers should be encouraged to purchase high producing chicks and good quality supplies at reasonable prices for efficient production at low cost. This is particularly important as to chicks and feed, since the quality of these two items puts the ceiling on all improvements that could be achieved through recommended management practices.

A PLAN FOR CARRYING OUT RECOMMENDATIONS

The recommendations discussed in the previous section regarding reduction of the cost of chicks and feed and improving the marketing of broilers and eggs, can possibly be carried out in more than one way. However, the author believes that the way which suits Jordan most is cooperative work fostered and backed by the government.

There are now in Jordan over 400 cooperatives which are engaged in several kinds of services, mainly savings and credit. There is at the present one cooperative in the country specialized in poultry, namely, Nablus Poultry Cooperative. A brief account of this society was presented earlier in Chapter III.

In spite of many formidable obstacles, this cooperative has been able to extend valuable help to its members, especially as to purchasing of supplies and marketing of their products.

The author suggests establishing two other regional poultry cooperatives in Amman and Jericho areas. Then all three of these cooperatives should join in one federation. This would be the body in charge of all the supply and marketing services for member poultry cooperatives. Its main functions will be as follows:

1. Establish a hatchery and a feed mill and two or three medium size poultry processing plants. The regional poultry cooperatives will act as liaison with producers for the federation in the respective districts. The hatchery and feed mill would be effective instruments to reduce the cost of chicks and feed for producer-members.
2. Undertake advertising campaigns regarding poultry products, at home and abroad, to increase the demand for the output of commercial poultry farms.
3. Recommend to the government policies regarding imports and exports of poultry products.
5. Improve marketing methods and practices of eggs and broilers.
6. Undertake all economic and marketing research concerning poultry products. A study on the cost of production of eggs and broilers is urgently needed, to supply basic information for comparison with prices of imported products to determine the amount of tariff protection needed by the infant poultry industry of Jordan.

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APPENDIX

استفتاء المستر لكسين

ضع إشارة ✓ مقابل الاجابة المرفوضة.

فرائح اللحم

١ - هل تحب عائلتك لحم الدجاج ؟

١ - لا تحبه _____ ٢ - لا تحبه ولا تكرهه _____

٢ - تحبه _____ ٤ - تحبه كثيرا _____

٢ - ما هي الاسباب التي تجعلك تشتري لحم الدجاج ؟

١ - شهوي _____ ٢ - رغيفين _____ ٣ - لتكريم الضيوف _____

٤ - مغذي _____ ٥ - اسباب أخرى _____

٣ - ما هي الاسباب التي لا تجعلك تشتري كمية أكبر من لحم الدجاج ؟

١ - مرتفع الثمن _____ ٢ - لا نجهه _____ ٣ - نشترى ما فيه الكفاية _____

٤ - أشياء أخرى _____

٤ - أي يوم ما تفضل أكثر الدجاج البلدي أم المستورد ؟

١ - المستورد _____ ٢ - البلدي _____

٥ - ما هي أسباب ذلك ؟

١ - طعمه أحسن _____ ٢ - مغذي أكثر _____ ٣ - أ دلى _____

٤ - أسباب أخرى _____

٦ - أي أوزان الصيغان تفضله عادة؟ (بالغرام).

١ - أقل من ٥٠٠ _____ ٢ - حوالي ٥٠٠ _____ ٣ - حوالي ٧٥٠ _____

٤ - حوالي ١٠٠٠ _____ ٥ - حوالي ١٥٠٠ _____

٦ - آخر؟ _____

٧ - ما هي أسباب اختيارك؟

٨ - أي الاشكال التالية تفضلها؟

١ - الصيغان الحية _____ ٢ - الصيغان المذبوحة للدايخ _____

٩ - لماذا؟

١٠ - ما هي أفضلية اللحم التالية لدى عائلتك؟ (من ١ - ٤ حسب الأفضلية)

لحم بقر _____ لحم النعم _____ الصيغان _____

السماك _____

١١ - هل من أسباب لهذا الاختيار؟

١٦- هل تعتقد بأن سعر لحم الدجاج يجب أن يكون أعلى من سعر لحم النخمل؟
نفس السعر _____ أرخص _____

١٧- كم مرة تشترون لحم الصيغان في المادة؟

١- يوميا _____ ٢- اسبوعيا _____ ٣- مرتان في الاسبوع _____

٤- شوريا _____ ٥- مرتان في الشهر _____

عند وجود الضيوف _____ ٦- بمناسبة الاعياد _____

١٨- كم صورة تشتري كل مرة بالتقريب؟

العدد _____

معدل الوزن _____

١٩- كم صورة استملكك عائلتك في الشهر الماضي؟ _____

٢٠- في أي الفصول تستهلك عائلتك أكثر كمية من لحم الصيغان؟

١- الصيف _____ ٢- الخريف _____ ٣- الشتاء _____

٤- الربيع _____ ٥- لا فرق _____

٢١- هل ازداد استهلاك عائلتك من الصيغان في خلال السنة الماضية؟

١- ازداد _____ ٢- نقص _____ ٣- كما هو _____

٢٢- هل من أسباب لذلك؟

٢٣- كم تقدر استهلاك عائلتك من اللحم في الاسبوع؟

٢٤- ملاحظات

البيض

- ١ - كم بيضة استهلك في الأسبوع الماضي؟
 - ١ - أقل من ١٠ بيضات _____ ٢ - من ١٠ إلى ٢٠ _____
 - ٣ - من ٢٠ إلى ٣٠ _____ ٤ - من ٣٠ إلى ٥٠ _____
 - ٥ - أكثر من ٥٠ _____
- ٢ - كم تقدر استهلاك عائلتك الشريفة من البيض؟
 - ١ - أقل من ٥٠ بيضة _____ ٢ - من ٥٠ إلى ١٠٠ _____
 - ٣ - من ١٠٠ إلى ١٥٠ _____ ٤ - من ١٥٠ إلى ٢٠٠ _____
 - ٥ - أكثر من ٢٠٠ بيضة _____
- ٣ - في أي الفصول تستهلكون أكبر كمية من البيض؟
 - ١ - الصيف _____ ٢ - الخريف _____ ٣ - الشتاء _____
 - ٤ - الربيع _____ ٥ - لا فرق _____
- ٤ - هل ازادات مشترياتكم من البيض خلال السنة السابقة؟
 - ١ - ازادات _____ ٢ - نقصت _____ ٣ - كما هي _____
 - ٥ - هل من أسباب لذلك؟
- ٦ - هل تحب عائلتك البيض كغذاء؟
 - ١ - لا تحبه _____ ٢ - تحبه قليلا _____ ٣ - تحبه _____
 - ٤ - تحبه كثيرا _____
 - ٧ - ما هي أسباب ذلك؟
 - ١ - مخذي _____ ٢ - طعمه جيد _____
 - ٣ - سهل الطبخ _____ ٤ - طعمه رديء _____
 - ٥ - آخر _____
- ٨ - ما هي الأسباب التي تجعلك تستهلك كمية أكبر من البيض؟
 - ١ - مرتفعة الثمن _____ ٢ - نستملك بما فيه الكفاية _____
 - ٣ - لا نحبه _____ ٤ - آخر _____
- ٩ - أيهما تفضل أكثر البيض البلدي أم بيض المزارع؟
 - ١ - بيض المزارع _____ ٢ - البيض البلدي _____
 - ٣ - لا فرق _____

١٠ - ما هي أسباب ذلك؟

١ - طعمها أفضل _____ ٢ - لالذجة أكثر _____

٣ - لون صفارها أحسن _____ ٤ - آخر _____

١١ - هل تشترى بيضا أكثر عندما يكون السعر أقل؟ _____

١٢ - كم شخصا في عائلتك في الاعمار التالية؟

١ - أقل من ١٠ سنوات _____ ٢ - من ١٠ الى ١٧ سنة _____

٣ - ١٨ سنة أو أكثر _____ ٤ - أكثر من ٦٠ سنة _____

١٣ - ما هي وظيفة الممثل الرئيسي؟ (اذكر البلد اذا كان يعمل في الخارج)

١٤ - هل أتضمت المدرسة؟

١ - الابتدائية _____ ٢ - الاعدادية _____

٣ - الثانوية _____ ٤ - الجامعة _____

١٥ - الدين؟

١ - مسلم _____ ٢ - مسيحي _____ ٣ - آخر _____

١٦ - بلد الإقامة _____

١٧ - الدخل السنوي العام؟ (من جميع المصادر)

١ - أقل من ٣٠٠ دينار _____ ٢ - من ٣٠٠ الى ٥٠٠ _____

٣ - من ٥٠٠ الى ٧٠٠ _____ ٤ - من ٧٠٠ الى ١٠٠٠ _____

٥ - أكثر من ١٠٠٠٠ دينار _____

١٨ - ملاحظات _____

Consumers' Questionnaire

Broilers

1. How do your family like chicken?
 - a. Don't like them ____
 - b. Indifferent ____
 - c. like them ____
 - d. like them much ____.

2. What are the reasons that you buy chicken?
 - a. Delicious ____
 - b. cheap ____
 - c. good for guests ____
 - d. Nutritious ____
 - e. Others (specify) _____

3. What are the reasons you don't buy chickens more often ?
 - a. Expensive ____
 - b. don't like them ____
 - c. eating enough now ____
 - d. Other _____

4. Which do you prefer of the following kinds of chickens ?
 - a. Commercial broilers ____
 - b. Baladi chickens _____

5. What are the reasons for your choice ?
 - a. More tasty ____
 - b. More nutritious ____
 - c. More tender ____
 - d. Other ____

6. What weight of chickens you prefer most ? (in grams)
 - a. Below 500 ____
 - b. Around 500 ____
 - c. Around 750 ____

7. What are the reasons for your choice ?

8. Which of the following you prefer to buy most ?
 - a. Live chickens ____
 - b. Eviscerated (head and feet on) ____
 - c. Ready to cook ____.

9. Why ?

10. How do your family rank the following meat as to preference ?
(rank from 1 - 4)
- a. Beef ___ b. Mutton ___ c. Chicken ___ d. Fish ___
11. Are there any reasons for this choice ?
12. Do you think the price of dressed chickens should be lower than the price of mutton ? ___ the same ___ higher ___
13. How often do you buy chicken??
- a. daily ___ b. weekly ___ c. twice weekly ___ d. Monthly ___
e. Twice monthly ___ f. For guests ___ g. during feasts ___
14. How much do you buy at one time ?
- No. of chicken _____
Average weight of each _____
15. How many chickens did your family consume last month ? _____
16. In which season does your family consume the most chicken meat ?
- a. Summer ___ b. Fall ___ c. Winter ___ d. Spring ___ e. little difference
17. Have you increased or decreased your purchase of chickens during the past year ?
- a. Increased ___ b. decreased ___ c. No change _____
18. What are the reason for changing you chicken purchases ?
19. How much do you estimate your average weekly consumption of meats ?
(Include only mutton, beef, and pork)

Egg

20. How many eggs did your family consume last week ?
- a. Less than 10. ___ b. 10-20 ___ c. 20-30 ___ d. 30-50 ___ e. Above 50 ___
21. How many eggs do you estimate your family consume during a month ?
- a. Less than 50 ___ b. 50-100 ___ c. 100-150 ___ d. 150-200 ___
e. More than 200. ___

22. During what season does your family consume the most eggs ?
a. Summer ___ b. Fall ___ c. Winter ___ d. Spring ___ e. Little difference ___
23. Have you increased or decreased your purchases of eggs during the past year?
a. Increased ___ b. Decreased ___ c. No change ___
24. What are the reasons for changing your egg purchases ?
25. How do your family like eggs as a food?
a. Very little ___ b. Fair ___ c. Medium ___ d. Much ___
26. What are the reasons for your choice ?
a. Nutritious ___ b. Delicious ___ c. Easy to cook ___
d. Don't taste good ___ e. Other ___
27. What are the reasons you don't buy eggs more often ?
a. Expensive ___ b. Buying enough now ___ c. Don't like them ___
d. Other ___
28. Which do you prefer ?
a. Commercial eggs ___ b. Baladi eggs ___ c. Indifferent ___
29. Why ?
a. Taste better ___ b. fresher ___ c. More nutritious ___
d. Bigger ___ e. Better yolk color ___ f. Other ___
30. Do you buy more eggs when the price is low ? ___
31. How many people in your family are in the following age groups ?
a. Less than 10 ___ b. 10-17 ___ c. 18 or above ___ d. Over 60 ___
32. What is the occupation of the principal wage earner in your family ?
(Specify country if working abroad) _____
33. Did you complete? a. Elementary school ___ b. Preparatory School ___
c. High school ___ d. College ___

34. Religion: a. Moslem ___ b. Christian ___ c. Other _____

35. Place of residence _____

36. Income bracekt, (include all sources) (J.D.) ___ a. Less than 300 _____

b. 300-500 ____ c. 500-700 ____ d. 700-1000 ____ e. More than 1000 _____

37 Remarks:

CONSUMER QUESTIONNAIRE

re
Eggs

Please enter check mark or number in the appropriate blank space:-

1. How many eggs did your family consume last week ?

Less than 10 -- 10-20 -- 20-30 -- 30-40 -- 40-50 -- above 50 --

2. How many eggs do you estimate your family consumes during a month ?

Less than 50 -- 50-100 -- 100-150 -- 150-200 -- 200-250 -- above 250 --

3. During what season does your family consume the most eggs ?

Spring -- Summer -- Fall -- Winter -- Little difference --

4. How often do you serve eggs to your family ?

Daily -- Alternate days -- Number of times per week --

5. What are the reasons why you do not buy more eggs ?

Eat all we want -- Price too high -- Quality poor -- Quality uncertain -- Stale taste --

6. How many eggs do you buy at one time ? ---

7. Which kind of eggs do you prefer ?

From modern commercial poultry farms -- From farm flocks (Baladi) --

8. What are the reasons for this preference ?

Fresher -- Taste better -- Larger -- Dependable quality -- Cleaner shells --

9. Have you changed the quantity of eggs purchased during the past year ?
10. What were the reasons for the change ?
Quality improved -- Quality more dependable -- Better grading --
Shells cleaner --
11. Which of the following improvements would lead you to buy more eggs ?
More uniform, dependable quality -- Fresher -- Lighter yolk --
Firmer white -- Larger size -- Graded for quality and size -- Free
from blood and meat spots -- Cleaner shells -- Cartooned --
Number of members in your family -- Number of children under under
school age --

CONSUMER QUESTIONNAIRE
re
Broiler Chickens

Please enter check mark or number in the appropriate blank space:-

1. How well does your family like broiler chickens ?
Does not like -- Indifferent -- Likes -- Likes very much --
2. What are your reasons for buying chickens ?
Delicious -- Cheap -- Nutritious -- Variety in meats -- Special meal --
3. How often do you serve chicken to your family ?
Twice weekly -- Weekly -- Twice monthly -- Monthly -- Sunday --
Special meal --
4. What are the reasons you do not serve chicken more often ?
Expensive -- Do not like -- Prefer other meats -- Quality un-
satisfactory --
5. How many chickens did your family consume last month ?--
6. How many chickens do you buy at one time ? -- Average weight --
7. In which season does your family consume the most chicken meat ?
Spring -- Summer -- Fall -- Winter -- Little difference --
8. In which form do you prefer to buy chicken ?
Eviscerated (Head and feet on) -- Ready-to-cook -- Cut-up parts --
Cut-up chickens --

9. What size chicken do you prefer to buy ?

Small (under 2 lbs) -- Medium (2-3 lbs) -- Large (over 3 lbs) --

10. Have you changed the quantity of chicken purchased during the past year ?

Increased -- Decreased -- No change --

11. What were the reasons for the change ?

Quality improved -- Appearance improved -- More uniform quality --

12. Which of the following improvements would lead you to buy more local grown broilers ?

Better quality of the meat -- More care in dressing -- Better appearance
More uniformity -- Larger size (2-3 lbs) -- Plumper, meatier bird ---
Cut-up parts -- Cut-up chickens --

Dr. Gordon Ward
School of Agriculture
American University of Beirut, P.O.B. 236
Beirut, Lebanon

Manager of

Esquire:

The American University of Beirut is conducting a study of the egg and broiler industry in Jordan. We ask your cooperation in this connection by providing us with the information regarding the points listed below. We thank you in advance and assure you that the information you send us will remain confidential if you want it to be so treated.

1. From where do you get your supplies of eggs and chickens ?
(Please mention names of merchants or farms)
2. Do you use Baladi or eggs and chickens from commercial poultry farms ? Which do you prefer ? Why ?
3. Is there any seasonal change in your monthly purchases of eggs and chickens ? If so, what is your average consumption in various seasons ?
4. What is the weight of ready-to-cook chickens you prefer most ?
5. Is there any marked variation from time to time in the prices you pay for eggs and chickens ? If yes, what are the reasons ?
6. Do you have any suggestions for increasing the consumption of eggs and chicken meat in Jordan, and in hotels and restaurants in particular ?

N.B. Attached is a stamp of 25 fils to be used in forwarding your reply to the above stated address.

الدكتور جوردن وورد

كلية الزراعة

الجامعة الأميركية في بيروت ص ٠ ب ٢٣٦

لبنان
=====

1963 / /

المستتر

حضرة مدير

ان الجامعة الاميركية في بيروت تقوم بدراسة اقتصادية شاملة لتجارة البيض ولدعم الدواجن في الاردن . واننا نرحب بتعاونكم في هذا الموضوع وذلك باعطائنا المعلومات المتعلقة بالاسئلة التالية . ونحن اذ نشكركم سلفا على اهتمامكم بهذه الدراسة فاننا نؤكد لكم بأن المعلومات التي ستبشون بها ستبقى سرية اذا رغبتم في ذلك .

- ١ - من أين تحصلون على ما يلزكم من البيض والصيدان ؟ (الرجاء ذكر اسماء المزارع او التجار)
- ٢ - هل تستعملون صيغانا وبيضا بلديا أم من انتاج المزارع الحديثية ؟
- ٣ - أيهما تفضلون للاستعمال في مطعمكم البيض والدجاج البلدي أم الاجنبي ؟ ولماذا ؟
- ٤ - هل هنالك تفير موسمي في استهلاككم الشهري من البيض والدجاج ؟
- ٥ - ما هو معدل استهلاككم الشهري في المواسم المختلفة ؟
- ٦ - ما هو معدل وزن الموزن (المذبوح) المفضل لديكم ؟
- ٧ - هل هنالك تفاوت ملحوظ في الأسعار التي تدفعونها ثمن البيض والدجاج ؟ وما هي أسباب ذلك ؟
- ٨ - هل لديكم أي مقترحات لتعسين استهلاك البيض والدجاج في الاردن وفي الفنادق والمطاعم بصفة خاصة ؟

ملحوظة / يرفق بداخل هذا الخلف طابع بريدي بقيمة ٢٥ فلما لاستعماله في ارسال

الجواب على العنوان المذكور أعلاه .

Questionnaire for Marketing Agencies

1. a) Wholesaler ____ b. Jobber ____ c. Country egg collector ____ d. Retailer ____
2. Date _____ Location _____
3. From what sources do you buy eggs and broilers ?
 - a. Farmers ____
 - b. Village shop-keepers ____
 - c. Commercial poultry farms ____
 - d. Country egg dealers or collectors ____
4. Are you satisfied with the eggs and broilers you buy ?
Yes ____ No ____ If not, why ?
5. Do you observe any consumers' preference for eggs and broilers of the Beladi types or from commercial farms ?
6. What needs to be done to improve the consumers acceptance of eggs and broilers ?
7. Do you grade eggs ? How many sizes ?
8. Do you clean eggs ? _____ How ?
9. Do you store eggs when there are surpluses ? _____ How long do you keep them?
10. Do you carry any of the following operations ?
 - a. Slaughtering ____
 - b. dressing ____
 - c. cutting of heads and feet ____
 - d. Eviscerating ____
 - e. wrapping in nylon bags ____
 - f. Refrigeration ____.

11. What are your costs for the above operations ?

Labor	_____
Bags and supplies	_____
Depreciation of equipment at 12%	_____
Interest on investment in equipment at 7%	_____
Repair to equipment at 2% of cost	_____
Total costs	_____

12. Is the demand for eggs and broilers increasing ? Why ?

13. To whom do you sell your products ?

14. What were the prices you recieved for eggs and broilers over the past year ?

15. Why do prices change from month to month ?

16. What do you consider the average margin between the buying and selling prices for :

Eggs

Broilers

17. Remarks.

Producers' Questionnaire

1. Name _____ Date _____
2. Locality _____
3. Type: Eggs _____ Broilers _____ Mixed _____
4. Size _____
5. Previous occupation _____
6. Education:
 - a. Elementary _____
 - b. Preparatory _____
 - c. Secondary _____
 - d. Agr. high school _____
 - e. College _____
7. How long have you been in business? _____

Selling Practices

8. To whom do you sell your eggs and/or broilers? _____
9. Kind of marketing agency? _____
10. Location _____ and distance from the farm _____
11. How often do you sell? _____
12. How do you transport to market? _____ Iced ? _____
13. How much does it cost? _____
14. Is price at the city market or at your farm? _____
15. What prices do you receive? _____

16. Why do prices change from month to month?

17. Do you have difficulty in selling your broilers and/or eggs when they are ready for market?

18. If yes, to what extent this affects prices?

Marketing Practices

Eggs

19. How many times a day do you gather eggs?

20. How do you cool them? Any cool holding ?

21. Do you grade according to size? How many sizes?

22. Do you candle?

23. Do you clean eggs before selling?

24. If yes, how?

25. How do you pack your eggs for market?

a. Basket with tiben _____ b. Boxes with tiben _____

c. Molded cup trays _____ d. Trays in wooden boxes _____

26. Do you get many cracked or broken eggs through transportation? _____
How serious?

Broilers

27. Do you carry any of the following practices: Sell alive _____

a. Slaughtering _____ b. Dressing _____ c. Eviscerating _____

d. Cutting of heads and feet _____ e. Wrapping in nylon bags _____

f. Refrigeration _____ g. Ice dressed broilers to consumers _____

28. What are your costs for these operations? (See below).

29. Is your production of eggs and/or broilers fairly stable or does it fluctuate through the year?

Stable _____ Fluctuate _____

Months highest _____ Months lowest _____

30. Why ?

Marketing Expenses:

Labor

Bags and supplies

Depreciation of equipment at 12%

Interest on investment in eqpt. at 7%

Repairs to equipment at 2% of cost.

31. Remarks.



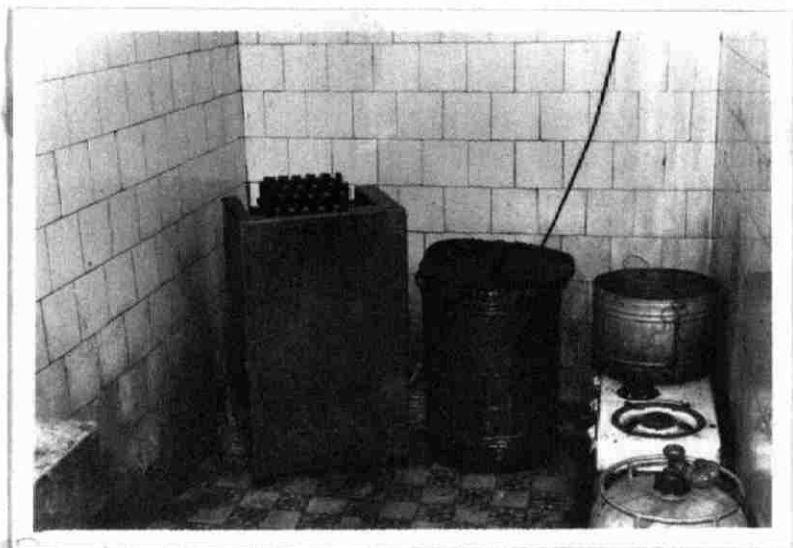
Picture 1: "Anabta's Model Poultry Farm" is located in the basement of this house.



Picture 2: This basement houses the 1000 broilers of "Anabta's Model Poultry Farm".



Picture 3: Front part of a poultry merchant's shop.



Picture 4: Processing unit for dressing chickens in the back of the same shop