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**PERFORMANCE EVALUATION OF
FRUIT AND VEGETABLE WHOLESALE
MARKETS IN JORDAN**

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EXECUTIVE SUMMARY

Wholesale markets are important to Jordan.

Wholesale markets provide a location where thousands of fruit and vegetable farmers can send their produce to be efficiently sold to thousands of retailers and exporters. The existing system has evolved rapidly in response to economic and social changes in the Kingdom. There is one central wholesale market for the Kingdom, located in Amman. Smaller wholesale markets serve Irbid, Zarqa, Jerash, Tafileh, Salt, Karak and Mafraq. In addition, there are shipping point wholesale markets in Al-Arda and Baqa'. Through Regulation Numbers 15 and 59 the government has established the legal environment for the operation of wholesale markets. The system includes provision for municipalities to establish and operate wholesale markets, charging a 4 percent commission (2 percent from the seller and 2 percent from the buyer) on all produce sold in the market. The law requires produce to be sold through an auction system, with commission agents receiving the merchandise and effectuating the sale on behalf of farmers, in exchange for a sales commission which cannot exceed 5 percent. Actual commissions range from 3 to 5 percent in the different markets.

Agriculture is an important but declining contributor to the economy.

Agriculture has developed rapidly in response to demand from domestic markets as well as exports to the neighboring Gulf states. Fruits and vegetables have become a major source of foreign exchange earnings for the Kingdom. And recent economic policy changes have made the Kingdom even more competitive in foreign markets. Exports have increased by 39 percent in 1989 and are expected to continue to grow.

The marketing system is changing and will continue to change.

Like other rapidly developing countries, changes in economic and social conditions are producing pressures for changes in the marketing system. Such changes are normal and reasonable. Rapid population and income growth, concentration of the population in cities, improvements in transportation and communication infrastructure, dramatic improvements in production technology and efficiency along with growing demands for higher quality products by consumers in domestic as well as foreign markets, are the major factors producing pressures for change in the marketing system. Based on experience in other developing countries and observation of the Jordanian situation, it is almost certain that the percentage (not the actual volume) of product going through

the wholesale markets will decline in the future. That decline will be due to the evolution of large scale supermarkets and more quality conscious exporters who will find it more efficient to purchase supplies of fresh produce directly in rural areas. That change is already underway. But wholesale markets will continue to be important and the volume of product passing through them is likely to increase for several years, due to rapid population and income growth and urbanization.

This study focuses on the recent changes in fruit and vegetable markets, evaluates the performance of the system and offers recommendations for improvements.

In order to achieve maximum economic development and to equitably distribute the benefits of development, it is desirable that the fruit and vegetable marketing system be both efficient and effective. Efficiency relates to the operational efficiency of private firms and to the pricing efficiency of the competitive environment. This study focuses primarily on pricing efficiency as determined by the legal and policy environment and by the conditions of competition in the marketing system. A future study will deal with operational efficiency. This study also examines the effectiveness of the competitive system, i.e. whether the marketing system is using the optimum technologies, producing the quality of product preferred by customers, encouraging innovation in technology and management, and achieving equitable distribution of the benefits of improved efficiency and effectiveness.

The legal and policy environment has not kept pace with, nor fostered appropriate evolution of the fruit and vegetable marketing system.

After passage of the laws governing wholesale markets, the Jordanian government has left their operation and supervision up to the municipalities who have developed and operated wholesale markets as a local public service, largely without reference to the evolution of the national marketing system. Several ministries have an interest in the efficient functioning of the marketing system, but none has invested in the development of a specially trained marketing staff with the research and training skills needed to foster appropriate development of the system. And coordination among interested government bodies is ineffective. As a result, the fundamental regulations have not been appropriately modified and the planning, development and management of wholesale markets has not been as effective as it might have been; nor has the public interest been effectively served. Wholesale markets have been very profitable ventures for the municipalities; but little of those "profits" has been invested in the development of better facilities and services. The city of Amman's wholesale market revenues are said to be 10 times the cost of market operation. The basic wholesale market laws have permitted monopolistic behavior. Government's attempts to protect consumers by establishing retail

price controls have not accomplished their purpose and have, in fact, hampered the evolution of an effective and efficient marketing system. No municipality or other government body has taken the initiative to provide the objective and timely market information so vital to the efficient operation of a competitive marketing system.

That ineffective legal and policy environment has fostered the evolution of a marketing system with undesirable structural and behavioral characteristics.

There is a relatively small number of commission agents who theoretically should only represent the interests of their clients. Yet the laws permit them to also function as buyers in the same markets - a situation which all over the world is recognized as detrimental to effective and fair competition. At present 7 of those commission agents also function as exporters. But in 1986 there were 21 commission agents who were exporters. Business losses by several of those commission agents/exporters since 1986 are said to have resulted in default in payments to farmers among other undesirable results. The majority of exports are currently made by only 12 firms, some of which are also commission agents.

While the law requires all sales in wholesale markets to be made by open auction, a survey of commission agents revealed that less than two-thirds of sales are made in that way. Commission agents are also permitted to grant credit to farmers as a way of enhancing the volume of product delivered to them. Yet most commission agents also delay payment after products are actually delivered by at least a week, while awaiting payment from export or domestic buyers. Hence, Jordanian farmers are carrying the burden of financing the entire marketing process. Commission agents and exporters have not effectively encouraged the development of improvements in product quality as requested by their foreign and domestic customers.

Improvements in the performance of the system can be made by concerted and coordinated action.

It comes as no surprise that the fruit and vegetable marketing system is not performing efficiently and effectively. Some of the explanation is that the old institutional and legal framework is not adequate nor appropriate for the new economic reality. In addition it should be seen as a fairly normal outcome of the economic growth process which has been rapid in Jordan. Finally, it is the result of astute businessmen taking advantage of every business opportunity offered within the confines of the legal and regulatory environment. But in the public interest it is clearly time for some changes.

A series of 13 specific recommendations are offered. The first is that Law 15 which created the Agricultural Marketing Organization be modified to make it clear that the organization has full governmental responsibility and authority to coordinate and supervise wholesale market activities in the Kingdom.

Several other recommendations suggest important modifications in Wholesale Market Regulation No. 14 in order to prohibit commission agents from buying product and to require only that sales to exporters be by auction.

Several modifications in the internal regulations of the Amman Central Wholesale Market are suggested, including: the creation of separate selling areas for domestic and export buyers, the grouping of sales by product or product group, the requirement that all commission agents purchase an operating license annually through a competitive auction, the elimination of the requirement that the wholesale market authority is entitled to collect its 4 percent fee on all fruits and vegetables entering the city of Amman even if the product does not pass through the market. It is suggested that the City of Amman begin immediately to plan for the construction of a new, larger wholesale market in the outskirts of the city. It is also recommended that price controls on all fruits and vegetables be suspended.

The Agricultural Marketing Organization (AMO) should accelerate its programs to develop a national market information system, to introduce improved sorting, grading, packaging and handling practices, and to create effective shipping point markets in major producing areas. In regard to the latter it is recommended that AMO, in cooperation with AMPCO carry out a study to formulate strategies to effectively use the packing facilities owned by AMPCO in the Jordan Valley.

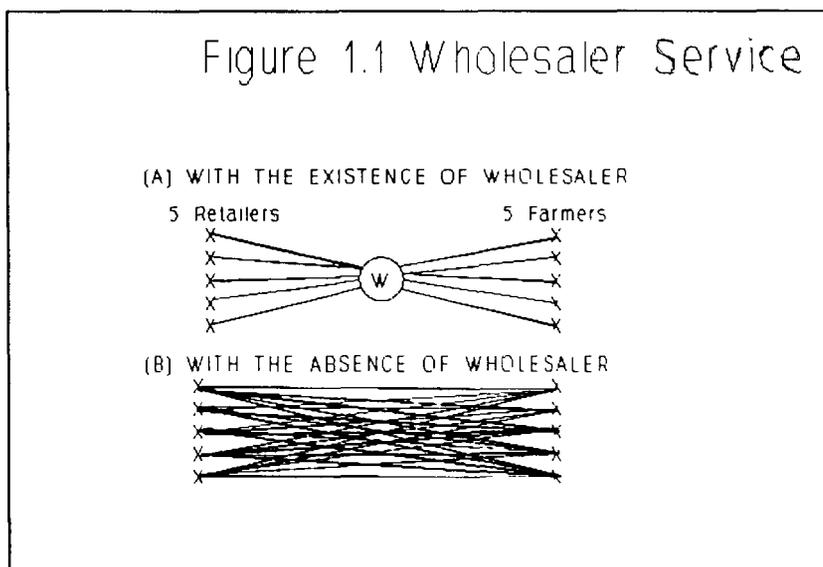
CHAPTER 1

CONCEPTUAL FRAMEWORK FOR EVALUATING WHOLESALE FRUIT AND VEGETABLE MARKETS IN JORDAN

Wholesale markets play an important economic role in Jordan. They improve the efficiency of the exchange process between thousands of efficient farmers and millions of consumers in Jordan and several other countries. More accurately, they provide a central location with established rules for facilitating the exchange process between farmers and their buyers (retailers, traders and exporters). Commission agents facilitate the transactions between the two parties within the wholesale markets.

ECONOMIC RATIONALE FOR MARKETING INTERMEDIARIES

Intermediaries exist to reduce the cost of marketing and to provide several valuable services for consumers. Figure 1.1 illustrates how intermediaries reduce marketing costs. The lower part of the figure illustrates how many transactions would be required if just 5 farmers had to make all of their sales directly to only 5 consumers without the services of a wholesaler



or commission agent. Each transaction would require the farmer to physically accompany his product to the point of contact with the retailer; to take the time to negotiate each of the numerous sales; and to physically exchange the product. Those costs are reduced significantly by the provision of an intermediary who receives the product at a central

location and offers the product on behalf of farmers as illustrated in the lower part of the figure.

Intermediaries also smooth the flow of goods by creating time, place and possession utilities. One aspect of the smoothing function is what has been called the "sorting" function. Stearn and El Ansary list the following as sub-components of the sorting function:

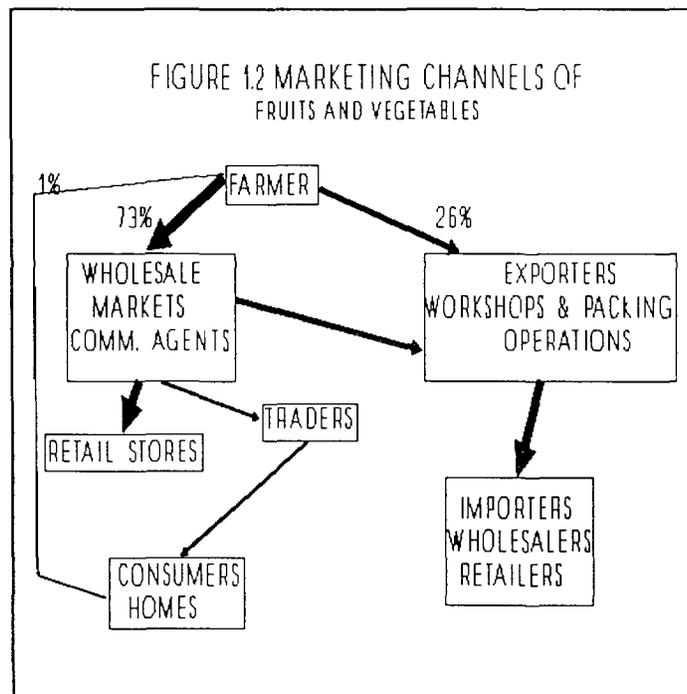
1. **Sorting out.** Breaking down a heterogeneous supply into separate stocks which are relatively homogeneous. (Sorting out is typified by the grading of agricultural products, such as grading eggs according to size and grading beef as either choice or prime).
2. **Accumulation.** Bringing similar stocks from a number of sources together into a larger homogeneous supply.
3. **Allocation.** Breaking a homogeneous supply down into smaller and smaller lots. (Allocating at the wholesale level is referred to as "breaking bulk.") Goods received in carloads are sold in case lots. A buyer of case lots in turn sells individual units. The allocation processes generally coincide with geographical dispersal and successive movement of products from origin to end consumer.
4. **Assorting.** Building up the assortment of products for use in association with each other. (Wholesalers build assortments of goods for retailers, and retailers build assortments for their customers.)¹

By specialization, division of labor and routinization of marketing tasks, intermediaries can further reduce marketing costs. Improvements in information gathering and product handling through technological innovations can further reduce marketing costs by more efficiently matching supply and demand and by reducing product losses. These issues

¹ Stern, Louis W. and Adel El-Ansary, *Marketing Channels*, Second Edition, Prentice-Hall Inc., Englewood Cliffs, New Jersey, 1982, pp. 8-9

are especially important in the marketing of highly perishable and short lived fresh fruits and vegetables.

Figure 1.2 depicts the relatively simple marketing channels for fruits and vegetables in Jordan. Farmers may either send their products on consignment to a commission agent in one of the wholesale markets or negotiate a direct sale with an exporter. Exporters, retailers and traders compete with each other, primarily through open auction, in the wholesale markets for the purchase of products to be delivered to their respective customers.



Transportation from farm to wholesale market and to exporters and retailers is done primarily by custom transporters at a relatively high cost per unit, using small unrefrigerated and usually uncovered trucks, which are nevertheless quite well adapted to the small lots being handled.

Most of Jordan's fruit and vegetable exports are to neighboring countries in refrigerated trailers.

EVOLUTION OF THE MARKETING SYSTEM

It is useful to recognize that as the economy of Jordan continues to develop, the marketing system can be expected to change and evolve along the lines of evolution of previously industrialized nations. Different authors have offered useful observations on the evolution of marketing systems in the economic development process:

1. Harrison and Horton have identified four stages of marketing system development based on 11 general economic and

infrastructural variables (Annex I).²

2. Mittendorf identifies three stages of marketing system development and describes the characteristics of each.³
3. Shaffer does not directly allude to stages of marketing system development but he makes the important point that more advanced systems are characterized by intermediaries with very different behavior ("active coordinators") from traditional intermediaries ("passive coordinators").⁴
4. Minot also does not directly allude to stages but he does say that more advanced (i.e. more efficient) marketing systems are characterized by significantly more forward contracting arrangements as opposed to cash or spot market transactions.⁵

Harrison and Horton argue that countries can be classified into one of four stages of market system evolution at any given time and that there is a predictable pattern to marketing system evolution. Their four categories are: pre-urban, Stage I (early urban), Stage II (pre-industrialized) and Stage III (industrialized). They base that predictability on two categories of characteristics (Annex I). The first five are predictive variables or "forces of change" and include per capita income, percentage of the population living in cities, level of transport and communication infrastructure and the type of government

² Harrison, Kelly M. and John Horton, *Recent Evolution of Urban Wholesale/Retail Food Distribution Systems in the Third World*, Kelly Harrison Associates, Inc., November 1986.

³ Mittendorf, Hans J., "Role of Government in Improving Food Market Centers in Less Developed Countries", Chapter 5 in *World Food Marketing Systems*, Edited by Erdener Kayak, Butterworths & Co. Ltd., London, 1986, pp. 54-72.

⁴ Shaffer, James D., *Influencing the Design of Marketing Systems to Promote Development in Third World Countries*. A paper presented at the International Workshop on Agricultural Markets in the Semi-Arid Tropics, India, October 24, 1983, p. 12.

⁵ Minot, Nicholas William, *Contract Farming and its Effect on Small Farmers in Less Developed Countries*, Michigan State University, 1986, Working Paper No 31

involvement in marketing system development.

- * Rising per capita incomes change consumer demands and create the desire for more marketing services, e.g. quality improvements, processing, packaging.
- * The move of rural people to cities increases the demand for marketing services and produces pressures for the marketing system to adapt.
- * The development of improved roads, railroads or water transport enhance the options for marketing system development.
- * Development of improved means of communication permit the evolution of more efficient marketing institutions.
- * Government attitudes toward the marketing system shape the evolution of the marketing system; fear and distrust of middlemen tends to impede the evolution of more advanced marketing systems.

Those predictive variables define the path of economic development for a given country. As a country progresses along that development path, certain predictable changes will take place within the food marketing system. The authors identify six additional variables which are "associated" with the predictive variables and which characterize the evolving food marketing system. Those six variables can be used to help determine at which stage of evolution a particular country may be and what changes can be expected as economic development continues.

The authors note:

"This schematic depiction is obviously an idealization of the processes which take place. The paths of no two marketing systems are identical. The fundamental distinction between patterns traced by different developing economies is the differing rhythm of progression between the stages. Observing how the evolution of one category may lag behind the progression expected from the idealized paradigm can be useful for planners in diagnosing problem areas and designing interventions. *The usefulness of*

*this paradigm is as a first attempt at building a realistic yardstick which fellow marketing specialists can refine as a standard diagnostic tool."*⁶

While the authors do not attempt to rigidly classify countries, an examination of predictive variables for Jordan seems to place it in Stage II (pre-industrial). Nearly sixty percent of the population is concentrated in urban areas, per capita income exceeds U.S. \$2,000, transportation and wholesale market and communication infra-structure is relatively well developed, and recent government policy adjustments will support the evolution of a more efficient private marketing system. Similarly, a review of the associated variables indicates that Jordan has developed as predicted into Stage II, **with two important exceptions - financial institution support and market coordination**. In regard to those two variables, Jordan remains in Stage I with limited non-local money lending dominating the financing of marketing activities and with spot marketing arrangements and imperfect demand anticipation. Hence, we can conclude that there will be a need for the Jordan marketing system to resolve those two issues as the evolution into the pre-industrial stage is completed.

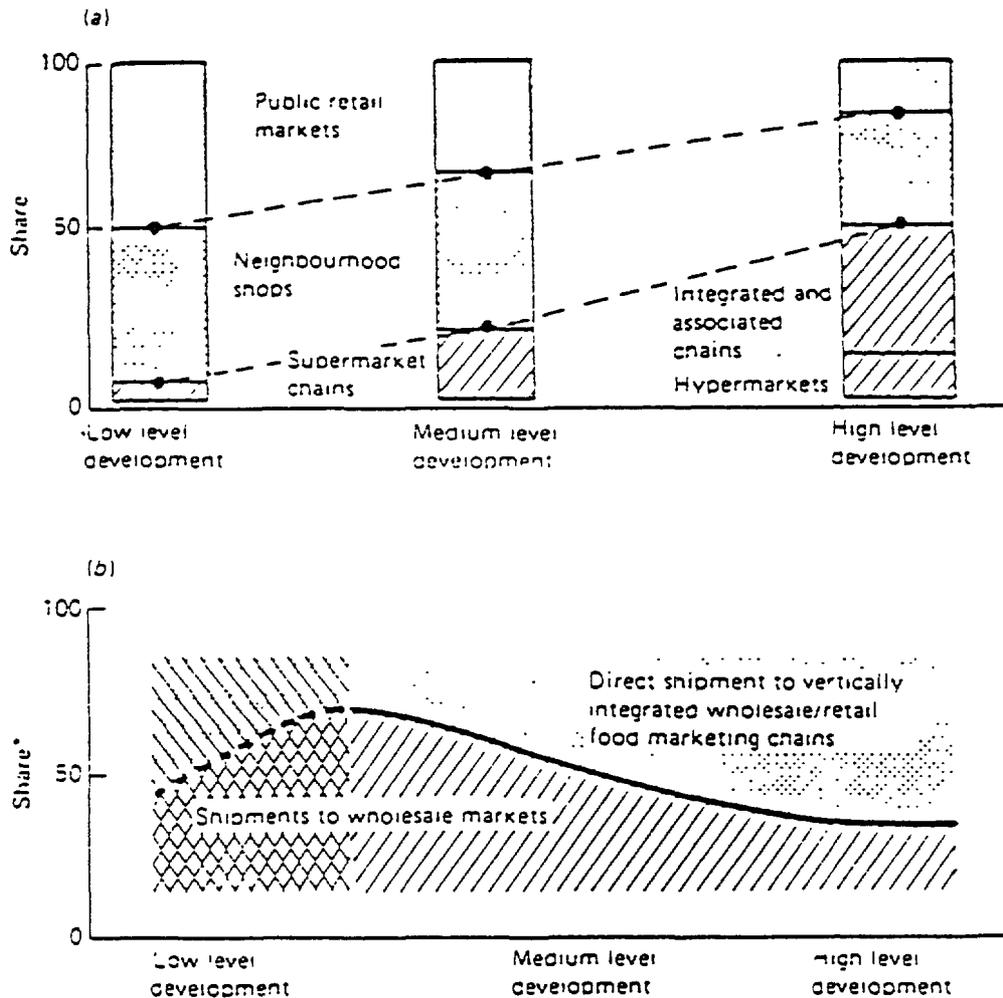
What then are the changes which can be expected and encouraged as a way to increase the efficiency and effectiveness of the Jordan marketing system for fruits and vegetables in the immediate future? A look at the characteristics of the stage II and III countries indicates that we can expect a lower percentage of total product to move through wholesale markets as chain stores evolve and begin purchasing directly from farmers. Exporters can be expected to do the same in an effort to reduce handling costs, maintain product quality and reduce the elapsed time from the farmer's field to foreign buyer.

Mittendorf makes a similar point graphically (Figure 1.3).⁷ In the case of Jordan, public retail markets have not been as important as in other countries, but otherwise the top graph is applicable to what has been happening here. In the lower graph one only needs recognize that direct purchases by exporters, as well as by retail chain stores, are increasing. But it is important to emphasize that these changes are **relative**, that is, the percentage of total volume moving through the wholesale markets will decline, but the

⁶ Harrison and Horton, op. cit., p. 8.

⁷ Mittendorf, Hans J., op. cit.

FIGURE 1.3 Changes in food retailing and wholesale in the course of economic development in less developed countries. (a) Retailing (increasing role of food chains and declining role of public retail markets); (b) wholesaling (declining role of wholesale markets and increasing direct shipments to food chains). * Share of food passing through wholesale markets and direct shipments to food chains.



actual volume may continue to increase for a time, due to population growth and increased consumption of fruits and vegetables. Eventually even the volume moving through wholesale markets may start to slowly decline as it has in the United States.

In discussing ways to improve performance of marketing systems in developing countries Shaffer emphasizes the need for "active coordination" of marketing channels by innovative marketing firms. He notes that traditional farmers and traders tend to be passive, accepting the status quo rather than actively identifying potential markets and promoting production to supply them.

"Active coordinators identify potential demands and, to meet the demand, offer information and incentives to potential producers. They influence farm production decisions. They understand producer's problems and help them solve them. They promote the availability of critical farm inputs and assure markets, reducing market uncertainty. They actively seek markets for products adapted to local production conditions."⁸

Harrison, et. al., in offering suggestions for developing export marketing systems in the Caribbean Basin, describe the importance of "channel captains". They define the channel captain as "the person or firm who plans and coordinates the movement of product through the marketing channel. The channel captain normally has title to the product during the export marketing process. He is, therefore, responsible for the following marketing functions: financing, risk taking, grading, packaging, cooling, storage, transportation and selling."⁹ The channel captain can reduce marketing costs and uncertainties by effective management of appropriate technology, which is especially important in delivering high quality and obtaining high prices for highly perishable products.

⁸ Shaffer, James D., op. cit., p. 12.

⁹ Harrison, Kelly M., Harold Mannion and Michael Kraidy, *An Approach to Analyzing the Potential of U.S. Markets for Caribbean Basin Countries*, Kelly Harrison Associates, Inc., revised August 1985.

Minot¹⁰ notes that, given the lack of perfect information in real markets, spot market sales like those carried on in the wholesale markets of Jordan may not meet the needs of farmers and intermediaries. **And** even if they provide "efficient" pricing, may not minimize risks and facilitate innovation in marketing practices. He explains that risks may be reduced and marketing efficiency enhanced by improvements in "vertical coordination", defined as the process by which supply and demand are adjusted toward each other with regard to product quantity, quality, location and time of delivery. He discusses two ways to improve vertical coordination. The first is "vertical integration" - the system in which different stages of the vertical production-marketing chain are performed by the same firm. An example in Jordan is the ownership of farms by fruit and vegetable exporters - a phenomenon which is on the increase. That is part of the predicted evolution of the marketing system in Jordan. The second way to improve vertical coordination is through contracts between farmers and market intermediaries. He describes 3 different types of contracts - market-specification contracts, resource-providing contracts and production-management contracts. These types of contracts provide the following advantages to farmers in varying degrees: reduced risk, the possibility of a relatively fixed income, reduced responsibility, access to inputs, technical assistance, reduced marketing problems and reduced need for operating capital. In U.S. fresh fruit and vegetable markets, forward contracts account for about 95 percent of all sales.¹¹ Contracting is only just beginning to appear in the fruit and vegetable marketing system in Jordan. But it will undoubtedly increase as a way for "channel captains" to obtain stable supplies of high quality products for export to the demanding European market and to maintain Jordan's position in neighboring Gulf markets.

ECONOMIC CRITERIA FOR EVALUATING MARKET PERFORMANCE

Economists have traditionally argued that markets will most efficiently allocate product and resources and that no excess profits will accrue to any participant when four conditions pertain:

1. there are large numbers of buyers and sellers, none of which can appreciably influence prices;

¹⁰ Minot, Nicholas William. op. cit.

¹¹ Paul, Allen P., Robert W. Bohall, and Gerald E. Plato. *Farmers Access to Markets*, Washington, D.C.: USDA ESCS, NED, Sept. 1980.

2. all products are uniform;
3. there are no barriers to entry and exit of new firms;
4. all buyers and sellers have access to perfect information.

Economists have had difficulty defining criteria for evaluating economic efficiency in the real world where those ideal circumstances never prevail. A recent symposium brought together over 30 of the most noted practitioners of marketing efficiency analysis in the United States. In the introductory chapter of a book publishing the results of that symposium the organizers state:

"In undertaking a survey of the relevance of various economic efficiency measures for the analysis of the food marketing system, we encountered in the literature an embarrassing richness of concepts, often poorly defined and unrelated, as is no doubt reflected in the following presentation."¹²

They note that the agricultural economics profession has historically tended to follow one of two approaches:

"(1) focus the analysis on subsystems (processing plants, elevators, transportation systems, etc.) in which the measurement and analytical problems are more tractable or (2) consider the organizational structure of the system and the institutional and policy constraints under which it operates, with the aim of identifying the structural and organizational characteristics likely to generate 'inefficiencies'." The first approach led to the analysis of productive efficiency of well-defined marketing subsystems. The second approach has motivated market-structure analyses by students of industrial organization. In such analyses market structure determines market conduct and, consequently, market performance.¹³

¹² Kilmer, Richard L. and Walter J. Armbruster, *Economic Efficiency in Agricultural and Food Marketing*, Iowa State University Press, Ames, 1987, p. 3.

¹³ *ibid.*

The structure, conduct, performance approach was articulated by Joe Bain.¹⁴ It is argued that the structure, i.e. the number of and size distribution of buyers and sellers, the conditions of entry and the degree of product differentiation sets the tone for firm competitive behavior (conduct). The competitive behavior with respect to pricing policies, products offered and amount offered, will be determined by the competitive environment, i.e. structure. Finally, the characteristics of structure and conduct determine the economic performance of the industry. The approach is essentially a way of determining how closely the actual situation in an industry seems to approximate the conditions of perfect competition. Hence, in an industry where there are few competitors, with effective restriction on the entry of new competitors and where explicit and tacit collusion exists, the industry is likely to perform very much like a monopoly - a condition which can be proven in economic theory to be less "efficient" than perfect competition. Bain suggests that researchers determine the number of competitors and the percentage of production by the top 4, 8, 12, 16 and 20 firms in the industry as an indicator of monopolistic structure. He suggests that research be undertaken to evaluate the behavior of the firms in order to detect if there is overt or tacit price collusion or conspiracy to limit production.

International experience has shown that improvements in efficiency at the firm level through economies of scale and technological innovation frequently lead to fewer competitors in a given market. Hence, improvements in efficiency at the firm level may produce changes in market structure which move away from the conditions of perfect competition. However, it has been shown that some markets can be highly competitive and economically "efficient" even when there are few competitors. In such cases, government action is needed to regulate behavior and assure effective competition.

A PRAGMATIC APPROACH TO MARKET PERFORMANCE EVALUATION

The foregoing discussion illustrates the complexity of attempting to objectively evaluate the economic performance of a dynamically evolving marketing system. *Uni-dimensional or narrowly focused approaches can easily lead to erroneous conclusions about economic performance and proposals for policy interventions that could easily make the system less "efficient".* Glaring examples of marketing inefficiencies in developing countries can be clearly traced to such narrowly focused performance evaluations. Retail

¹⁴ Bain J., *Industrial Organization*, University of California, Berkeley, John Wiley & Sons, Inc., 1968

price controls or wholesale margin controls are usually the result of superficial analysis of market structure and conduct with the conclusion that intermediaries are colluding to hold prices up or marketed volumes down in order to extract monopoly profits at the expense of consumers or farmers or both. Yet price controls often introduce rigidities which prevent the "efficient" allocation of resources to meet changing conditions of supply and demand. And such administered prices clearly restrict innovative behavior by making it impossible for an entrepreneur to adopt innovative practices with the hope of being compensated for the risk of failure by obtaining a higher price through product differentiation. Improved product varieties, better packaging and adoption of grading and sorting are some of the innovations in fruit and vegetable marketing which are clearly restricted by administered prices.

The Agricultural Marketing Organization has therefore adopted a pragmatic view of performance evaluation for the fruit and vegetable marketing system in Jordan. It starts with the recognition that a systematic and objective analysis of market structure, conduct and performance is needed to determine if there are economic inefficiencies arising from monopolistic competition. If undesirable conditions are discovered, then policy recommendations should be formulated that will permit government to correct the situation without creating additional problems or economic disincentives for private sector operators. The government's objective is to encourage the evolution of a more efficient and effective marketing system through innovative marketers using "active coordination".

Mittendorf has neatly summarized the other performance criteria which can be used by the Agricultural Marketing Organization in fulfilling its mandate. They are completely consistent with the concept of evolution of marketing systems noted above as well as the importance of "active coordination" by innovative "channel captains" through forward contracting and vertical integration. The additional performance criteria are:

1. **Pricing efficiency** - the degree to which prices reflect the relevant factors determining the true market value of a product and the assessment of the relationship of prices to related prices at leading wholesale markets to government price policy, where relevant.
 2. **Operational efficiency** - defining the degree to which the prevailing operational procedures such as unloading, stacking,
-

cleaning, sorting, weighing, packing, transporting, measure up to optimum standards obtainable in given conditions; market charges should be sufficient to maintain the market in good working order so as to meet the service requirements of customers (farmers, consumers, traders), but should not discourage use of the market.

3. **Innovative efficiency** - expressing the degree to which marketing enterprises and the market authority act as a force for the innovation of the production/marketing system through the systematic dissemination of appropriate technology, new techniques and practices by intensive extension and advisory work.
4. **Credit efficiency** - defining the degree of efficiency at which short-term credit is provided upstream as well as downstream through the trade to participants, including farmers in the marketing system.¹⁵

The present study deals only with market structure, conduct, performance and pricing efficiency analysis. A separate and highly complementary study will be undertaken in the near future to evaluate operational, innovative and credit efficiency of fruit and vegetable markets in Jordan.

¹⁵ Mittendorf, Hans J., op. cit.

ANNEX I

PARADIGM OF URBAN MARKET EVOLUTION

CATEGORY	PRE-URBAN	STAGE I	STAGE II	STAGE III
I. URBANIZATION & REGIONAL SPECIALIZATION	Predominantly rural with little regional differentiation	Discrete urban clusters with incipient regional specialization	Substantial urban hubs surrounded by distinct areas associated with different types of agri & indust production.	Predominantly urban population, pronounced, regional delineation of prod'n corresponding to comparative advantage.
II. INCOME LEVEL	Low income	Low & lower - middle income	Lower - middle & upper - middle	Upper - middle, high & industrial market economics
III. TRANSPORT & OTHER INFRASTRUCTURE	Paths & crude roads	Market roads & limited urban infrastructure	Centralized wholesale facilities, good regional & extensive nat'l transportation	Transportation integrated with international network
IV. COMMUNICATION INFRASTRUCTURE	Limited outside local area	Regional comm'n limited, telecomm'n principally in centralized facilities	Extensive nat'l comm'n network including telecomm'n	Communication integrated with int'l network
V. GOVERNMENT INVOLVEMENT	Sporadic government involvement	Regular involvement with at least limited effect on most all production & merchandizing	Commodity policies, some marketing boards, extensive investment in urban facilities	System of taxes/ subsidies effecting most commodities, govt oper. of some facilities but extensive privatization
VI. PREDOMINANT TRADER INSTITUTION	Household members only	Rural producer-traders & urban buyers	Professional merchants	Merchants & some vertically integrated procurement
VII. PRODUCTION SYSTEM	Self sufficiency	Market surplus production	Market oriented production	Global market orientation
VIII. PRODUCT MIX	Predominantly grain & starchy root crops	Seasonal fluctuations still great, growing importance of higher value products	Extensive variety, some import subst'n increased perc'n'g livestock & hort. prod., convenience factor growing	Full gamut, high prop't'n perishables, meat, fish, eggs & dairy prod. convenience considerable importance
IX. FINANCIAL INSTITUTIONAL SUPPORT	Local only	Limited non-local money lending	Dependable formal credit	Reliance on nat'l & int'l financial institutions
X. MARKET COORDINATION	Autonomous	Spot market & imperfect demand anticipation	Some forward marketing	Dynamic efficiency responding to global market information
XI. SPATIAL ORGANIZATION OF MARKETS	Diffuse points of exchange	Periodic markets	Fixed central exchanges	Multiplicity of central places & targeted direct buyers

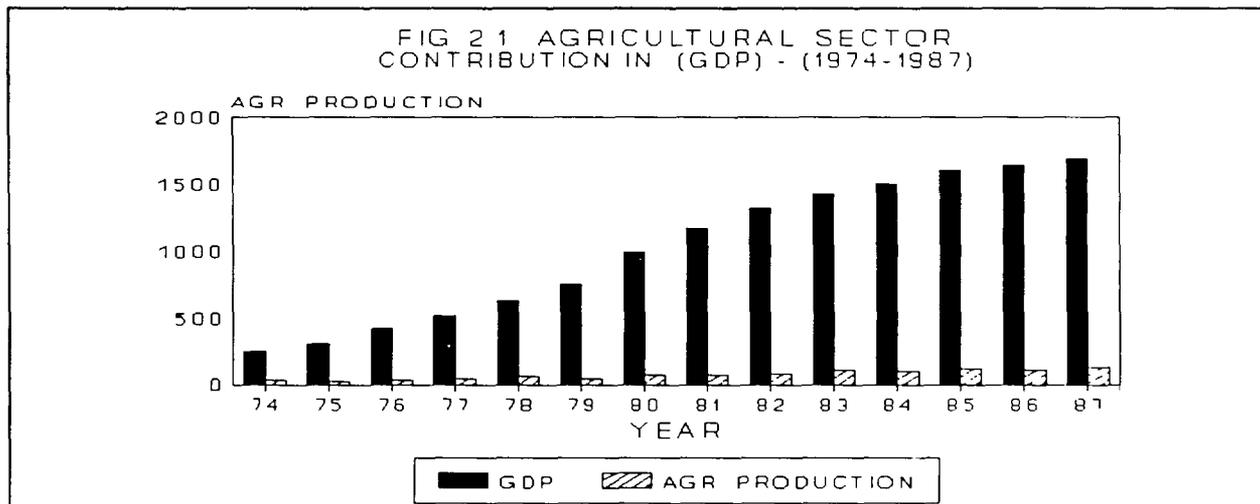
CHAPTER 2

THE ROLE OF FRUITS AND VEGETABLES IN JORDAN'S ECONOMY

As expected in a rapidly developing economy, the agricultural sector in Jordan has expanded rapidly. But in relative terms, agriculture has been contributing a declining share of gross domestic product. Agricultural exports too have grown, and are an important but declining percentage of total exports.

AGRICULTURAL CONTRIBUTION TO THE NATIONAL ECONOMY

During the last three decades the Jordanian economy has shown significant growth in all sectors. The Gross Domestic Product (GDP) has increased from JD 247.3 million in 1974 to JD 1686 million in 1987 - at current prices - (Figure 2.1).



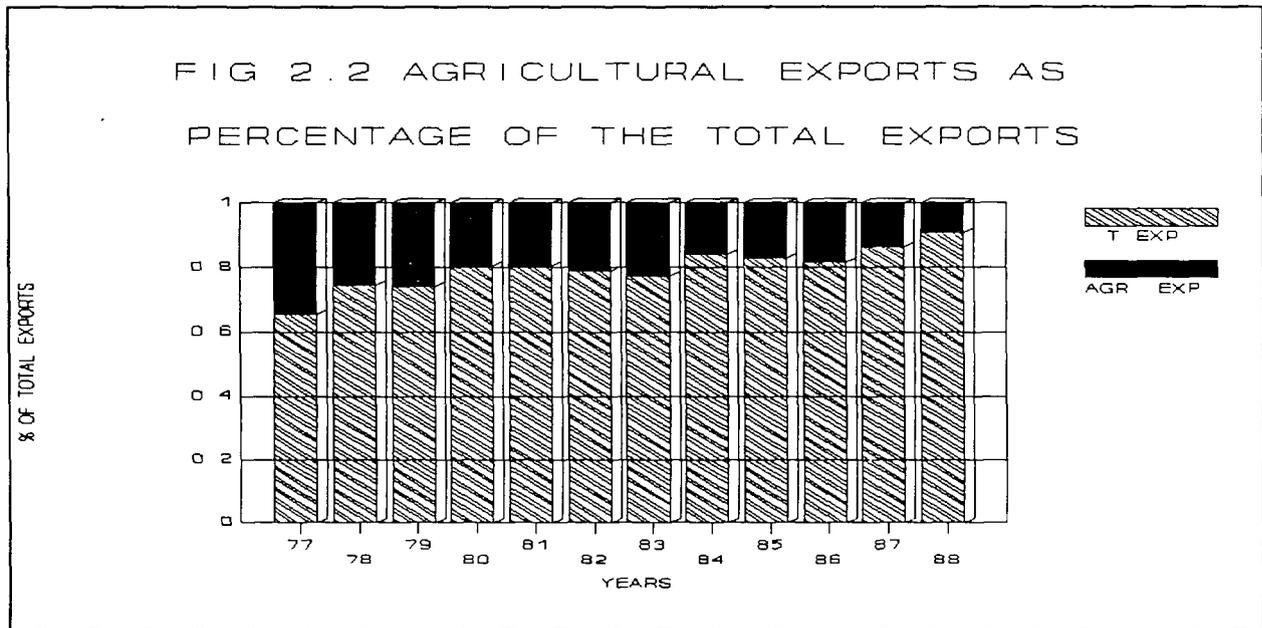
The agriculture sector was one of the sectors which achieved significant growth during this period. Agricultural production increased from JD 30.3 million in 1974 to JD 127.2 million in 1987 at - current prices - (Table 2.1)

Although agricultural production has increased, its proportional contribution to the Gross Domestic Product (GDP) has not. During the period 1974-1987 the highest percentage of contribution was 12% in 1974 and the lowest was 6% in 1982. (Table 2.1).

TABLE 2.1 - Agriculture's Contribution To The National Economy

YEAR	GDP (MILLION J . D .)	AGRICULTURAL CONTRIBUTION	AGRICULTURAL CONTRIBUTION IN GDP (%)
74	247	30	12
75	312	26	8
76	422	37	9
77	514	42	8
78	632	59	9
79	753	44	6
80	984	69	7
81	1164	75	6
82	1321	82	6
83	1423	110	8
84	1498	99	7
85	1606	119	7
86	1640	111	7
87	1686	127	8

Agricultural products are considered one of the most important domestic exports. Figure 2.2 shows that agricultural exports accounted for about one tenth of total domestic exports in 1988. Due to declining fruit and vegetable export volumes and rising non-agricultural exports, agriculture's contribution declined continuously from 1982 until early 1989, when the dinar devaluation produced a new surge of agricultural export growth.



AGRICULTURAL PRODUCTION PATTERNS

The Jordanian agricultural sector is characterized by scarcity of land and water resources. In 1980 the planted area was 3.1 million dunums, from which about 2.7 million dunums were rain fed only, representing about 87% of the cultivated area. The remaining area, about 371 thousand dunums, is irrigated land representing 13% of the cultivated area. Table 2.2 shows the fluctuations in planted rainfed areas during the period 1980-87 and the area planted each year to different cereals, fruit trees and vegetables. The most significant changes have been the increase in fruit tree plantings and the dramatic variations in acreage planted to cereals. It is believed that most of the new fruit plantings in rainfed areas are olives and grapes.

TABLE 2.2 - The Development Of Rainfed Areas In Jordan During 1980/87 (Dunums)

	1980	1981	1982	1983	1984	1985	1986	1987
WHEAT	1540	949	745	1094	410	925	497	1220
BARLEY	663	436	308	441	183	384	168	588
VEGETABLES	73	76	95	113	96	95	49	59
FRUIT TREES	289	306	354	372	371	408	466	468
OTHERS	170	125	116	191	82	138	124	228
PLANTED AREA	2735	1892	1618	2211	1142	1950	1304	2563

Source: Ministry of Agriculture

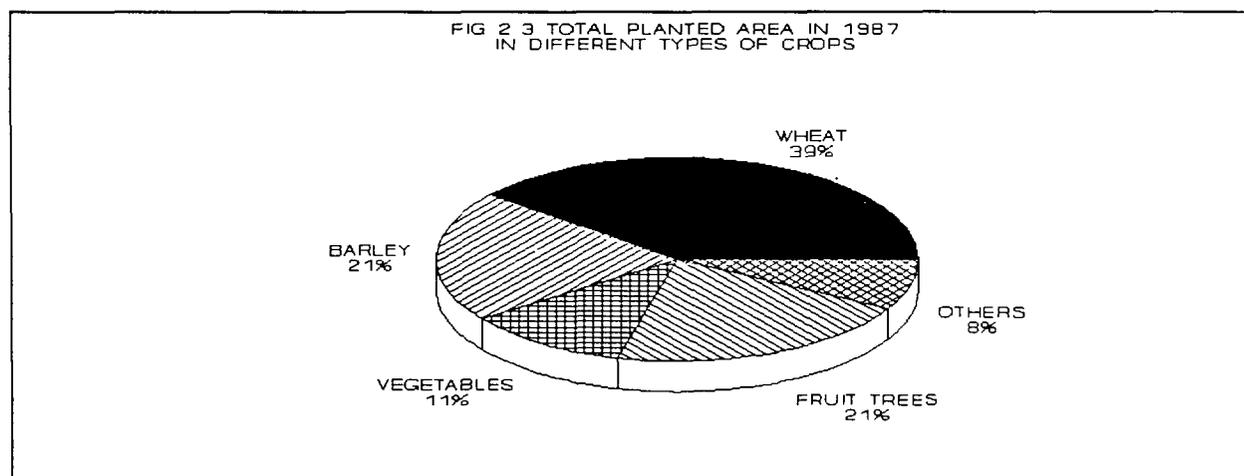
Table 2.3 presents similar data on irrigated land usage. Again the area planted to fruit trees has increased, while cereal production on irrigated land has declined. The bulk of those fruit tree plantings are apples with lesser amounts of stone fruit plantings. Irrigated land dedicated to vegetable production peaked in 1983 at 634,000 dunums and declined to 459,000 in 1987. That reflects government controls on planted area through the Cropping Pattern Program.

TABLE 2.3 - The Development Of Irrigated Areas In Jordan During 1980/87

	1980	1981	1982	1983	1984	1985	1986	1987
WHEAT	50	40	15	13	20	19	9	26
BARLEY	13	12	11	9	8	12	14	12
VEGETABLES	239	264	483	505	465	395	313	269
FRUIT TREES	69	71	101	107	117	147	148	152
TOTAL AREAS	371	387	610	634	610	573	484	459

Source: Ministry of Agriculture

Fruit and vegetables production increased from 934 thousand tons in 1980/1981 to 1,208 million tons in 1987/1988. Also during that period there was a rapid increase in the rate of adoption of advanced agricultural production technologies in agriculture such as drip irrigation, fertilizers, pesticides and plastic houses. In the case of plastic houses, the number increased from 8,690 in 1982 to 19,260 houses in 1986. Figure 2.3 depicts the total planted area (irrigated and rainfed) in 1987 in different types of crops.

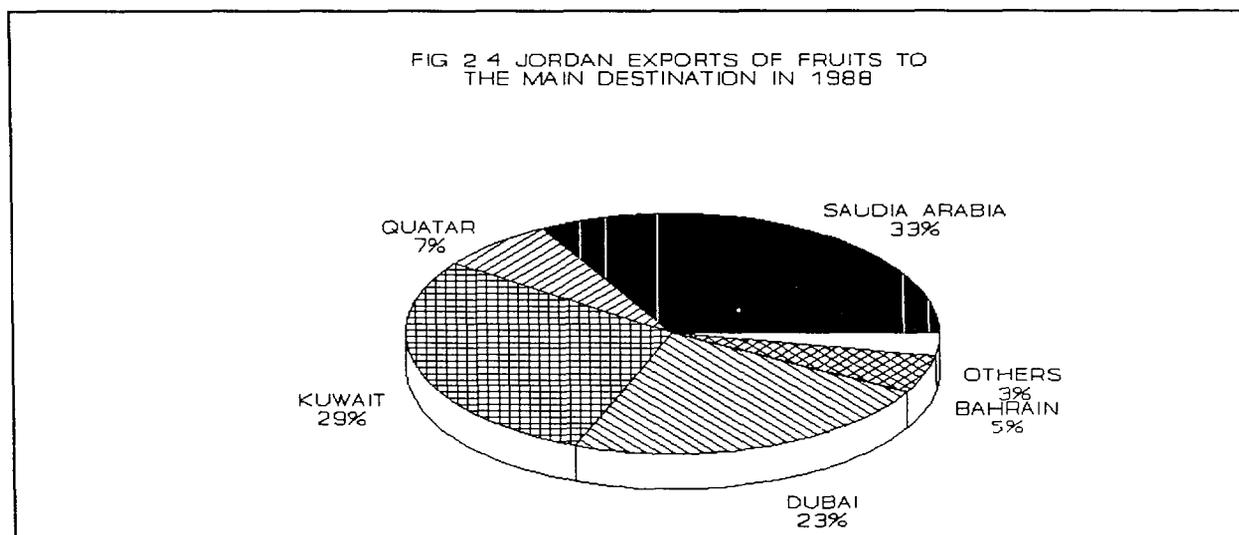


FRUIT EXPORTS

Jordan exports of fruits have decreased from JD 10.4 million in 1977 to JD 4.4 million in 1988. Grapes and lemons are the most important as a proportion of domestic produce exports. The other citrus fruit exports, especially oranges originated primarily in the West Bank and the Gaza strip and were exported through Jordan until October, 1988. Hence, the explanation for the dramatic drop in fruit exports is the political disengagement by Jordan from the West Bank.

Jordan fruit exports are mainly to the Gulf states. Figure 2.4 shows the proportion of the 86,000 tons of fruit exports going to each of the Gulf states in 1988.

Syria was one of the more important importers of Jordanian fruits up to 1982. In 1979 Jordanian exports to Syria reached 27,749 tons until Syrian government import restrictions caused a decline to almost nothing in 1988.

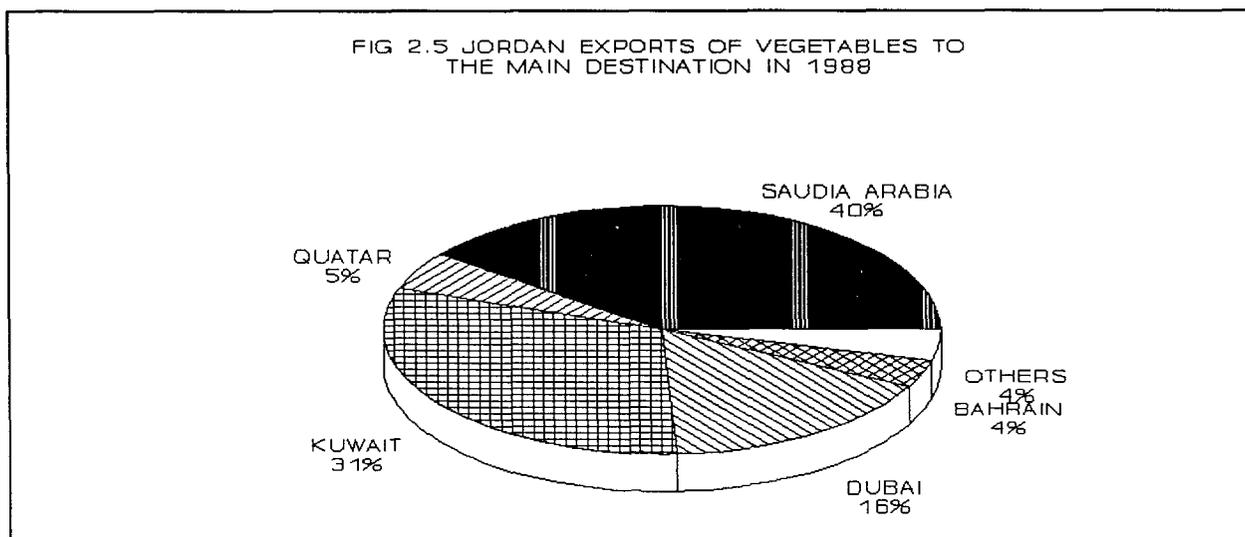


VEGETABLE EXPORTS

Jordan exports of vegetables increased from JD 6.7 million in 1977 to JD 15.2 million in 1988. Tomato is the most important vegetable export, representing an average of 25-30 percent of the total annual exports of vegetables. The next most important product is cucumber which showed a significant increase in exports during 1986 and 1987.

Jordan mainly exports to the Gulf countries and Lebanon. In 1988 the total volume of vegetable exports exceeded 282,000 tons. Figure 2.5 shows the proportion of vegetable exports to each country in 1988.

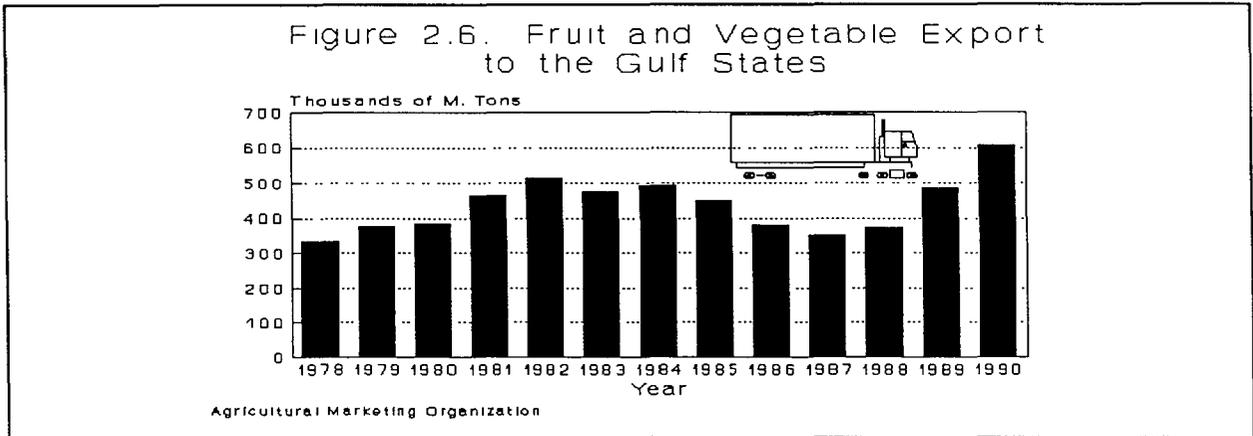
Between 1983 and 1987, Jordan vegetable exports fell by about 30 percent. In 1988 Jordan exports of vegetables increased to a level of 282,407 tons. Exports are up dramatically so far in 1989. The sharp drop in vegetable exports to Jordan's largest



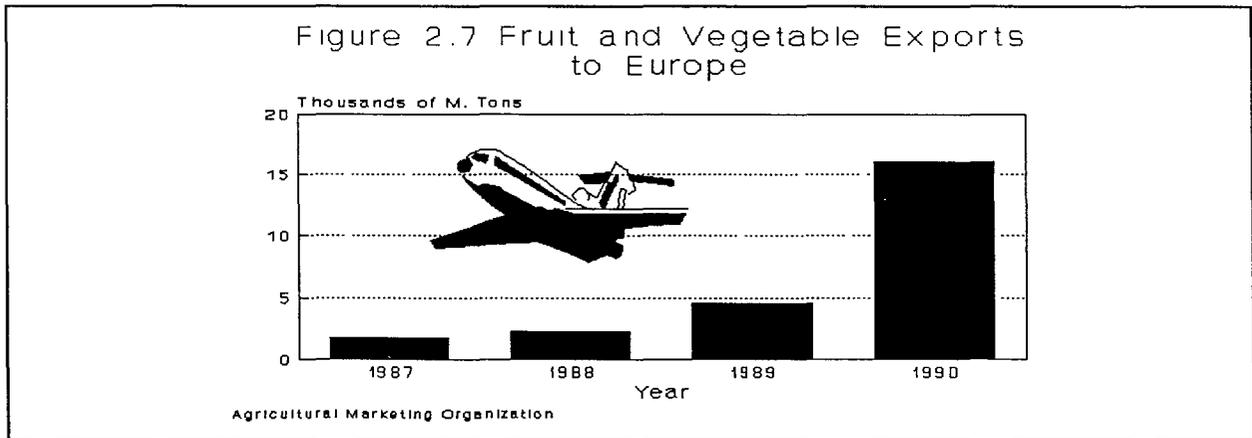
markets, Saudi Arabia and Kuwait, was caused by high prices of Jordanian products in comparison to domestic production and imports from other countries, especially Turkey. Jordan lost its competitive edge due to an overvalued dinar and due to slow adoption of product quality improvements in comparison with competitive suppliers.

RECENT AND EXPECTED CHANGES IN EXPORTS

Figure 2.6 shows the total volume of exports of both fruits and vegetables to Gulf markets for each year from 1978 to 1988 with projections for 1989 and 1990. The 1990 projection is, of course, open to question. It is based on the assumption that exports will increase by about 25 percent over the 1989 level. The dramatic increase in exports in 1989 is a response to the dinar's devaluation against Gulf state's currencies. It is difficult to predict how much increase can be expected in 1989, but it appears that Jordan's competitiveness against other Gulf states suppliers has been restored. Jordan's market share in Gulf states markets should continue to increase in 1990, but at a lower rate than the 39 percent registered thus far in 1989. An increase of 25 percent is considered reasonable.



Fruit and vegetable exports to Europe have been only a fraction of the volume exported to the Gulf states (Figure 2.7). The volume of exports was up in 1988 over 1987. And 1989 exports are expected to be nearly twice the 1988 level. The devaluation also dramatically reduced the cost of Jordanian produce for European buyers. Based on winter season export plans by several private companies, it appears that exports in 1990 could increase dramatically over 1989.



This chapter indicates that the agricultural sector suffered a significant decline in its relative importance during the mid to late 1980's when the dinar was increasingly overvalued against the currencies in its main export markets. The new economic policies have revived fruit and vegetable exports to Gulf states markets and have opened the opportunity for major fruit and vegetable exports to Europe.

CHAPTER 3

PURPOSE, OBJECTIVES AND METHODOLOGY OF THE STUDY

As noted in Figure 1.2 in Chapter 1, most fruits and vegetables are marketed through wholesale markets by farmers. It has been argued that there is collusion among commission agents and that other competitive imperfections result in abnormally high profits for certain intermediaries. It is also alleged that prices are not effectively communicated to farmers and retailers, resulting in pricing imperfections. The result of these competitive imperfections would be inefficient allocation of resources to meet consumer demand, poor communication of consumer preferences, unfair profits for some market participants at the expense of consumers and farmers, high food costs and lack of incentives to increase production through innovative production methods.

It may also be argued that the physical structure and management of wholesale markets is contributing to inefficient marketing practices. Certain operating policies may be contributing to inefficient price formation. Some of the wholesale markets in Jordan have become extremely crowded. There has been talk of plans to build a new wholesale market in Amman in order to relieve the pressure on an overcrowded facility near the center of the city. It is important to determine how well the current wholesale market is performing and to evaluate the need for a new facility.

The present study will examine these and other issues. As noted in Chapter 1, this is the first of two planned studies on the fruit and vegetable marketing system in Jordan. This study will be limited to an analysis of the structure, conduct, performance and pricing efficiency in fruit and vegetable wholesale markets. The next study will deal with operational, innovative and credit efficiency.

OBJECTIVES

The following are the major objectives of this study of fruit and vegetable wholesale markets in Jordan:

1. To describe the structure of wholesale markets in terms of the number of sellers, commission agents and buyers and to evaluate the degree of concentration of trade in the hands of a few intermediaries;
2. To describe the competitive behavior (conduct) of market participants with respect to potential unfair pricing practices, payment procedures and/or other behavior which might affect the economic performance of the markets;
3. To evaluate the price formation mechanism to determine if improvements might be made through government decrees or market management interventions which would improve the functioning of the market;
4. To evaluate pricing efficiency with respect to transparency of prices throughout the Kingdom.

SCOPE OF THE STUDY

The study considers the three most important wholesale fruit and vegetable markets in Jordan: Amman, Irbid, Zarqa and on Al-Arda which is the most important shipping point market in the Jordan Valley. The study focuses on farmers supplying those markets, the commission agents facilitating sales of farmers' products and the exporters and retailers being supplied from those markets.

RESEARCH HYPOTHESES

Several null hypotheses were identified to be tested. They are grouped below under headings coinciding with the objectives of the study, i.e. structure, conduct, price formation and pricing efficiency.

Structure of the Markets

1. There is significant effective market concentration in the hands of relatively few groups of closely knit commission agents and produce buyers;
 2. Only a small percentage of the produce is actually sold through a proper auction;
 3. Several licensed commission agents also function as produce buyers, a practice which causes them to bias the results of auction sales to their advantage as produce buyers;
 4. There is excessive concentration of buying power in the hands of a few exporters.
 5. Market rules and regulations do not encourage competition.
 6. There are significant barriers to entry for new commission agents and exporters.
 7. The structure of the marketing system has produced no incentive for farmers and/or intermediaries to properly grade, sort, package and handle the highly perishable products sold in the wholesale markets.
-

Conduct of Market Participants

8. Auction procedures do not assure fair and open price formation in response to true supply and demand conditions.
9. Selling periods are structured so as to scatter sales over a long time period each day giving commission agents and wholesalers an advantage over farmers and retailers.
10. Re-selling products in the market on the same day creates the image of abundant supplies and drives prices down artificially while benefitting commission agents and product buyers at the expense of farmers.
11. Overt or tacit collusion exists between some exporters, commission agents and wholesalers.
12. Among other consequences of the above conditions, there is discriminatory pricing, i.e., some buyers are able to purchase comparable quality produce at lower prices than others.

Price Formation

13. There is a serious shortage of objective and accurate information on supplies available or expected in the market and on prices. Wholesalers and exporters have more complete information than farmers and retailers.
 14. Export prices of middle eastern markets serve as the major reference point for wholesale prices in Amman and Amman serves as a major reference point for other wholesale markets in Jordan. Exporters have much more complete information on market conditions in export markets and therefore have a competitive advantage over farmers and retailers in Jordan.
-

15. The official retail price fixing process does not yield prices that consistently reflect supply and demand conditions in the markets and often lead to competitive distortions and to advantages for some market participants.

Pricing Efficiency

16. Fruit and vegetable markets in Jordan are not transparent, i.e. prices in any given wholesale market are not highly correlated with prices in other markets.

RESEARCH PROCEDURES

Collection of information for this study encompassed review of literature, analysis of secondary data, detailed observation of wholesale market operations and collection of primary data through sample surveys of farmers, commission agents and retailers.

Review of Literature

Several previous studies were reviewed as were annual reports of wholesale market authorities. The published rules and regulations of each market were analyzed. Finally, several general publications on Jordanian agriculture and on fruit and vegetable production and marketing were reviewed for useful information relevant to this study.

Secondary Data Collection

- (1) Wholesale prices from wholesale markets reports (daily, weekly, monthly, yearly).
 - (2) Retail prices from the Ministry of Supply (daily published reports).
 - (3) Local market volume from wholesale markets reports (daily, weekly, monthly, yearly).
 - (4) Volumes of exports from Ministry of Agriculture and from the Agriculture Marketing Organization.
-

Detailed Market Observation

Market observations were conducted in the four above mentioned markets of the behavior of market participants. At least, three tours were made in each market in an attempt to obtain accurate information. The observation guide reproduced in Annex II was utilized to facilitate systematic observations and to clarify what kind of information was needed.

Primary Data Collection

Farmers

Interviews were carried out with 112 fruit and vegetable producers. The representative sample of all fruit and vegetable farmers was drawn by randomly selecting from a larger sampling frame designed by the Department of Statistics. Where possible data from the Department of Statistics' larger sample were used for analysis in this report.

For the Jordan Valley, one half of the farmers were randomly selected from the Department of Statistics sample of 225 farmers out of a population of approximately 9,000 farmers. Table 3.1 shows the number of farmers in the Department of Statistics sample and the sub-sample for this study in each of the sub-divisions of the Jordan Valley.

TABLE 3.1 - Farmer Sample Size by Area in the Jordan Valley

Area	Estimated No. of Farms	Dept. of Statistics Sample Size	AMO Sample Size
Shouneh Shamalia	3500	74	35
Deir Alla	2500	54	27
Shouneh Junubieh	1500	55	27
Ghore Al-Safi	1500	42	23
Total	9000	225	112

For the highland area, a two-stage stratified random sampling procedure was used. The first stage consisted of randomly sampling clusters containing three villages. Twenty-two villages were selected in the first stage. In the second, stage 20 farm units were randomly selected from each cluster. Table 3.2 shows the sample size for the highland area.

Table 3.2 - Farmer Sample Size by Area in the Highlands

Area	No. in sample (Farmer)
Balqa	20
Zarqa	19
Irbid	19
Mafraq	20
Amman	20
Total	98

Commission Agents

The population used for the study was the number of commission agents in the three central wholesale markets included in the study: Amman, Irbid and Zarqa. The population of commission agents is shown in Table 3.3.

Table 3.3 - Commission Agent Sample Size (Census)

Area	No. of commission agent
Amman	56
Zarqa	18
Irbid	21
Total	95

Due to the small size of population of commission agents it was determined that the sample should be the population itself. During the interview process five commission agents in the Amman wholesale market could not be reached.

Retailers

The study of fruit and vegetable retail establishments was limited to the City of Amman. The population, its distribution and basic characteristics were determined to be contained in a list of retail establishments obtained from the Municipality of Greater Amman. This list consisted of all retail sales establishments within the metropolitan area and registered with the Municipality. A total of some 5,000 establishments was included. The information contained in the list included: (1) name of the establishment, (2) location by region of the metropolitan area, (3) major product groups handled by the establishment, (4) type of establishment, (5) establishment registration number, and (6) in some cases, a telephone number. The list did not contain street addresses.

A first level selection was accomplished from the list, of those establishments dealing in fruits and vegetables. This procedure resulted in a Population List of 1,654 fruit and vegetable retailers from which the survey sample would be selected.

In order to increase the probability of representativeness of the sample, it was determined that the population should be stratified. Three variables were available for this purpose.

First level stratification was accomplished by assigning to each of the 34 regions of the metropolitan area a code designating its relative economic level: (1) high, (2) middle, and (3) low. This classification was accomplished by AMO personnel using subjective knowledge of the regions.

The second level stratification was based on distance from the Amman Wholesale Market. Each region of the metropolitan area was coded according to its approximate distance, then they were grouped and re-coded into three categories: (1) five kilometers or less, (2) 6 - 10 kilometers, and (3) greater than 10 kilometers.

A third level of stratification was based on the type of establishment as determined from the original Municipality list. This classification included: (1) specialty shops (green grocers), (2) grocers, and (3) supermarkets. Table 1 in Annex III contains the codes for each level of stratification for each geographic area.

The combination of these three levels of stratification with three categories each produced a total of twenty-seven cells in the sample selection matrix. Each of these sub-populations had a known value of "N". These values are displayed in Table 2 of Annex III.

The following formula was applied to the values of Table 2 to calculate the sample size for each of the twenty-seven sub-populations:

$$n = \frac{Z^2 * P(1-P) * N}{Z^2 * P(1-P) + Ne^2}, \text{ where N is the size}$$

of the sub-population; Z is set at 1.96; P is set at 0.5; and e is set at 0.07. Table 3 in Annex III shows the results of these calculations.

These results were applied to the values in Table 2 in a manner to cluster the sample and, thereby, limit the number of Regions to be visited within each of the strata. The Regions selected, and the number of each type of establishment to be interviewed in each, are shown in Table 4 of Annex III.

Since the original list from the Municipality did not contain specific addresses for the establishments, nor did it include any other means for their location, the selection of the establishments within the selected Regions was left to the enumerator. The only limitation was that the establishments of a given type should be separated by not less than two hundred meters.

ANNEX II

WHOLESALE MARKET OBSERVATION GUIDE

- I. Observe level of market activity.

- II. Watch what is happening before selling starts.
 - A- Can you detect tacit sales agreements outside auction?

 - B- Physical handling.
 - 1) Are products stacked separately?

 - 2) Where are products stacked?

 - 3) How are they arranged?

 - 4) Can you determine why products are stacked as they are?

 - 5) What is the quality offered?

 - 6) Is there any sorting by size or quality?

- III. Observe inspection procedures.
 - A- Observe actions of wholesale market authority representative.

B- Does AMO representative inspect the product?

C- What are the criteria?

D- How much time is used?

E- What is the result? Is the product rejected?

F- If the product is rejected, what requirements are imposed?

IV. Select any truck and follow it through the market.

Repeat steps from item II but on an individual truck basis in more detail and depth.

V. Repeat as many times as possible but for different products.
(In Amman be sure to include at least one truck in the upper, i.e. export market yard).

Same as item IV.

VI. In between times make general market observations. (In Amman, be sure to observe both upper export and lower market yard).

A- Attend and observe auctions.

1) Does price vary over time and quality?

2) How many participants at each auction?

3) Does auctioneer stop auction even though evidence suggests price might go higher?

B- Look at relationship among participants in the market, i.e. commission agent himself, auctioneer, trucker, retailer, exporter, wholesale market authority representative.

C- Can you determine who are the major buyers at different times (i.e., retailers or exporters)?

D- Are prices lower for larger lots?

E- Is there evidence of re-selling?

F- Do buyers have some advance information on quantities, qualities and prices expected in the market today?

G- Can buyers predict what prices will be today? How?

H- How does the announced "fixed" retail price for today affect the wholesale price today?

I- How does the export market price affect the wholesale market price today?

J- Is there some evidence that when prices are high in the upper yard that exporters collude to not buy in order to force products to go to lower yard?

VII. Observe price fixing committee meeting.

A- What criteria do they use?

B- What is the procedure?

C- Does one participant dominate?

D- When do they fix the price?

E- Based on what information?

ANNEX III

TABLE 1. CODING OF GEOGRAPHIC AREAS BY DISTANCE
FROM CENTRAL WHOLESALE MARKET AND
GENERAL INCOME LEVEL

AREA NUMBER	DISTANCE		INCOME LEVEL CODE
	KILOMETERS	CODE	
1	2	1	2
2	2	1	2
3	2	1	3
4	4	1	2
5	4	1	2
6	4	1	3
7	5	1	1
8	5	1	2
9	5	1	3
10	6	2	3
11	6	2	3
12	7	2	2
13	7	2	2
14	7	2	2
15	7	2	3
16	8	2	3
17	8	2	3
18	9	2	2
19	10	2	2
20	10	2	2
21	10	2	3
22	12	3	1
23	12	3	2
24	13	3	2
25	15	3	1
26	15	3	2
27	17	3	1
28	17	3	2
29	20	3	1
30	20	3	2
31	20	3	3
32	23	3	2
33	25	3	2
34	30	3	2

Table 2. NUMBER OF ESTABLISHMENTS BY INCOME GROUP, DISTANCE FROM THE CENTRAL WHOLESALE MARKET AND TYPE OF ESTABLISHMENT - AMMAN GREATER METROPOLITAN AREA, 1989

Group Number	Income Level Code	Distance		Number of Establishments			
		Code	Kms.	Special	Grocery	Supermkt	Total
1-1	1	1	<6	45	46	4	95
1-2	1	2	6-10	-	-	-	-
1-3	1	3	>10	27	26	17	70
2-1	2	1	<6	259	103	1	363
2-2	2	2	6-10	107	130	1	238
2-3	2	3	>10	97	190	10	297
3-1	3	1	<6	266	63	-	329
3-2	3	2	6-10	153	105	1	259
3-3	3	3	>10	-	1	2	3
Total				954	664	36	1654
----- Summary by Income Level Group -----							
1--				72	72	21	165
2--				463	423	12	898
3--				419	169	3	591
Total				954	664	36	1654
----- Summary by Distance Group -----							
--1				570	212	5	787
--2				260	235	2	497
--3				124	217	29	370
Total				954	664	36	1654

Table 3. NUMBER OF CASES TO BE INTERVIEWED

Group Number	Income Level Code	Distance		Number of Establishments			
		Code	Kms.	Special	Grocery	Supermkt	Total
1-1	1	1	<6	6	8	3	17
1-2	1	2	6-10	-	-	-	-
1-3	1	3	>10	6	5	6	17
2-1	2	1	<6	7	6	1	14
2-2	2	2	6-10	8	7	-	15
2-3	2	3	>10	7	7	4	18
3-1	3	1	<6	8	4	-	12
3-2	3	2	6-10	10	6	-	16
3-3	3	3	>10	-	1	2	3
Total				52	44	16	112
-----Summary by Income Level Group-----							
1--				12	13	9	34
2--				22	20	5	47
3--				18	11	2	31
Total				52	44	16	112
----- Summary by Distance Group -----							
--1				21	18	4	43
--2				18	13	-	31
--3				13	13	12	38
Total				52	44	16	112

TABLE 4. NUMBER OF ESTABLISHMENTS TO BE INTERVIEWED
BY GEOGRAPHIC AREA

Group Number	Income Level Code	Distance		Number of Establishments			Total
		Code	Kms.	Special	Grocery	Supermkt	
1	2	1	2	2	1	-	3
2	2	1	2	2	2	-	3
3	3	1	2	4	2	-	6
4	2	1	4	1	1	-	2
5	2	1	4	1	2	1	4
6	3	1	4	2	2	-	4
7	1	1	5	6	6	3	15
8	2	1	5	2	1	-	3
9	3	1	5	1	2	-	3
10	3	2	6	1	1	-	2
11	3	2	6	1	1	-	2
12	2	2	7	1	1	-	2
13	2	2	7	2	2	-	4
14	2	2	7	1	1	-	2
15	3	2	7	1	2	1	4
16	3	2	8	1	-	-	1
17	3	2	8	1	2	-	3
18	2	2	9	2	2	-	4
19	2	2	10	-	-	1	1
20	2	2	10	1	1	-	2
21	3	2	10	2	1	-	3
22	1	3	12	2	4	-	6
23	2	3	12	1	1	1	3
24	2	3	13	-	-	-	-
25	1	3	15	4	1	2	7
26	2	3	15	1	1	1	3
27	1	3	17	-	1	3	4
28	2	3	17	3	3	-	6
29	1	3	20	-	-	-	-
30	2	3	20	1	1	1	3
31	3	3	20	-	1	2	3
32	2	3	23	1	1	1	3
33	2	3	25	-	-	-	-
34	2	3	30	-	-	-	-
Total				47	47	17	111

CHAPTER 4

WHOLESALE FRUIT AND VEGETABLE MARKETS IN JORDAN

Wholesale markets are considered an important component in the marketing channel. Large quantities of produce are exchanged between buyers and sellers in the wholesale market places of Jordan, necessitating the provision of certain facilities to receive, safeguard, store and sell the produce.

Three major types of fruit and vegetable wholesale markets have been identified:¹

1. **Central Wholesale Markets** are usually found in big cities where different services are available, such as financing, communications, advanced transport and establishments that could serve the marketing process. Such markets receive large quantities of commodities from farmers or shipping point markets, for sale to retailers and/or exporters. Amman has the only central wholesale market in Jordan.
2. **Secondary Wholesale Markets** (sometimes called "shipping point markets in the United States) sell the raw materials required by wholesalers and/or processors. Exporters may also purchase product in these markets. The sellers are usually but not always farmers. Al-Arda is the only significant market of this type in Jordan.
3. **Jobbing Markets:** receive commodities from central markets and distribute them to retail markets. Some services, e.g. grading, packaging and storage, are offered by those markets but on a limited basis. The markets in Irbid, Zarqa, Salt and other larger Jordanian cities fit in this category.

¹ Shabaneh, Zaki, *Agricultural Marketing*, Dar Al Iskandaria, 1962, and Mahmoud Al-Shafi', *An Introduction to Agricultural Economics*, Dar Al Aqsa, 1986.

Wholesale fruit and vegetable markets fulfill four main functions:

1. A physical location is provided so that buyers and sellers can come together to negotiate the exchange of products. Some grading, packing and storage facilities may be provided. Market participants are able to obtain price and quantity information by direct observation or it may be provided by the market management or by a government agency.
2. Retailers, restaurants and sometimes consumers are able to efficiently accomplish "one stop shopping" for all fruit and vegetable needs. The existence of a wholesale market may prevent circular distribution and reduce expenses relating to exchange operations between the producer and consumer.
3. Statistical information can readily be collected in the market regarding product varieties, quantities, prices, grades, containers, transport methods, supply sources and exchange among various markets. Such statistics help to improve the marketing plans of market participants and by government agencies.
4. The wholesale market can perform the function of efficient price formation.²

HISTORICAL BACKGROUND OF WHOLESALE MARKETS IN JORDAN

The first wholesale market in Jordan was set up in Amman in 1935.³ All marketing functions in the market were performed by private commission agents and retailers. After 1948, as a result of rapid population growth, expansion of supply and demand, and improvements in the road network, the old wholesale market became increasingly inadequate. Accordingly, a new market was constructed in 1951. By that time the following developments were changing the nature of activities in the market: (1) intermediaries were becoming increasingly specialized by function, (2) the number of

² Abbot, J.C., *Marketing of Fruits and Vegetables*, FAO, Rome, 1976.

³ Shirbeeni, Abdul-Aziz, *Economic Studies on Vegetable and Fruit Markets*, Agricultural Marketing Center of the U.N., Amman, 1968.

commission agents was increasing, (3) the number of retailers and wholesalers was also increasing, (4) retailers were increasingly setting up fruit and vegetable stores in the residential areas with occasional trips to the wholesale market for supplies, and (5) all of the market participants were beginning to recognize the need for market information.

The operation of the new market was not significantly different from the old market. Products arrived from farms in the very early morning hours. Farmer sales, through commission agents, or to wholesalers was completed by 7:00 a.m. when retailing would begin. Retail sales were permitted in the market up to 7:00 p.m..

The increase in production and demand as well as improvements in the road network had contributed, with the passage of time, to consolidating the commission agent's role. By providing finance, the commission agent was able to oblige farmers to allow him to sell their produce. However, he took no risk in marketing the goods and his contribution to market development was somewhat limited. The government was concerned with improvements in the marketing system but middlemen were (understandably) unwilling to collaborate in the development of marketing system changes without knowing how such changes might affect the profitability of their businesses.

The year 1966 was a milestone in the development of the fruit and vegetable marketing system. In that year a decision was made to build a new Central Wholesale Market in a new location in Amman. The decision was based on the necessity of constructing a modern market that would provide certain facilities and services (e.g. cold storage), with official management, in a location far from crowded areas in the city center. Most of all, the government wanted to separate the retail and wholesale functions. Middlemen resisted the change of location and announced a general strike, while commission agents abstained from selling their clients' goods. It was evident that the new market had impeded the middlemen's interests and had prevented commission agents from buying goods from retailers, thus increasing the risks of collecting their debts. Wholesalers were adversely affected, as they were no longer in touch with the retail market news that is vital for their trade practice. Retailers also had to pay extra transport expenses, from the new site to their stores.

Two main regulations were enunciated in 1966:

- * Regulation No. (14): " The Central Wholesale Market of Vegetables and Fruits in Amman".
- * Regulation No. (59): "Vegetable and Fruit Wholesale Markets", according to which wholesale markets were later set up in Zarqa (1966), Irbid (1968), Jerash (1974), Tafileh (1979), Salt (1984), Karak (1986) and Mafraq (1988).

The old wholesale markets of Irbid and Zarqa, like the old Amman market, were located in relatively congested areas in the city center. Contrary to the provisions of Regulation No. (59), neither the Irbid nor the Zarqa wholesale market had the benefit of competent independent administration by the authorized municipalities. The inherited difficulties prevented those wholesale markets from assuming their duties, as referred to in the above Regulation, and minimized their effectiveness in improving the marketing system for fruits and vegetables.

WHOLESALE MARKETS IN THE KINGDOM

With reference to Regulations No. (14) and No. (59) / 1966, issued according to Article (41) of the Municipalities Law No. (29) of 1955, there are 2 types of wholesale markets in the Kingdom:

1. **Central Wholesale Markets:** subject to Regulation No. (14) of 1966. There is one Central Wholesale Market in Amman.
 2. **Wholesale Markets:** subject to Regulation No. (59) of 1966.
-

There are 7 markets in Jordan, according to the year of establishment⁴:

- * Vegetable and Fruit Wholesale Market in Zarqa - 1966
- * Vegetable and Fruit Wholesale Market in Irbid - 1968
- * Vegetable and Fruit Wholesale Market in Jerash - 1974
- * Vegetable and Fruit Wholesale Market in Tafileh - 1979
- * Vegetable and Fruit Wholesale Market in Salt - 1984
- * Vegetable and Fruit Wholesale Market in Karak - 1986
- * Vegetable and Fruit Wholesale Market in Mafrqa - 1988

In addition to the above two types, there are other markets that are not subject to the two Regulations which are referred to as "local wholesale markets" (found in production areas).

3. Local Wholesale Markets (all in production areas):

3.1 Wholesale markets established by the Jordan Valley Authority and currently affiliated with the Agricultural Marketing and Processing Company (AMPCO). Al-Arda Market only functions as a wholesale market. Those markets include centers that receive the farmers' products (previously agreed upon). Similar centers are found in Wadi Al-Sir (unfit to be a wholesale market) and northern Shouneh.

- * Wadi Al-Yabes Market - northern Shouneh
- * Al-Arda Market - middle Ghore
- * Southern Shouneh Market - middle Ghore
- * Al-Safi Market - southern Ghore

3.2 Seasonal wholesale markets in some production areas:

These are unorganized stores managed by some commission agents or their representatives. There are only 2 such markets:

⁴ Establishment means the year when the market became subject to Regulation No. (59) and not the construction of the existing market.

- * Baqa' Market - Baqa'
- * Karameh Market - middle Ghore

MARKETING SERVICES AT WHOLESALE MARKETS

1. **The Central Wholesale Market in Amman** facilitates the functions of selling and buying. An 800-ton-capacity refrigerator (inoperative as of January 1, 1988) and a banana sweat room are available as part of the market infrastructure. Daily market price and quantity statistics are collected in the market by the market management.
 2. **Wholesale Markets in Zarqa, Irbid, Jerash, Tafileh, Salt and Karak** facilitate the functions of selling and buying. Irbid Market contains a cold-storage warehouse with an overall capacity of 2,160 tons, while that of Zarqa holds 4,000 tons. The Irbid facility is seldom used while the Zarqa cold-storage facility is fully rented by the Jordanian Cooperative Society for Egg Production and Marketing. Banana sweat rooms are found in both markets. Basic statistics on daily market quantities and prices are collected in the market by the market management.
 3. **Markets of the Agricultural Marketing and Processing Company (AMPCO) in Al-Arda, Al-Yabes, Southern Shouneh and Al-Safi:** All, except Al-Arda, function as collection centers for the Company. Al-Arda Wholesale Market includes a cold storage (capacity of 1000 tons) for storing potatoes and tomato paste barrels. AMPCO has fruit and vegetable grading and packing equipment at Al-Arda, South Shouneh and Al-Safi. The capacity of each of those installations is about 10 tons/hour and is for the exclusive use of the company. AMPCO also owns a wooden box factory which was transferred to southern Shouneh in 1986. No market data is collected in any of these market facilities.
 4. **Baqa' and Karameh Markets** serve only as a buying and selling point with no other market services. There is no market data collection in either market.
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It is clear that the marketing services of the Kingdom's wholesale markets are restricted to:

- a. Selling and buying activities;
- b. Cold-storage facilities in four markets with a total capacity of about 7,000 tons; None of that cold-storage is currently used for fruits and vegetables. The units in Amman, Irbid and Al-Arda are not in use and the 4,000 ton facility in Zarqa is rented for egg storage;
- c. Banana sweat rooms in Amman, Irbid and Zarqa;
- d. Market activity statistics (quantities and prices only);

PROBLEMS OF WHOLESALE MARKETS

The Kingdom's vegetable and fruit wholesale markets suffer from certain drawbacks, due to the absence of agricultural marketing planning.

Organizational and Administrative Structure

There are several weaknesses related to the way in which the government has dealt with the establishment of wholesale markets in the Kingdom. The main weak points are:

1. The absence of a central independent board to supervise the establishment of markets and the preparation of their fundamental regulations, in addition to managing, developing, planning and controlling their activities. Even though the Wholesale Markets Regulation of 1966 stipulated that wholesale markets are "an administrative unity emanating from the municipality and linked with it", the Ministry of Municipal and Rural Affairs has no Markets Division.
 2. Poor coordination among the departments and establishments that were entrusted with various aspects of wholesale market development and operation. Those responsibilities are currently spread, almost randomly, among the Ministries of
-

Agriculture and Municipal and Rural Affairs, Amman and other municipalities and the Agricultural Marketing Organization (AMO).

3. Some municipalities (Irbid and Zarqa) authorize contractors to act as market managers (thus taking the risk of not making a profit and getting the profit when there is one). Municipalities resort to this arrangement when their financial resources and administrative capacity is extremely weak. They also believe that the contractor is far more competent than the ordinary employee to collect market use fees.

Operational Problems

Wholesale markets in the Kingdom are facing significant operational problems. Most can be traced back to ineffective government policies. The following are observations by the research team:

1. When the present wholesale markets were being planned there was no clear long-term policy for those vital marketing facilities. In retrospect the Kingdom needed a long term plan based on expected evolution of the marketing system as discussed in Chapter 1. Such a plan could have enhanced the wholesale markets preparedness for future developments at the production and marketing levels. That could have prevented some of the confusion which has arisen as a result of unplanned reaction to those developments.
 2. There were several weaknesses in the design and construction of the markets:
 - a. Market locations, especially in the case of Amman, was not far enough from the city center.
 - b. The market areas were insufficient for any future expansion.
 - c. The organization of the markets (entrance and exit included) did not realistically meet wholesale market requirements.
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- d. Parking lots were too small.
 - e. Sanitary facilities were not provided.
 - f. Awnings to protect the agricultural produce were not provided.
3. The major function of wholesale markets has been to provide a central location for selling and buying fruits and vegetables; a location where prices can be determined on a daily basis with all participants having access to the same information on supply and demand forces. Little effort has been made to effectively provide other marketing services, e.g. grading and packing facilities, refrigeration, protection from rain and sun damages, systematic collection and immediate dissemination of market information. It is probably uneconomical for the wholesale market to provide grading, packing and refrigerated storage facilities. In most market economies, the private sector can most efficiently provide those facilities. The refrigeration facilities in Amman and Irbid have, in fact, not been used, probably because they do not fit the needs of the marketing system. But the wholesale markets should provide protection for products from the weather elements and the collection and dissemination of market information is a function that the market could perform or facilitate.
4. The markets have not fully implemented the pertinent regulations, thus minimizing their role and diverting them from fulfilling the desired goals. The main violations have been:
- a. Most markets do not have administrative boards, with the exception of Amman. The municipal board has not replaced the absent administrative board, as provided in Regulation No. (59). In some cases, unauthorized and incompetent employees manage the markets while contractors collect the market fees.
 - b. All markets (except Amman) lack internal regulations. Consequently, the market employees, contractors and even the municipalities have been free to interpret the regulations according to their personal interests.
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- c. There has been a failure to control the selling and buying processes, in accordance with effective market regulations, to achieve equity for buyers and sellers and to collect information on quantities sold and their prices. This is apparent in the disorganized selling periods and auction sales.
5. The failure to abide by the market regulations and to control their activities has led to the following negative results:
 - a. Some municipalities have lost a portion of their financial resources from the market. It has, therefore, been difficult to set up a special board to control market activity. Conditions in the markets have remained unimproved and the market situation has, in fact, become worse.
 - b. Farmers, who receive little objective and timely market information, have sometimes been the victims of fraud and injustice.
 - c. Commission agents, as a consequence of their central position in the marketing channel, have access to more complete market information than other participants and use it to enhance their profits at the expense of farmers, retailers and consumers.
6. The government has not collected accurate statistics on market activities e.g product types, quantities, prices, quality specifications, containers, supply sources and trade among different markets. The absence of that kind of accurate information has not only hampered day to day marketing decisions but has made it difficult for both government and private decision-makers to formulate marketing plans.
7. A final negative element has been the lack of effective competition in the wholesale markets of the Kingdom. Influential commission agents appear to have been able to restrict entry of new competitors and the market has been deprived of the social and economic benefits of active competition among market participants.

These and other issues will be examined further in the next three chapters of this report.

CHAPTER 5

MARKET STRUCTURE

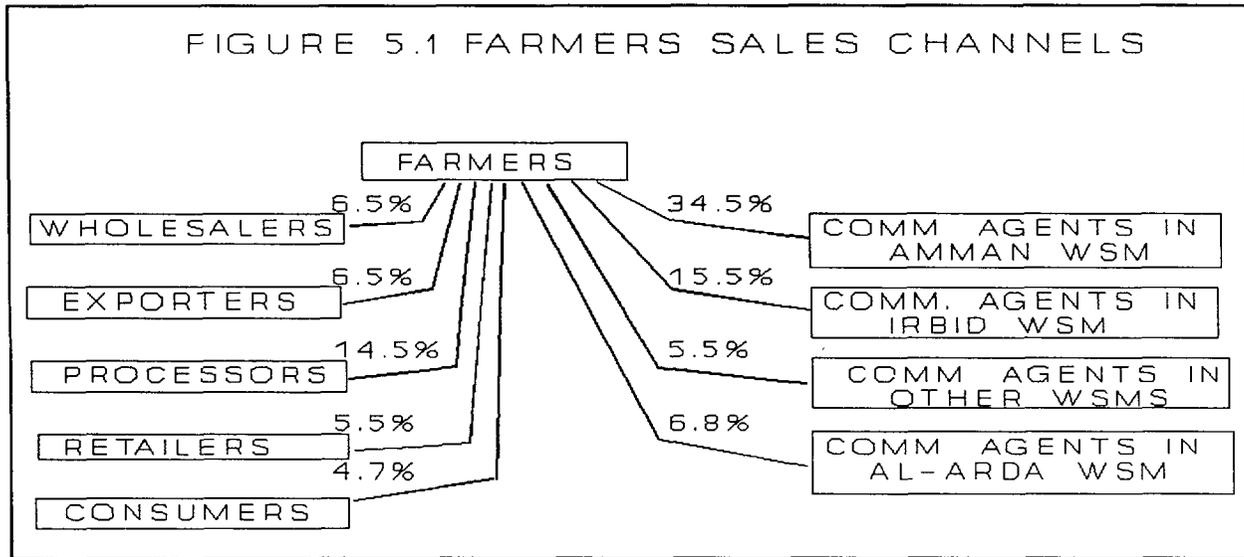
An efficient marketing system provides efficient and economical services and ownership transfer in the movement of commodities from seller to buyer. Also it provides an effective price making mechanism.

As noted in the first chapter, one way of evaluating marketing efficiency is through the study of market structure and business behavior (i.e. conduct) with analysis of the impact of those issues on market performance.

Market structure could mean those characteristics of the organization of a market that seem to exercise strategic influence on the nature of competition and pricing within the market. Dimensions of market structure usually are buyer and seller concentration, product differentiation and barriers to entry.

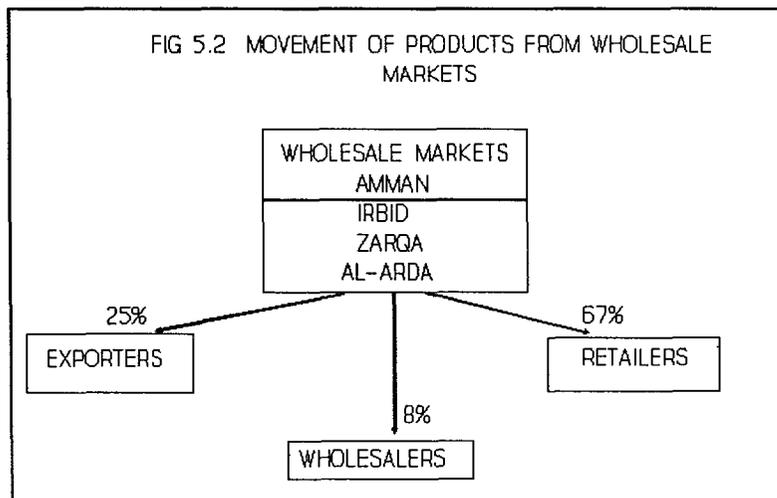
MARKET PARTICIPANTS AND CHANNELS

Fruits and vegetables are produced on thousands of farms in the Jordan Valley, the highlands and in desert areas. Several types of intermediaries have evolved to smooth the flow of those products to consumers in Jordan, the Gulf states and to Europe. Figure 4.1 depicts the marketing channels. The most important initial delivery points are the four wholesale markets covered in this study, with 60 percent of farm sales going to commission agents in Amman, Irbid, Zarqa or Al-Arda. However, the remaining 40 percent is sold directly from the farm to wholesalers (6.5%), exporters (6.0%), processors (14%), retailers (5.5%) and consumers (4.2%). The percentage of direct sales to processors is much too high given the number of processors and their known volume. Farmers probably misunderstood the question. The percentage of sales to exporters is higher than expected, but is known to be increasing.

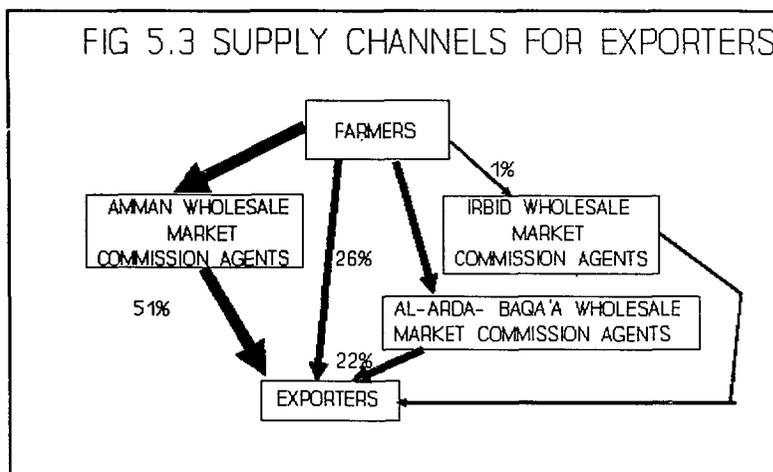


While the Amman wholesale is the most important single location for the farmers to sell their fruits and vegetables, the percentage (34%) is surprisingly low. About 25% of the products move directly from farms to Irbid, Al-Arda or Zarqa wholesale markets.

Farmers' products are consigned to commission agents in the wholesale markets who facilitate the sale to buyers. In general, commission agents do not take title to the product, nor do they provide any other physical marketing service. However, some commission agents do provide credit to farmers in exchange for the guarantee that the farmer will deliver his products to them. And in some cases the commission agent becomes a wholesaler by purchasing products for his own account to be exported or sold to retailers.



Exporters purchase the highest percentage of their product requirements (about half) through commission agents in the Amman market, though a few purchase in Irbid. The percentage of product purchased directly at the farm or at the Al-Arda market is significant and will undoubtedly increase. All exporters to Europe take the product directly from the farm. In the future, to improve product quality through sorting, grading, pre-cooling, improved packaging and more careful



handling, it will probably be necessary for all exporters to purchase products directly from the farm or in a shipping point market like Al-Arda. Direct pre-harvest contracts between farmers and exporters is likely to be the exchange mechanism, though there is no evidence that pre-harvest contracting is important at this time.

ANALYSIS OF CONCENTRATION AMONG SELLERS

As noted in Chapter 1, the perfect market in neo-classical economic theory is one where there are so many buyers and sellers of a given product that no single market participant can individually influence the market price by his behavior. On the other hand, it has been observed that over time, economies of scale, specialization and routinization, as well as differences in management capability, are likely to lead to a reduction in the number of competitors. There is no clear rule as to the minimum number and size distribution of firms required to produce "fair" competition in a given market. Joe Bain has offered some guidelines which can be used to help the researcher in forming a judgement of the degree of competition in a particular situation.¹ Those guidelines have been considered in the following, along with other observations by the researchers.

¹ Bain, Joe, op. cit.

Farmers

There are several thousand farms producing fruits and vegetables, mostly on irrigated land. Those farms are mainly concentrated in the Ghore areas, Northern desert, and the highlands around Jarash and Amman. So as to relate the farmers' location with the wholesale markets, six production areas were defined, i.e, Irbid, Mafraq, Amman, Baqa' and Zarqa.

A little less than half of the fruit and vegetable producers in Jordan own the land and personally manage the farming operation. That means that about half of the production comes from farms that are rented by the operator from some other owner. This high percentage of absentee ownership is probably caused by the land tenure laws applied in the Ghore since 1973. Those laws limited the land granted to a single individual to 30-45 dunums. It is well known that many individuals circumvented that limitation by obtaining land in the names of children and other relatives. As a consequence there is a lot of land owned by other than those actually farming it. To confirm that, the farmer survey showed that in the Ghore area about 30 percent of the farms are owned and operated by the farmers themselves, while in other areas there were no responses to the type of tenancy question.

There are thirteen types of partnership conditions practiced in Jordan. The most common arrangement (about 26 percent of the farms) is one where the owner provides the land, water, land preparation, and 50% of the fertilizer, with the farmer paying all other costs and J.D. 25 per dunum per year as cash rent. The revenues are then divided equally between the owner and the farmer. This type of tenancy is practiced only in the area of Amman and Zarqa.

The second most common arrangement (about 13 percent) is one in which the owner provides the land and half of the other costs, with equal division of all revenues. This arrangement is practiced mainly in Baqa', the Ghore and Irbid.

Because of the nature of farming, there are usually large numbers of producers of a particular product. That appears to still be the case in Jordan. However, there is only one large producer of strawberries in the Jordan Valley and some other products are

dominated by only a few producers. Nevertheless, there appears to be no reason for concern for monopolistic behavior at the farm level.

Commission Agents

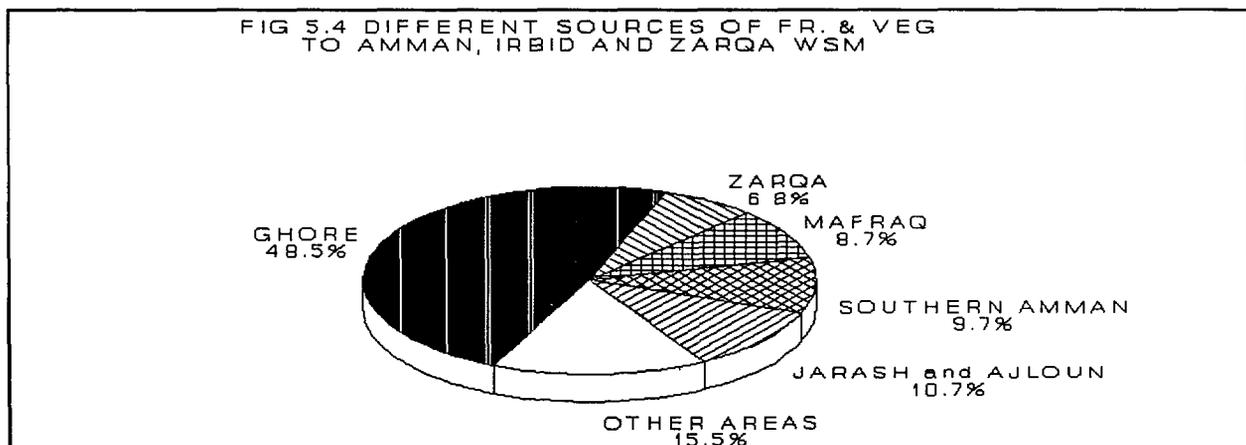
The research team interviewed 92 commission agents (C.A.) distributed in the three main wholesale markets.

Out of the 55 C.A. in Amman wholesale central market , 49 were interviewed. Three of them have another office in Zarqa central market, one in Irbid and one in another market. The rest have offices in Amman only. Five of the C.A. specialize in a limited number of products while the rest sell any type of fruit or vegetable delivered to the market.

In the Irbid wholesale market 28 commission agents were interviewed, two of them also have offices in Al-Arda, while the rest have offices in Irbid only. All indicated a willingness to take delivery of any type of fruit or vegetable.

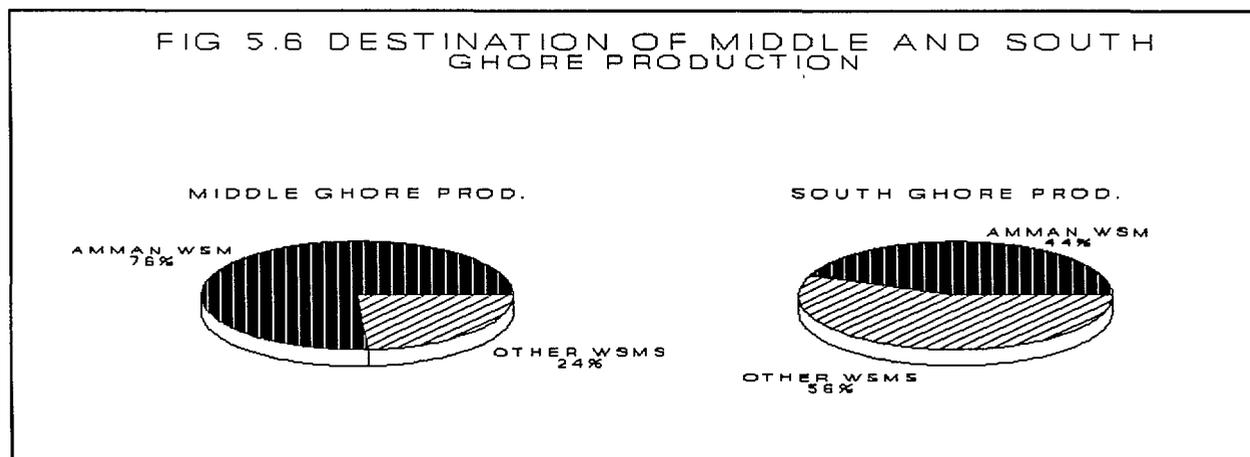
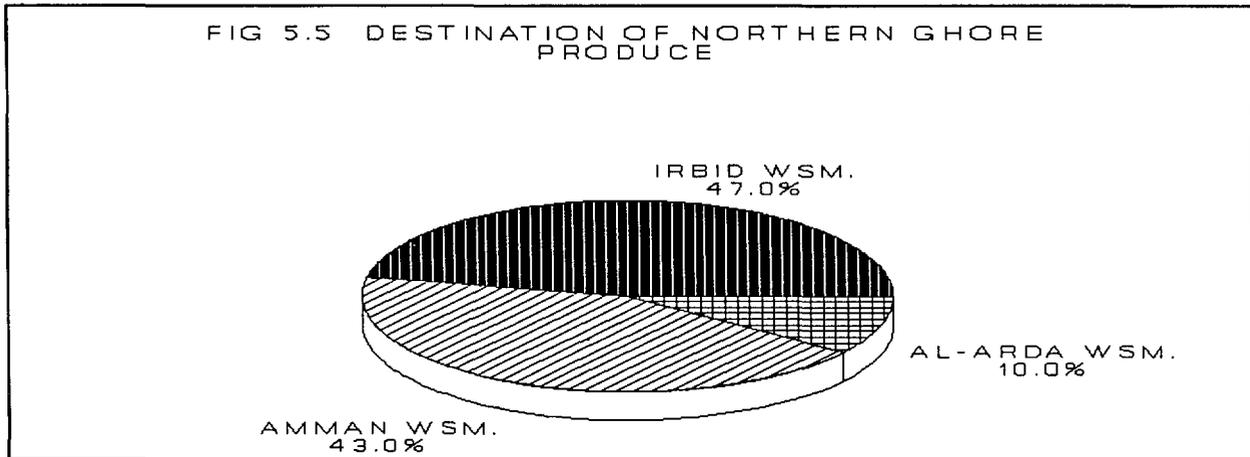
Fourteen C.A in Zarqa, have offices in Zarqa market, and one of them has another office in Amman. All are willing to market any product on behalf of clients.

About half of the produce delivered to the three wholesale markets in Amman, Irbid and Zarqa comes from the Ghore area. Jarash and Ajloun produce constituted about 11



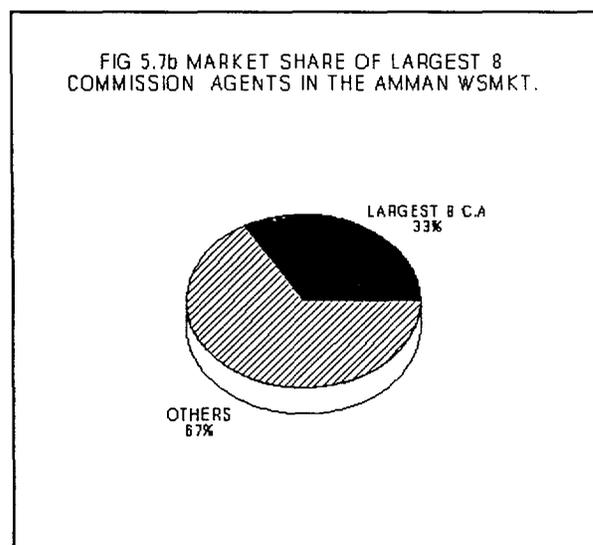
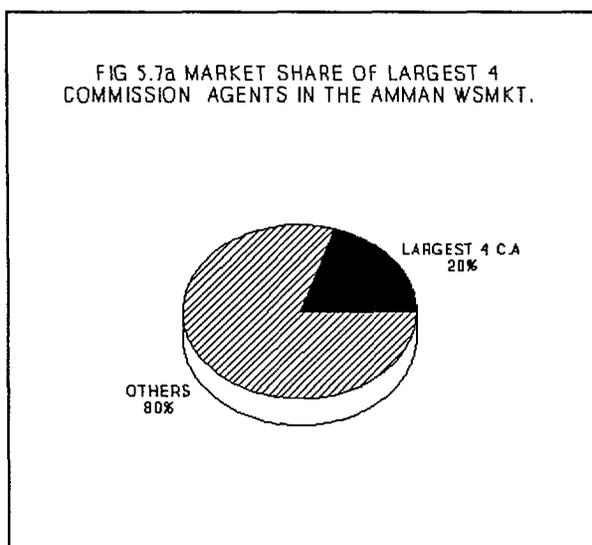
percent of the total quantity, while Mafraq, Zarqa and Southern Amman produce constituted about 17, 7 and 10 percent, respectively. The rest comes from other areas.

As might be expected, about 47 percent of the northern Ghore produce is delivered to the nearby Irbid wholesale market, while 43 percent is delivered to Amman and 10 percent to Al-Arda.



For the middle and southern Ghore, Amman central market received 76 and 44 percent of their products respectively. Mafraq and southern Amman farmers send most of their produce to Amman central market.

Since the Amman wholesale market is the main recipient of fruits and vegetables, a further structural analysis was undertaken. The commission agents are responsible for collecting market use fees from the sellers and buyers on behalf of the market management. The amount collected from each is equal to 2% of the value of produce. The total quantity of fees collected by the market management is an excellent indicator of the volume of produce handled by each commission agent. The annual average of total fees collected for the last three years (1986-88) was calculated. Figures 5.7a and 5.7b shows the share of total fees paid through the largest four and the largest eight commission agents. About one-fifth of the product delivered to the Amman Wholesale Market is sold by only four commission agents; one-third by the largest eight and nearly one-half by the largest twelve firms. Hence, this situation can be defined as an oligopoly. By Bain's standard it can be classified as "low moderate" economic concentration, indicating potential for monopolistic pricing.



According to the regulations governing wholesale markets, commission agents are supposed to sell all produce under an open outcry auction system. The survey showed that most of the C.A in Amman and Zarqa employ two auctioneers.

In order to determine if there may be some conflict of interest in their sales work on behalf of farmers, commission agents were asked if they are involved in exporting or farming. In Amman, 6 of the 49 commission agents interviewed said they are also exporters and 11 indicated they are farmers in addition to serving as commission agent. However, a review of export licenses issued by AMO in 1988 indicates that 7 commission agents actually exported some product during that year. (See Annex IV - Table IV-1 for detailed data) About 16 percent of all sales in the Amman Wholesale Market were attributable to those 7 commission agents. That is somewhat lower than in 1986. Data for that year indicates that there were 21 commission agents who were also exporters. Many of the largest volume commission agents were involved in exporting. The second, fourth, seventh and eighth largest commission agents in 1986 were exporters. About 45 percent of the total commission sales in the Amman Wholesale Market in 1986 were made by commission agents who were also exporters.

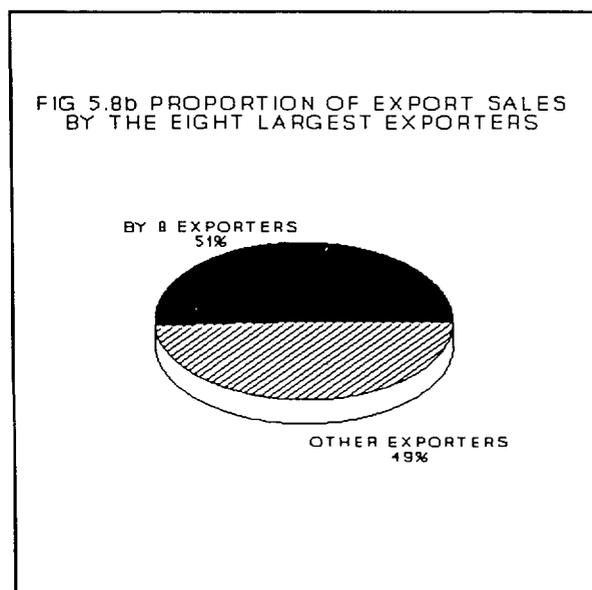
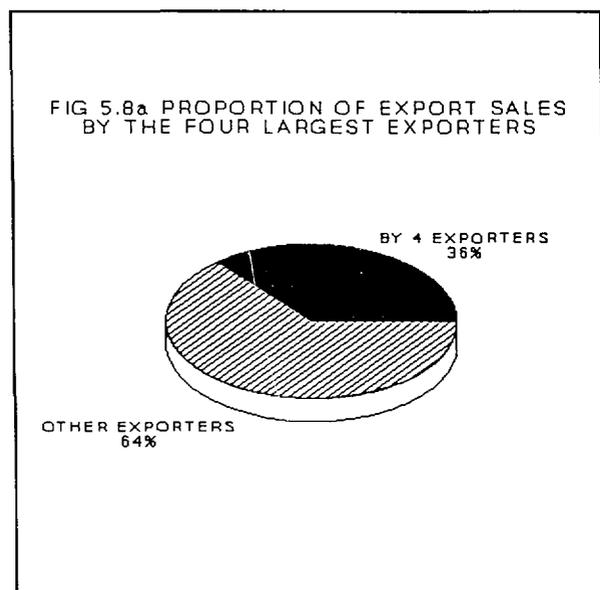
Conversations with knowledgeable persons in the market reveal that many large commission agent/exporters have suffered business set-backs since 1986. It seems the declining competitiveness of Jordanian fruits and vegetables in Gulf markets, the low product quality, poor packaging and inappropriate handling practices of exported products, coupled with the questionable business practices of those commission agent/exporters, produced a situation in which they could not pay for all the product delivered by farmers to them on consignment. As export sales and prices declined, they went further and further behind in payment obligations to farmers and eventually were forced out of exporting and/or experienced a drastic reduction in their commission sales in the wake of lawsuits and bitter protests from farmers.

This perfectly illustrates the conflict of interest when a commission agent is also buying product in the same market. He has an incentive to keep prices down, not only for the product he buys, but for all sales, and indeed market prices in general. When farmers agree to extend credit to the commission agent, the problem is compounded and farmers end up carrying most of the economic risks in the entire system. If the commission agent is also a farmer, he will undoubtedly treat his own products with greater care and may end up getting higher prices for his own products than for other farmers.

Exporters

Based on a review of export licenses issued by AMO, it is estimated that there are currently about 100 fruit, vegetable and flower exporters in Jordan. There are two types of exporters: those who ship by truck to nearby Gulf states and those who are beginning to export by air to Europe. **Gulf states** exporters purchase direct from farms, or through commission agents at Al-Arda or Amman wholesale markets. They perform very little additional sorting, grading or packaging. Most have crude packing operations called "workshops", most of which are located in Amman, near the wholesale market. The exporters who do not own workshops use the empty yards next to the Amman wholesale market for loading the refrigerated trucks. Some Gulf states exporters load their refrigerated trucks directly in the Al-Arda market, or at the farms. A few exporters (especially in Irbid) use unrefrigerated trucks to export to the northern parts of Saudi Arabia. Exporters to **Europe**, on the other hand, obtain produce primarily from their own farms or purchase directly from other farmers. They sort and grade the product and pack it into attractive cardboard or wooden cartons. It is transferred to the international airport as quickly as possible to complete shipment to European markets before the unrefrigerated product deteriorates.

Regulation No. 14 (1966) stipulates that all fruits and vegetables physically entering the Amman municipality must pass through the Central Wholesale Market for the owner to pay the 4 percent commission to the management of the wholesale market on all produce sold in the city. If that regulation is enforced, it means that the price of the products is increased by that 4 percent and if the product is delivered to a commission agent he collects another 5 percent for his services. It could also increase the transportation and handling costs, resulting in a 10-15 percent unnecessary increase in the price of the product. In reality, that regulation is almost impossible to enforce and exporters regularly take products directly from farms to exporters workshops. Figure 5.3 indicates that 21 percent of exporters' supplies are moving directly from the farm to their workshops. Those statistics are probably understated by exporters for fear of being caught violating the regulation.



Figures 5.8a and 5.8b show that about 36% of exports sales are made by the four largest exporters and 51% by the first eight exporters.² Accordingly, this market could be categorized as an oligopoly. The degree of oligopoly (according to Bain's classifications) is considered to be "low moderate".³ There is definite reason to examine the behavior of competitors to determine if there is any indication of collusion to manipulate prices. One very apparent problem is that both exporters and commission agents are said to be members of an association which also includes retailers. That could open up opportunities to arrange prices, though participation in a common association does not have to lead to collusion if anti-monopoly laws are in place and are vigorously enforced. But Jordan apparently has no effective anti-monopoly law. Large exporters and commission agents could, therefore, be regularly manipulating prices to their advantage.

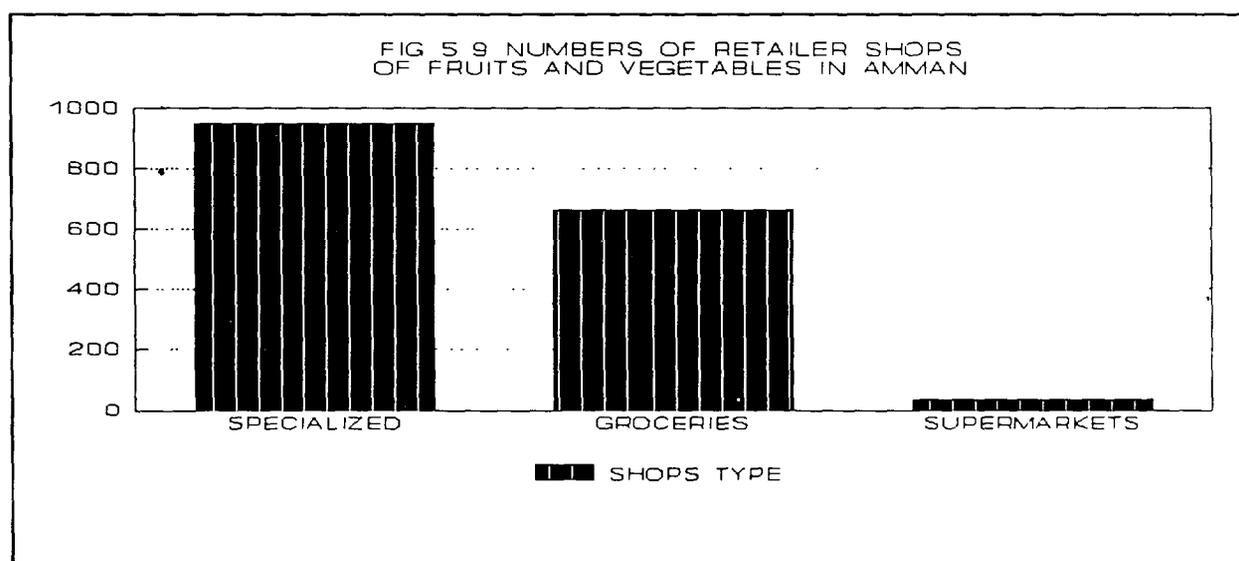
² Jabarin, Amer, *The Role of Marketing Boards in the Marketing System of Fruits and Vegetables in Jordan*, Masters Thesis, University of Jordan, 1989.

³ Jabarin, Amer, *op. cit.*

Retailers

It was estimated in 1985 that about 40 percent of the total population of Jordan, lives in the Amman governorate.⁴ For that reason and because of the feeling that the residents of Amman represent the consumers in Jordan, Amman was selected as the only area for a retailer sample for this study.

There are about 1,650 retail shops selling fruits and vegetables in Amman. About 950 of those specialize exclusively in retailing fruits and vegetables (green grocers), 650 are small

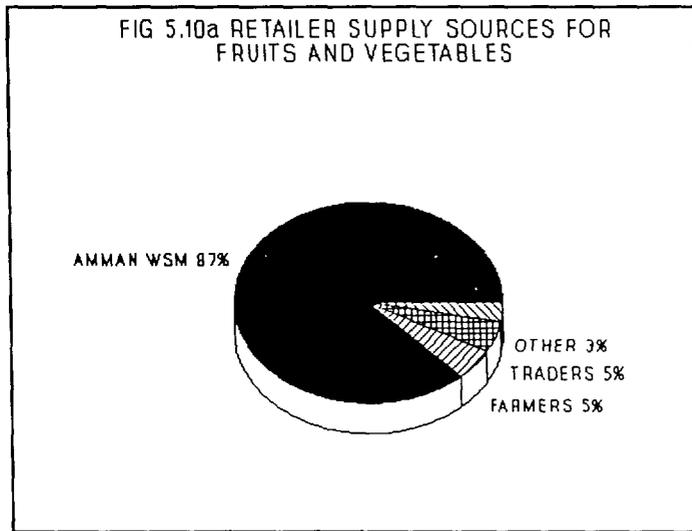


grocery stores selling a limited line of fruits and vegetables in addition to other food items. There are 36 "supermarkets"⁵ selling fruits and vegetables as well as a broad line of other consumer goods (Figure 5.9). Supermarkets are heavily concentrated in high income areas and green grocers are least concentrated in high income areas .

⁴ Schermerhorn, R.W. et al, *Rapid Marketing Appraisal of the Marketing of Four Vegetable Crops in Jordan*, University of Idaho, Moscow, Idaho, 1988.

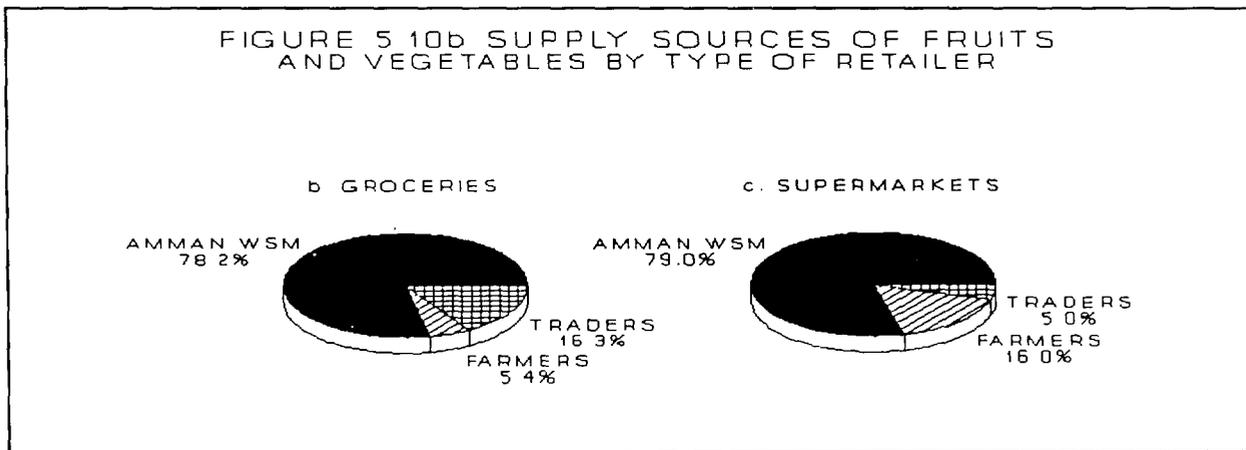
⁵ Supermarkets according to Jordanian standards. Most of these would not be so classified in more developed countries.

Figure 5.10a shows that most Amman retailers purchase their fresh produce supplies in the Amman Wholesale Market, 5 percent purchase from farmers, 5 percent from traders and 3 percent from other sources.



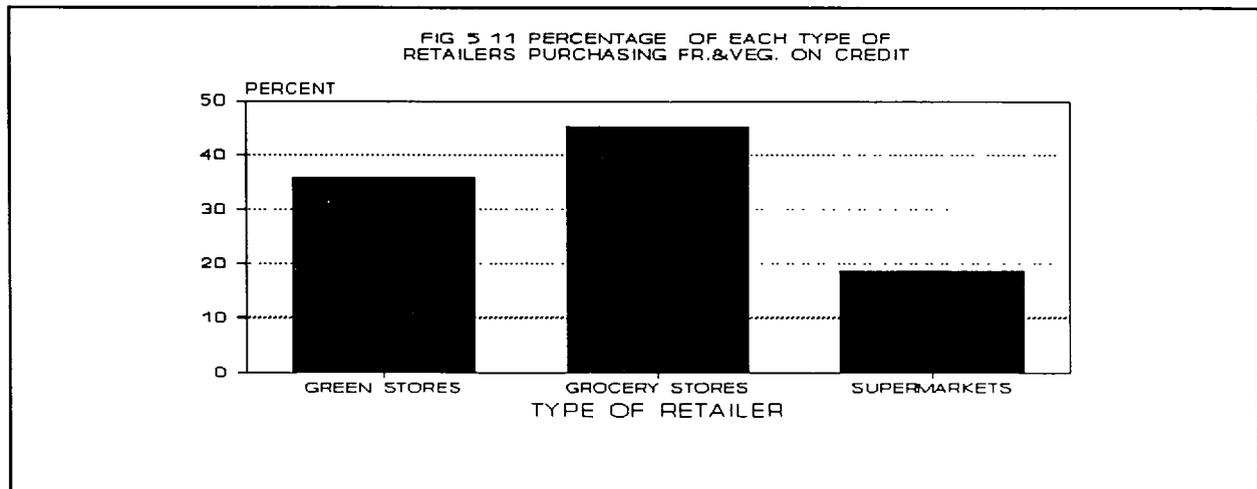
Specialized retailers (green grocers) purchase nearly all of their supplies in the wholesale market. Grocery stores and supermarkets are less likely, however, to purchase in the wholesale market. Figure 5.10b shows that

over 70% of purchases by both grocery stores and supermarkets are made in the wholesale market. But a major alternative source of supply for grocery stores is the trader who purchases in a wholesale market or at the farm and delivers it to the store. On the other hand, supermarkets' most important alternative source of supply is direct purchase from farmers.



About two-thirds of retailers' purchases are made on a cash basis, with a third being paid for within one week. This suggests that credit is a fairly important service being of-

ferred by commission agents and traders to retailers. Figure 5.11 shows that grocery stores are more likely to use credit for fruit and vegetable purchases (45%) and supermarkets are least likely (18%).



About 40% of the retailers buy and sell a full range of fruits and vegetables that are "in season" at any particular time. Also, it was found that the average in store time (shelf life) for a particular product depends mainly on the perishability of the product. For the highly perishables, about 44.3% of retailers sell them within one day, 45.3% within two days and the rest sell the product within three to four days. For the moderately perishable products, about 6.6% of the retailers sell the produce in one day, 40.6% sell it in two days, 39.6% in three days, 90.4% in four days and the rest sell the produce within five to seven days. For durables, about 87% of the retailers sell the produce during a week, 8.5% during one to two weeks, and the rest within more than two weeks.

The frequency of product purchases by retailers depends on the perishability of the product and the level of demand for it. Table 5.1 shows the frequency of purchases for major vegetables. Tomato, the highest volume vegetable, which under Jordanian conditions is highly perishable, is purchased by 70% of the retailers daily and 28% twice a week. Only 2% of retailers purchase it weekly. On the other hand, onion which is considered a durable product, and it is bought in small quantities by consumers, is purchased daily by only 39% of the retailers, while 29% purchase it weekly.

TABLE 5.1 - Frequency of Vegetable Purchases by Retailers and Product (% of Retailers)

Group	Daily	Twice a week	Weekly
Tomato	70	28	2
Cucumber	65	32	3
Eggplant	65	33	2
Squash	63	34	3
Bell Pepper	57	39	4
Carrots	56	40	4
String Beans	55	40	5
Hot Pepper	54	43	3
Okra	54	42	4
Sweetmelon	53	41	6
Jewsmellow	53	34	13
Cabbage	50	36	14
Cauliflower	49	41	10
Potato	48	49	3
Watermelon	42	35	23
Onion	41	45	14
Garlic	39	32	29

Source: AMO Retail Survey

Cucumber, eggplant and squash are purchased with about the same frequency as tomatoes. Bell pepper, carrots, string beans, hot pepper, okra, sweet melon and jewsmellow could be put in another category where 53 to 57 percent of retailers purchase them daily, and 34 to 42 percent purchase the produce twice a week. The third group, which is the least perishable and includes cabbage, cauliflower, potato, watermelon, onion and garlic, are purchased daily by 39% to 50% of retailers.

Table 5.2 shows the frequency of purchases for different fruits. About 62% of the retailers purchase grapes daily, while 36% of them purchase twice a week. On the other extreme, pears are purchased daily by only about 46% of the retailers.

TABLE 5.2 - Frequency of Fruit Product Purchases by Retailers (% of Retailers)

Group	Daily	Twice a week	Weekly
Grapes	62	36	2
Oranges	59	38	3
Lemon	56	41	3
Peaches	55	41	4
Apples	55	37	8
Plums	53	42	5
Apricots	53	41	6
Banana	47	43	10
Pears	46	46	8

Source: AMO Retail Survey

These data indicate that Amman retailers purchase fruits and vegetables quite frequently. The obvious reasons are (1) the quality of products available in the market is poor so that their shelf life is extremely limited and (2) there is virtually no refrigeration of fruits and vegetables anywhere in the marketing channel, including at the retail store.

PRODUCT DIFFERENTIATION

The concept of product differentiation has a double meaning. From the standpoint of the individual businessman or even farmers as a group it has one meaning; and from the standpoint of the economist who is evaluating the structure, conduct and performance of an industry it has a very different meaning.

It has been shown that the individual businessman can obtain a competitive advantage by undertaking actions which will cause his product to stand out in the mind of the consumer. Anything which will enhance the satisfaction of the consumer with a product, that can somehow be related back to the businessman who produced and/or sold it, is likely to cause the consumer to return to purchase a similar product, probably from the same source. **Quality sorting and grading along with attractive packaging, preferably with an attractive and easily remembered brand name, and careful handling** are ways for a businessman to differentiate fruits and vegetables. In undertaking the cost of performing those quality-enhancing actions, the businessman must believe that he will be able to somehow recover the cost and enhance his profits. The benefits of product differentiation through enhanced quality, or the disadvantages of a homogeneously low quality product, can also accrue to a group of producers and/or businessmen. For example, in a produce market like Western Europe, buyers expect a high quality product. If an individual Jordanian exporter sends a low quality, inadequately packaged product to a European buyer, the receiver may refuse to pay for the product, creating a major loss for the exporter. The buyer may not only refuse to buy again from that individual exporter but from all Jordanian exporters. And worse still, he is likely to warn others to avoid Jordanian products. This is a case of **negative product differentiation**, which has unfortunate effects all the way back to the producer.

Farmers and businessmen all along the marketing channel can benefit from quality differentiation, but they can, and under present conditions in Jordan, do lose profit opportunities as a result of negative product differentiation. For example, it appears that Jordanian fruits and vegetables have developed a reputation as the very poorest quality product, with the worst packaging of any product in Gulf states markets. Consequently, Jordanian products fetch the lowest prices in those markets.

Product differentiation in the context of economic performance evaluation has a different meaning. Economic theory postulates that competition will be perfect when there are large numbers of competitors, all **producing a similar (undifferentiated) product**. Some economists argue that a situation where individual firms are able to create a differentiated product image is prima facie evidence of monopolistic pricing - hence is detrimental to the public interest. It has been proven, however, that such is not necessarily the case. Efforts of an individual producer to differentiate his product through improved quality are most likely to produce a competitive response from other producers and result in better quality products for consumers with no detrimental impact on competition. Thus, **a fruit and vegetable marketing system in the early stages of evolution is more likely to exhibit poor performance characteristics as a result of too little product differentiation than from too much**. That appears to be the situation in Jordan at the present time.

Jordanian farmers seem to be convinced that **product differentiation through quality enhancement and improved packaging is not really worthwhile**. Most fruits and vegetables are not carefully harvested at the proper degree of maturity to maximize quality; they are not sorted after harvesting to achieve uniformity of product to meet individual needs of different market segments; they are not graded to meet any meaningful market quality standard; they are marketed without protective packaging or with inadequate packages such as the polypropylene boxes having numerous shortcomings; and there is very little effort to establish a brand image for any producer or marketing firm.

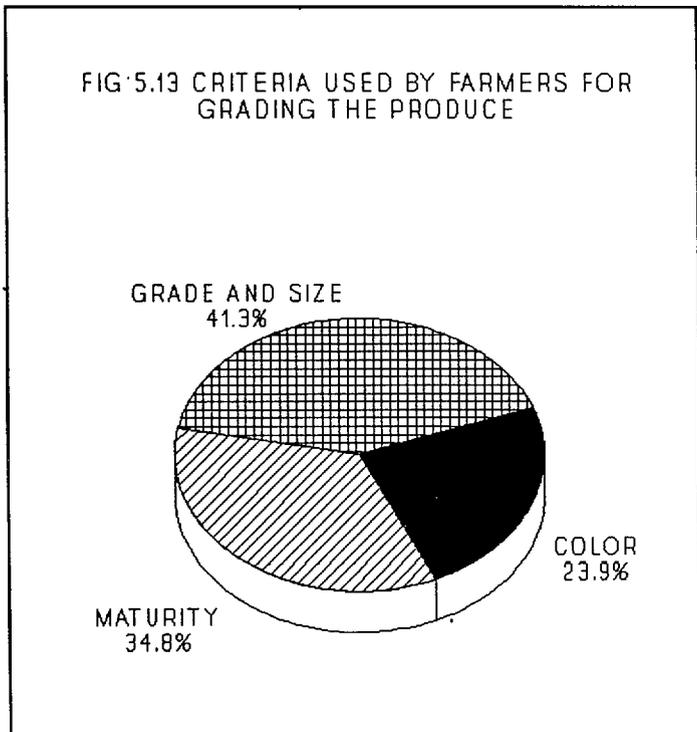
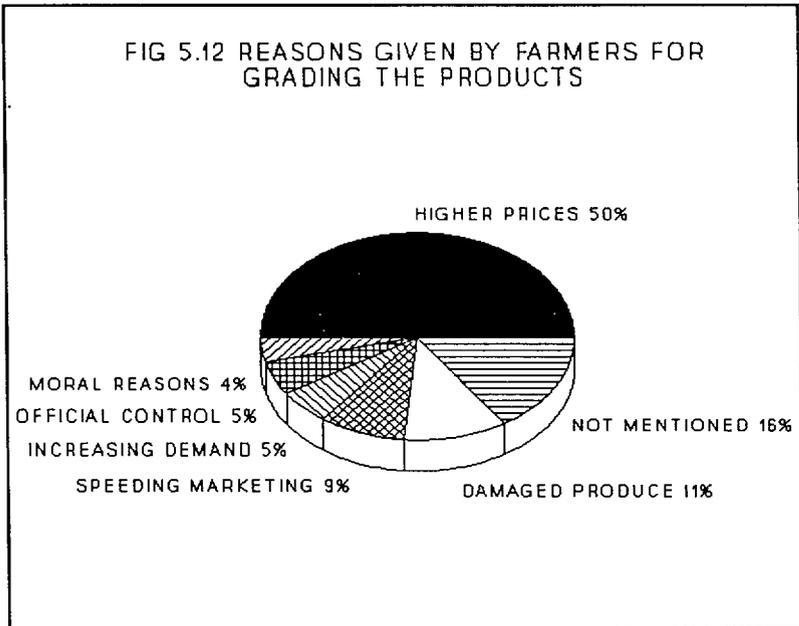
Yet, responses to the farmer questionnaire indicate that farmers believe **or want others to believe** that they do perform actions of quality differentiation. When asked if they grade the product, 93 percent of the farmers responded with a definite yes. The grading is typically performed in the field, under the hot sun, as is packaging. Figure 5.12 indicates the reasons given by farmers for grading the product. It is significant that even with the ineffective grading practiced, half the farmers believe it improves their prices while only 5 percent do so because of a perception that the government requires it.

When asked what criteria were used in grading, the responses were varied (Figure 5.13). Most indicated that grading was primarily based on size, but some mentioned maturity, color and freedom from blemishes and damage.

All of the farmers who do not grade are located in the Jordan Valley. The major reasons given for not grading the product are that it does not increase the price received and that there is no need for it.

Commission agents, wholesalers and traders make no effort to differentiate the fruits and vegetables they sell. They simply accept the product as it comes from the farm and try to sell it as quickly as possible with as little expense as possible. All risks of product loss are passed to the retailer and consumer.

The serious inadequacy of current farmer sorting, grading and packaging is illustrated by results from the retailer survey. About 80% of the retailers re-grade tomatoes in their shops, and about 74% of them re-grade cucumber. Eggplant and squash were re-graded by 63% of the retailers. Sweetmelon, watermelon, potatoes, onion, hot pepper, and okra were re-graded by 50-58% of the retailers. Fruits are less



commonly re-graded, but 62 percent of the retailers re-grade grapes and 38 percent re-grade bananas.

The primary reasons given for re-grading were damage, then size in tomatoes, potatoes, onion, garlic, bell pepper, carrots, sweetmelon, banana, oranges, apples, pears and peaches. Size and damage, in this sequence, were the primary reasons for re-grading cucumber, eggplant, squash, okra, watermelons, and lemon. As for cauliflower, cabbage, and hot pepper, damage and color were the main reasons for re-grading. Damage and freshness were the main reasons for re-grading grapes, jewsmellow and string beans. Maturity and damage were the reasons for re-grading apricots and plums.

Gulf states exporters typically do not practice re-grading. In some cases the exporter will do some sorting and re-packing or will cover the polypropylene packs with a plastic film. Yet exporters are in a position to profit from quality differentiation if it is properly done. But it cannot be efficiently done after the product has been poorly graded and packaged with rough handling into and out of the wholesale market. The product will have already deteriorated too much to justify the expense of sorting, grading and packing.

It can easily be proven that it is most efficient from a system standpoint to practice all sorting, grading and packaging as near to the field as possible. In some advanced economies, the sorting, grading, packing and even pre-cooling is done in the field using sophisticated but portable equipment. The reason for doing the sorting, grading and packing near the field is fairly simple. **It costs money to ship immature, excessively mature, damaged, unacceptably small or disfigured products. It costs money for the exporter or retailer to re-grade and re-pack the product. It costs money for the retailer to discard product that has been mechanically damaged in transit due to poor packaging. It costs money for the municipality to discard the unnecessary garbage generated by discarded produce. And future sales are reduced when the buyer, whether wholesaler, retailer or consumer has to throw out Jordanian produce because of overall quality deterioration.**

All of this seems to suggest that the major missing ingredient is for farmers to first be taught and shown why their profits will be increased by proper quality grading and packaging and then how to grade and package effectively against suggested quality

standards. Exporters too need to be shown why purchasing product at the farm or at a sorting, grading and packing station near the farm will enhance their profits. Ministry of Agriculture researchers and extension agents have given little effective and pragmatic attention to these important activities and AMO is just beginning its marketing extension program. There is an urgent need for those two government agencies to develop coordinated programs to help farmers and exporters produce and market acceptable quality produce.

ENTRY AND EXIT CONDITIONS

As noted in the first chapter, one of the conditions for perfect competition is that there be no significant barriers to entry of new competitors. If entry is restricted by cultural factors, physical impediments, excessively big investment requirements, exorbitant risks, technological or managerial advantages of existing firms or even by government policies, the theory holds that competitive effectiveness can be hampered. It should be noted, however, that barriers to entry such as those listed above may or may not actually result in socially detrimental competitive performance. It can be shown that in some circumstances with entry restricted by some of those barriers, competition can still be effective and consumer benefits significant.

While, in general, farmers can produce and sell any product in any market they choose, a government policy has restricted that freedom for the last several years. As a result of excessive production of the four major vegetable crops in the face of declining export demand, the Government of Jordan decided to implement an acreage control program for tomatoes, cucumber, squash and eggplant. The so-called Cropping Pattern Program has now been lifted for cucumber and squash, though at this writing it remains in effect for tomatoes and eggplant. In addition to being told how many dunums of the product can be produced, the tomato producer is forbidden to produce tomatoes in plastic houses or to use stakes to hold vines off the ground in order to increase the yield and improve the quality of the tomatoes. While the policy was instituted as a result of farmers complaints of disastrously low prices, there has been doubt whether the policy really alleviated the problem or whether farmer's individual decisions would have produced the same or even better results without the government imposed barrier to production. Also, it has been argued that the policy may have created unnecessary incentives for farmers

to continue growing the same products when they might have been better off to recognize low prices as an unmistakable signal to diversify into the production of other products which were not in excess supply. The Cropping Pattern Program was the subject of a separate study by AMO and the Agricultural Marketing Development Project.⁶

There are no significant barriers to entry into the fruit and vegetable retailing business. Retail shops appear and disappear constantly in buildings and on roadsides throughout the Kingdom.

The entry of new competitors as commission agents, on the other hand, is restricted. First, commission agents are required to have a location in a wholesale market. Since all the stores in all the markets are already rented, no new commission agents can get access to the facilities needed to compete with existing agents. Second, the lack of experience is another factor limiting the movement into the markets. Existing commission agents have the advantage of many years of experience in dealing with customers, buyers and in coping with the risks of the business.

An analysis of the marketing use fees collected by commission agents in the Amman Central Wholesale Market over the past 20 years is helpful in determining if those barriers to entry may have effectively restricted entry of new competitors and/or created undesirable concentrations of economic power among a few firms. Annex V contains a series of figures which depict the value of fees collected by Amman commission agents over the past 20 years. The sale of almost all commission agents grew rapidly during the period from 1974 to 1984. The figures show that the volume of business for most commission agents remained relatively stable after 1976. But there are exceptions. For example, the sales of agent 1 declined by about 60% from 1986 to 1988. The sales of Agent 2 increased substantially at about the same time. Agent 10 increased his market share from nothing in 1978 to become the largest single agent in 1985, but by 1988 his sales had been dramatically reduced. The largest single agent in 1988 was Agent 2, who has been in business during the entire 20 years. But he was challenged for the top position in 1988 by Agent 19 who only went into business in 1980. It is important to note

⁶ Bessler, David A. and Bruce A. Mc Carl, *An Assessment of the Economic Impact of the Jordanian Agricultural Cropping Pattern*, Agricultural Marketing Development Project Report, Amman, 1989.

that in 1979 the Central Wholesale Market made it possible for several new agents to go into business by renting new stores. Several of those new agents (i.e. Agents 6, 9, 10, 12, 15, 18, 19, 20, 21, 22, 25, 26, 27, 28, 40, 41) quickly became important forces in the market.

The above analysis indicates that there has been competition among commission agents in the Amman Wholesale Market, especially as a result of the decision by the Amman Wholesale Market to issue new commission agent licenses. The entrance of new competitors after 1979 introduced new and healthy competition in the market. There are, however, other conditions, such as permitting commission agents to buy and sell produce, which have produced socially and economically undesirable results.

There are no major barriers to entry for exporters of fruits and vegetables. Any reasonably intelligent and energetic entrepreneur, with some risk capital, can become an exporter. In the case of exports to the Gulf states, most current exporters control the distribution outlet in the importing country and own the refrigerated trucks used to transport the product. But there appears to be nothing to restrict the new competitor from doing the same if he determines it to be the appropriate strategy for him.

ANALYSIS OF MARKET STRUCTURE HYPOTHESES

In chapter 1 several research hypotheses were specified. There were seven hypotheses relating to market structure. Each of those will be evaluated briefly below in light of the data collected for the study.

Seller Concentration

There is significant effective market concentration in the hands of relatively few groups of closely knit commission agents and produce buyers. There is a certain degree of oligopolistic market concentration among commission agents in the Amman Central Wholesale Market and among exporters. The largest 4 commission agents handle about 20 percent of all commission sales and the 4 largest exporters handle about 36 percent of all exports. Since at least 7 commission agents are also exporters and since there is close²⁰ personal contact among those firms in and near the Amman wholesale

market, the structural conditions for collusive behavior exist. In addition, many commission agents provide credit to farmers as a way to assure the delivery of product to the commission agent. Commission agents also extend credit to retailers as a way to enhance sales. While regulations do not presently forbid commission agents from providing credit to farmers or retailers, or from acting as exporters, there is clearly a potential for behavior that would be detrimental to farmers and consumers.

Several licensed commission agents also function as produce buyers, a practice which causes them to bias the results of auction sales to their advantage as produce buyers. In 1988, 7 commission agents were also acting as buyers of product for export. Nearly 16 percent of all commission sales in that year were handled by commission agents who were also exporters. The number of commission agents who were also exporters had declined from 21 in 1986 with 45 percent of all sales in the Amman Wholesale Market. Those commission agents sometimes extend credit to farmers to get their product. In other cases, the payment to the farmer is delayed while the commission agent/exporter exports the product. There were apparently significant abuses of those credit arrangements during the period of declining export sales. It is clear that commission agents and exporters have had a tremendous negotiating advantage over farmers as a result of this situation.

There is excessive concentration of buying power in the hands of a few exporters. There is moderate concentration of buying power among exporters. About 51 percent of all export sales are made by the largest eight exporters. And worse still, some of those exporters are also commission agents. Farmers are, therefore, at a significant competitive disadvantage.

Sales Methods

Only a small percentage of the produce is actually sold through a proper auction. The wholesale market regulations stipulate that all fruits and vegetables sold in the wholesale markets should be sold by the open outcry auction method. It is clear that there is considerable violation of that regulation in all wholesale markets. The commission agents survey indicated that only about two-thirds of the products are sold by auction.

Market observations indicated that significant sales are negotiated directly before the appointed starting time for the auction.

Barriers to Entry

There are significant barriers to entry for new commission agents and exporters. There are important barriers to entry in the activity of commission agent in the wholesale markets. The limitation of commission agent locations is the major barrier. Market regulations permit a commission agent to keep renewing his rental contract for as long as he wishes. The rental rate for commission agents who entered the Amman market in 1966 has apparently not changed from the very low level of JD 250-600 per store. When new stores were offered in 1979, the aspiring commission agents were required to pay an initial "key" payment of JD 20,000 for the right to take the space plus the annual rental of JD 250-600. The commission agent has an exclusive right to the stream of income which may be generated from increasing volumes of products in the market. And the data indicate that revenues have increased significantly as the city has grown and the volume of fruits and vegetables has increased (See Annex V). In a few cases it is said that commission agents have been offered as much JD 100,000 to "sell" those rights to another individual. There has been very little or no exit from the business.

Product Differentiation

The structure of the marketing system has produced no incentive for farmers and/or intermediaries to properly grade, sort, package and handle the highly perishable products sold in the wholesale markets. There is certainly no danger of product differentiation producing competitive advantage for any market participant. The degree of product differentiation through sorting, grading or packaging is minimal. It is clear that the lack of sorting, grading and appropriate packaging tends to increase product losses and reduce the prices received for fruits and vegetables in both the home and export markets.

These structural conditions cannot be used alone to evaluate performance of the fruit and vegetable marketing system or individual segments of it. In the following chapter we will examine the behavior of competitors to ascertain if there is evidence that the structural conditions are creating conduct which may have detrimental social effects. Then, in the next chapter, we will consider the joint effects of structure and conduct on marketing system performance.

ANNEX IV

TABLE IV.1 – Ranking of Commission Agents by Value of Sales
in the Amman Wholesale Market in 1986 and 1988

1986			1988		
C.A #	Sales JD	EXPORTER	C.A #	Sales JD	EXPORTER
9	3,022,835		17	4,037,200	
2	2,419,021	*	22	3,968,775	
30	2,387,679	*	29	2,773,450	*
48	2,194,488	*	45	2,284,700	
37	2,072,070		16	2,212,225	
38	1,959,017	*	2	2,194,850	
49	1,878,587		38	2,021,325	*
35	1,801,372		23	1,940,500	
24	1,719,009	*	8	1,829,700	*
45	1,641,937	*	44	1,791,050	
39	1,343,310		43	1,593,850	
17	1,303,934		42	1,442,300	
44	1,275,662		49	1,390,075	
8	1,163,471	*	32	1,157,275	
47	1,106,923	*	37	1,079,075	
50	1,041,989	*	20	1,041,400	
19	1,040,448	*	6	1,025,975	
12	1,038,394		4	961,775	
13	1,036,493	*	21	949,800	
3	1,032,502		50	949,775	
1	1,016,723		3	838,875	*
41	928,194		48	829,800	
26	922,768		1	806,025	
10	920,159		27	779,850	
20	872,098	*	40	756,050	
4	868,408	*	19	750,775	
34	862,926	*	15	694,700	*

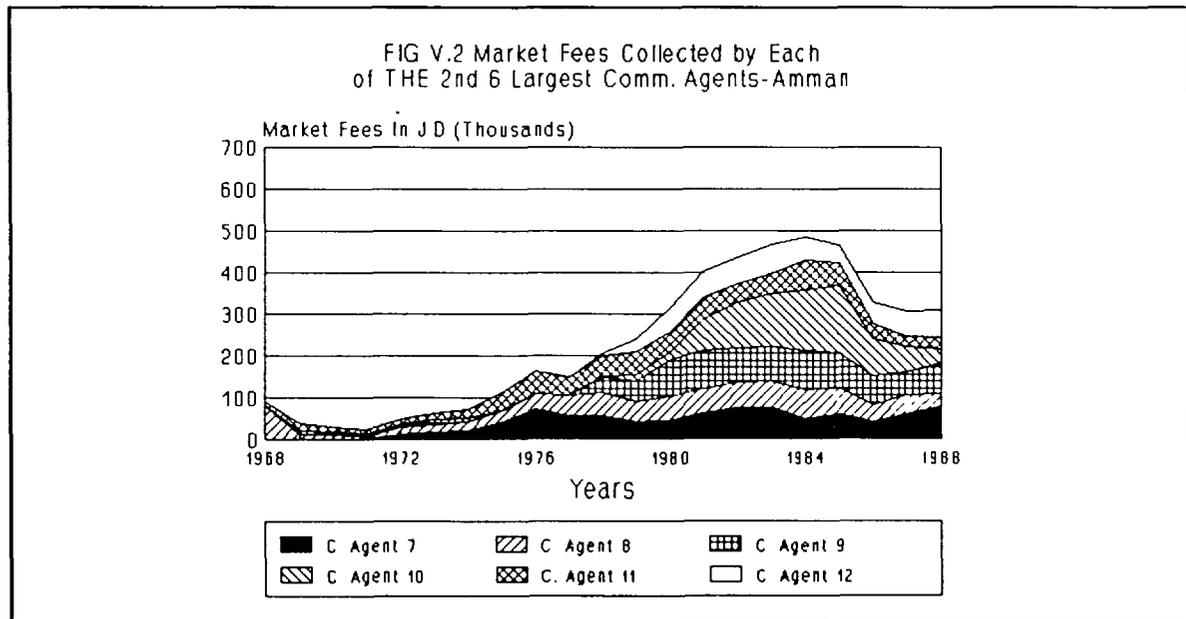
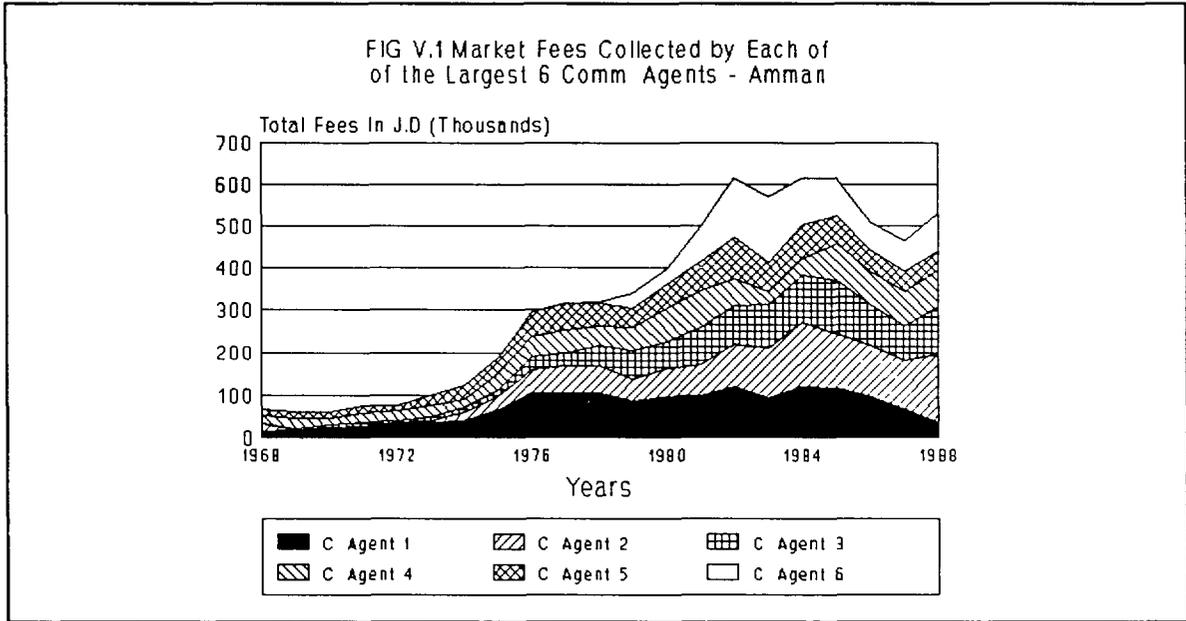
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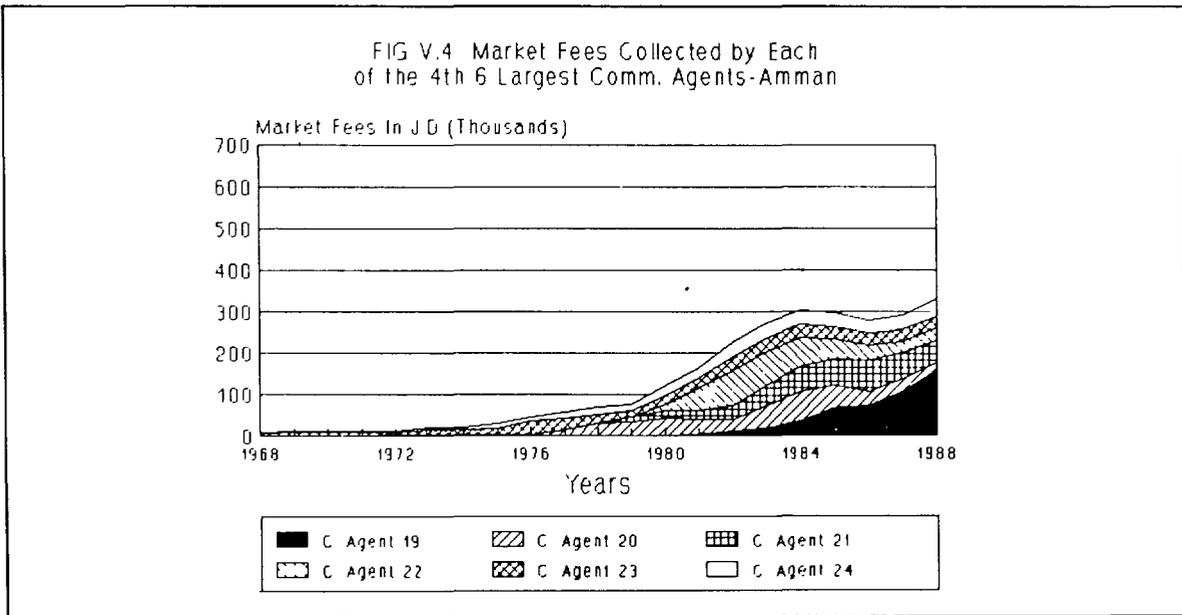
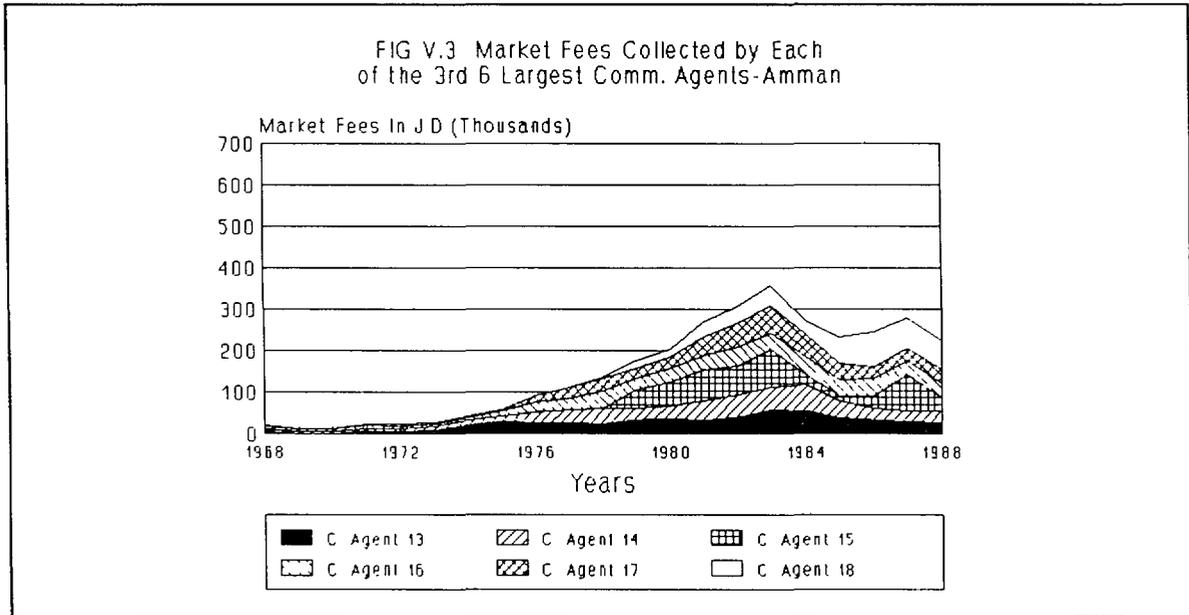
1986			1988		
C.A #	Sales JD	EXPORTER	C.A #	Sales JD	EXPORTER
43	823,100		11	687,800	
51	803,886		36	682,525	
23	762,374		33	678,700	
11	751,051		7	665,225	
32	737,830		51	570,050	
33	722,342	*	13	562,125	
18	680,187		34	544,900	
22	649,289	*	28	487,100	
46	643,454		47	477,625	
14	639,184		35	463,925	
29	587,588		39	461,650	
16	563,021		31	459,750	
31	523,934	*	26	451,825	
6	455,413		30	429,375	
55	372,966		5	420,100	*
15	352,173		25	401,925	
28	334,197		46	396,650	
36	307,998		12	387,075	
40	284,009	*	41	313,950	
21	276,221		10	307,575	
25	262,541	*	52	293,775	
52	259,779		9	286,425	
42	256,054		24	270,250	
7	246,550	*	53	253,300	
27	220,789		14	197,775	
53	210,204		18	145,925	
5	76,048		55	50	
54	2,902	*	54	0	*
Total	51,675,501	23,005,474		53,398,500	8,578,150
% of C. Agents Sales		44.52%			16.06%

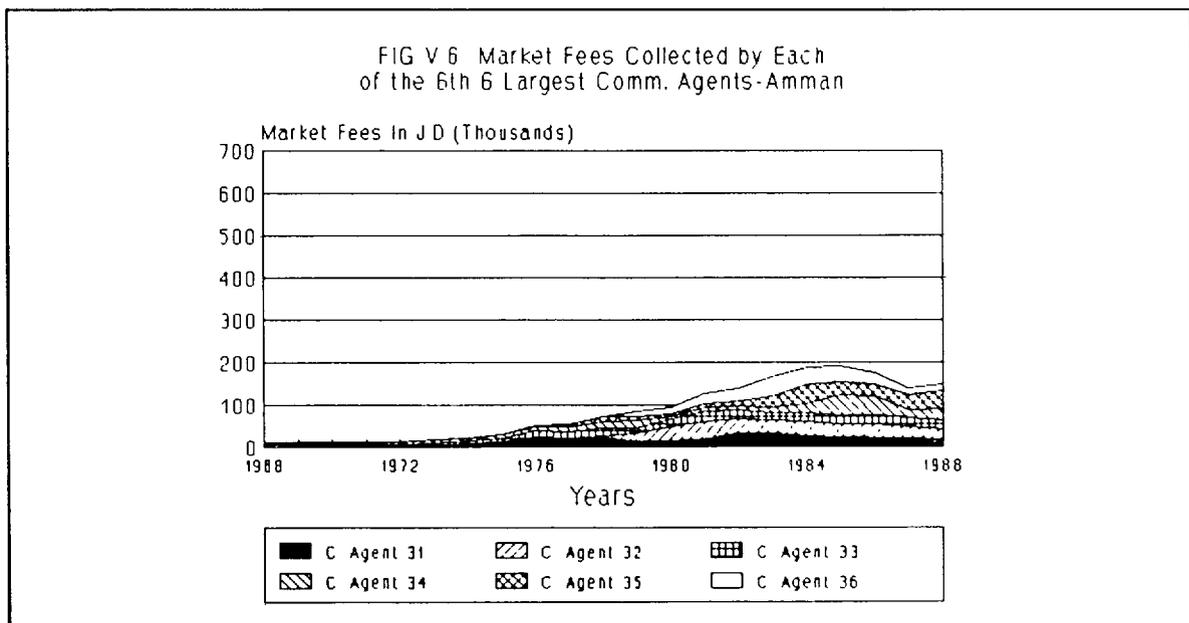
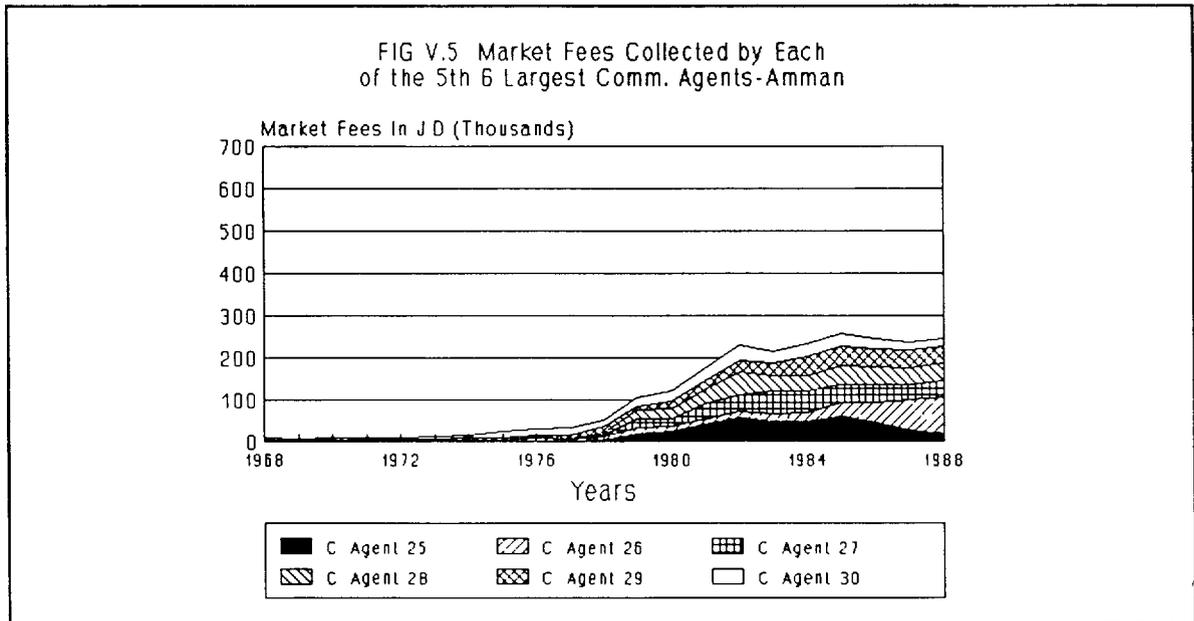
* Indicates those commission agents who were also exporters

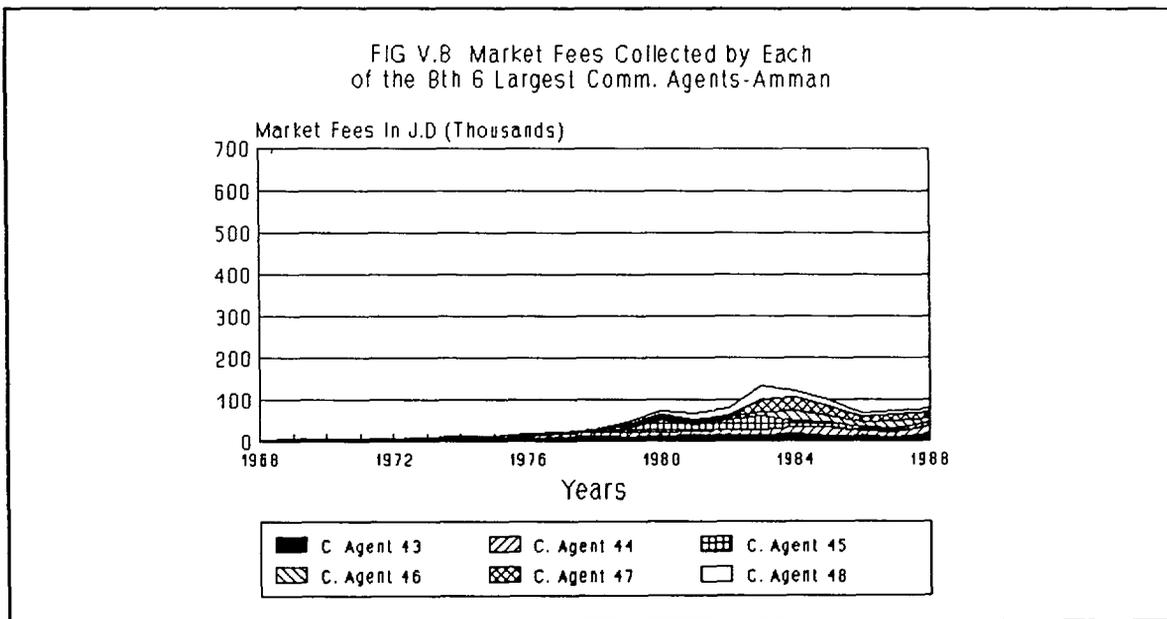
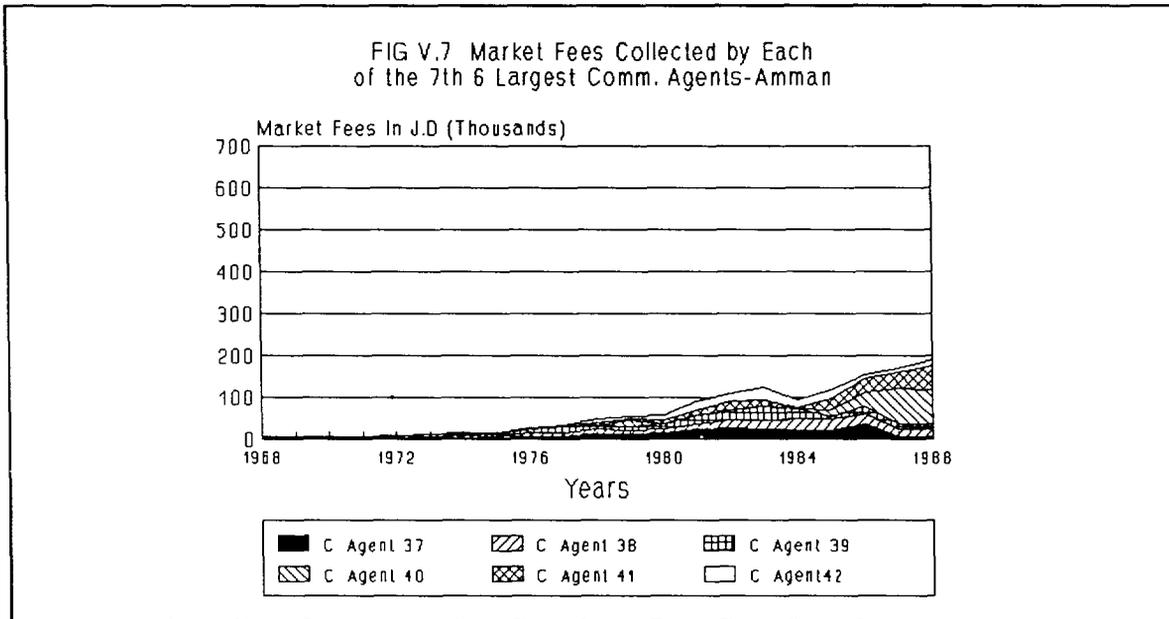
Source : Amman Municipality and AMO

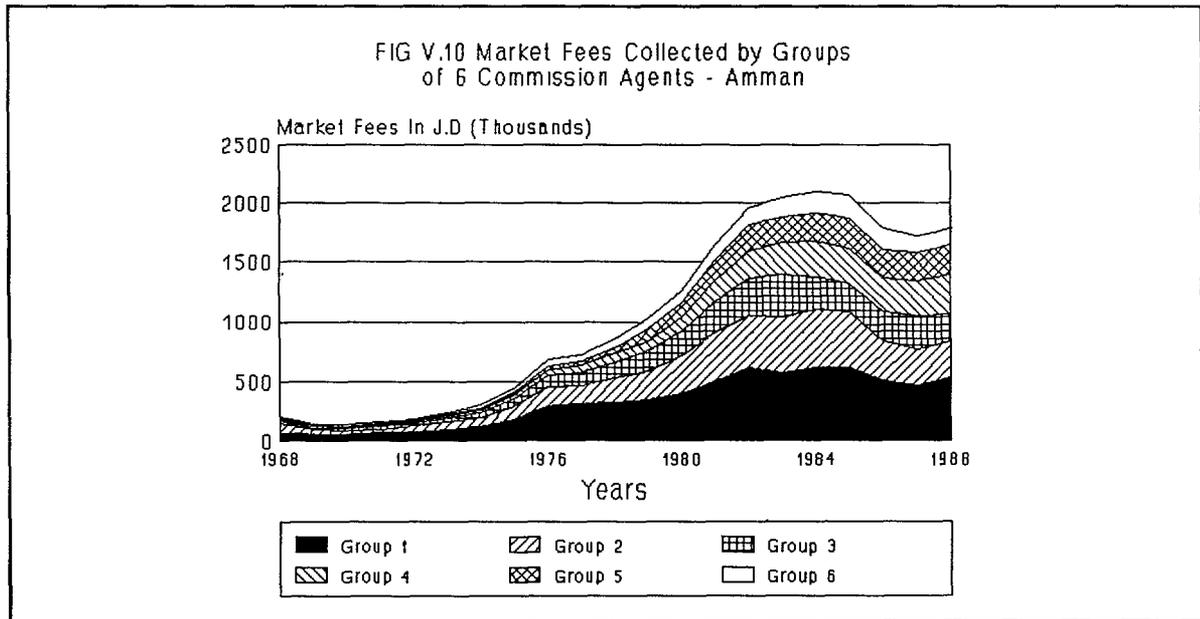
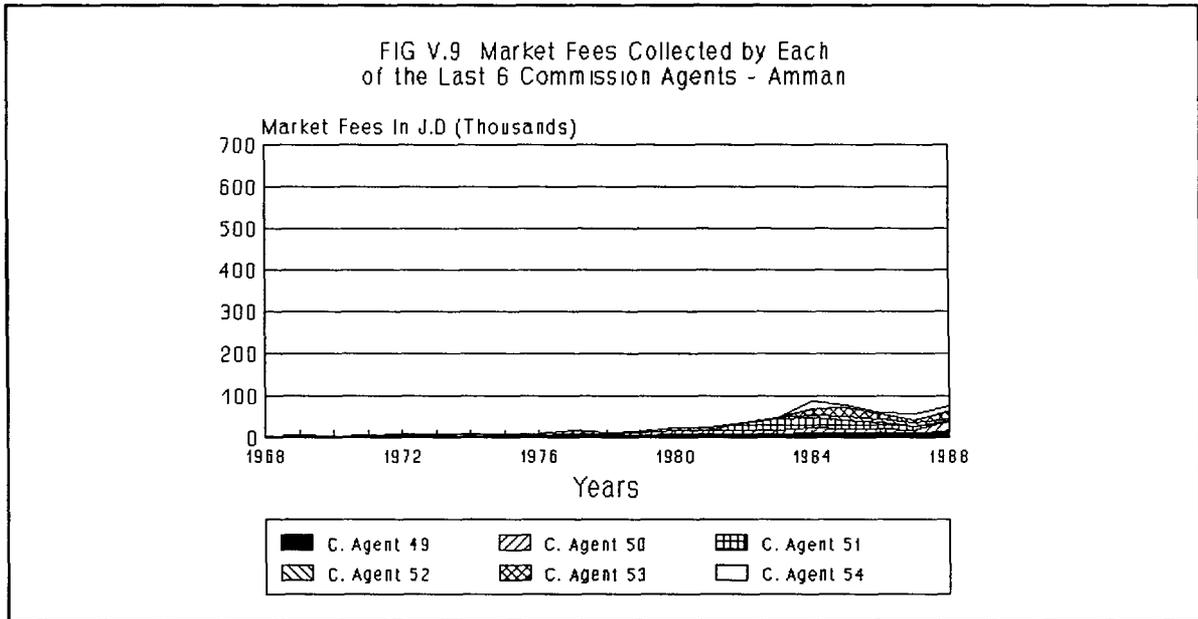
ANNEX V











CHAPTER 6

MARKET CONDUCT OF FRUITS AND VEGETABLES MARKETING SYSTEM

Market conduct is the term which has been used to refer to the managerial behavior of participants in a particular industry or sub-sector. It deals primarily with the actions taken by individual firms in their efforts to maximize profits under the existing regulatory environment and competitive conditions.

It is the normal role of businessmen in a market economy to maximize profits through every legal means. The businessman can be expected to attempt to pursue strategies of technological innovation, efficiencies of large scale operation and even the exercise of personal and political influence in an effort to increase his profits. Under fully competitive conditions such behavior can be beneficial, since other firms will copy their profitable behavior and take away their capacity to monopolize. But under certain structural conditions, the pursuit of such behavior may give a single dominant firm or a small group of firms the power to independently fix the purchase price and/or sales prices. Or the dominant firm(s) may not be able to absolutely fix prices as monopolists, but he may be able to strongly influence price levels to his benefit through the use of **bargaining power**.

It is the normal role of government in a market economy to monitor competitive conditions to determine if there is evidence of monopolistic pricing behavior. If scientific and objective analysis indicates there is monopolistic pricing, then the normal role of government is to undertake policy measures to help restore competitive price formation conditions through modification of the structure or the conduct of businesses in a particular sub-sector. Care must be taken, however, that the government intervention does not end up creating more problems than it solves.

The following analysis explores some of the commonly used measures of market conduct for the fruit and vegetable marketing system of Jordan.

WHOLESALE MARKET OWNERSHIP

According to Regulation No. 14, 1966 concerning Amman Wholesale Central Market, (AWCM), the wholesale central markets are owned by the municipalities. Each municipality finances the wholesale market construction. Operating costs are derived from revenues obtained from rentals, fees and concessions. The managers of all the wholesale markets in Jordan are appointed by the municipalities, and are responsible for proper supervision and management.

Al-Arda wholesale market, which is located in the central Ghore area, is owned and operated by the agricultural marketing and processing company (AMPCO).

WHOLESALE MARKET MANAGEMENT

In the Amman Central Wholesale Market, a board of directors was established. Members of the board include: the Mayor of Amman, an elected member of the Municipality of Amman, a representative of the Agricultural Market Organization (AMO), an elected member of the Jordanian Cooperative Organization (JCO), a representative of the Chamber of Commerce in Amman, and the market manager. The market management staff are appointed by the Municipality Authority on the recommendation of the market manager.

The manager and his staff are responsible for the management, supervision of prices, and market information collection. The manager is also a member of the Retail Price Fixing Committee.

The market fees are collected by the (55) commission agents (2% of the value from the seller and 2% from the buyer) in the market and then delivered, accompanied with a report about their transactions, to the market authority. In addition, the market inspectors deliver a report on most of the transactions of commission agents.

In the other two principal wholesale markets (i.e in Irbid and Zarqa) the market fees are collected by the commission agents, then delivered to a contractor who is selected to manage the market by municipal authorities on the basis of competitive bidding. Under the contract he agrees to pay an annual fixed sum to the municipality, either when the contract is signed, or in quarterly installments. The contractor appoints market inspectors,

main entrance guards, and accountants. In general, those contractors are interested only in collecting their fees. While the contractor is required to provide wholesale prices for all transactions to the Price Fixing Committee at the end of the selling day, they do not do a good job of collecting information on daily market volume and prices. And they are little interested in helping to increase the efficiency and effectiveness of the wholesale market.

SELLING PERIODS

The farm survey indicated that more than half of farmers in the sample (about 58%) harvest their produce in the morning, while about 21 percent harvest in the afternoon. The rest (21%) harvest in the evening.

Table 6.1 shows the percentage of farm sales arriving at the market during the morning,

TABLE 6.1 - Farmer Marketing Time From Different Rural Areas (%)

LOCATION	MARKETING TIME			Total
	Morning	Afternoon	Night	
IRBID	46	8	46	100
MAFRAQ	95	5	0	100
GHORE	54	25	21	100
AMMAN	0	73	27	100
BALQA	24	62	14	100
ZARQA	65	10	25	100

afternoon and night from different growing areas. It appears that farmers in different areas have different marketing strategies.

About 95 percent of the Mafrq farmers send their products in the morning, while nothing was marketed from this area at night. In Irbid, about 46 percent of the farmers market their products in the morning with 54 percent sending their products to the market in the afternoon or evening.

The farmers in the Ghore area send about half of their produce to the markets in the morning, 25% at night and the rest in the afternoon.

In Baqa', about 62 percent of the produce is sent to the market in the afternoon, while 65 percent of the products of Zarqa are sent in the morning.

The Amman Central Wholesale Market keeps its gate open all the day and night, but selling activities (auctioning) starts at 6:00 a.m.. Early morning sales are those products which are stacked in front of the commission agents' stores during the night. At around nine o'clock, another auction starts for the products which arrive after 5:00 a.m.. Those sales are made directly from the trucks. At around twelve noon the selling slackens except for products coming from the West Bank of Jordan and Gaza strip.

In the Zarqa wholesale market, the selling period starts at six in the morning and stops between eight and nine a.m..

Irbid market starts at four-thirty in the morning and sales are completed by eleven a.m..

Auction sales in the Al-Arda wholesale market begin at seven in the morning and normally terminate by noon. The character of that market is different from other wholesale markets in that the major buyers are exporters and traders. The latter are intermediaries who take the product to one of the central wholesale markets or directly to retail customers in other towns. The market operates only during the months of October to June, which is the main fruit and vegetable production season in the Jordan Valley.

The weekly day off in Amman and Zarqa markets is nominally Friday. Yet Figure 6.1 indicates that a large volume of product is actually received in Amman on Fridays. The day off in Irbid and Al-Arda is Thursday.

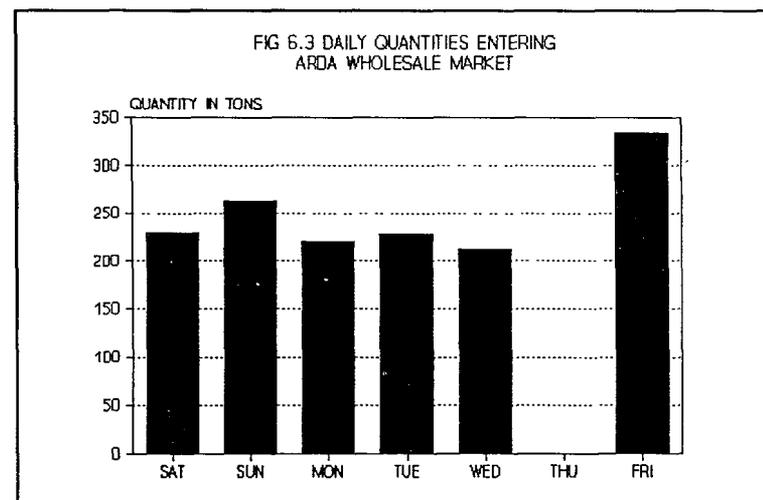
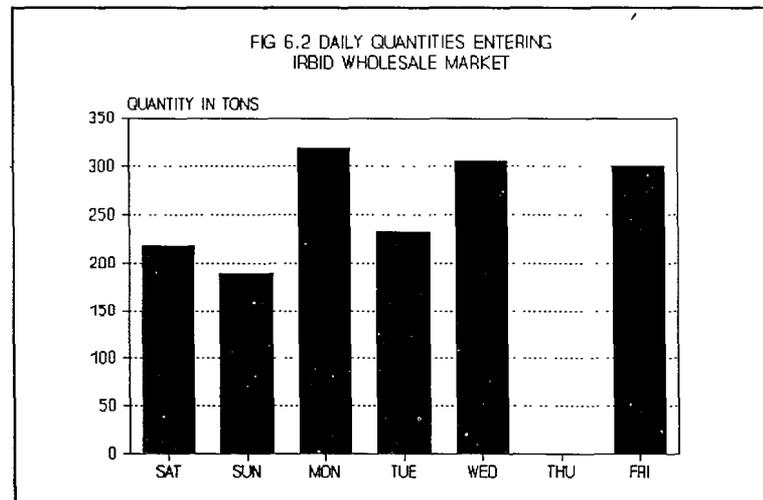
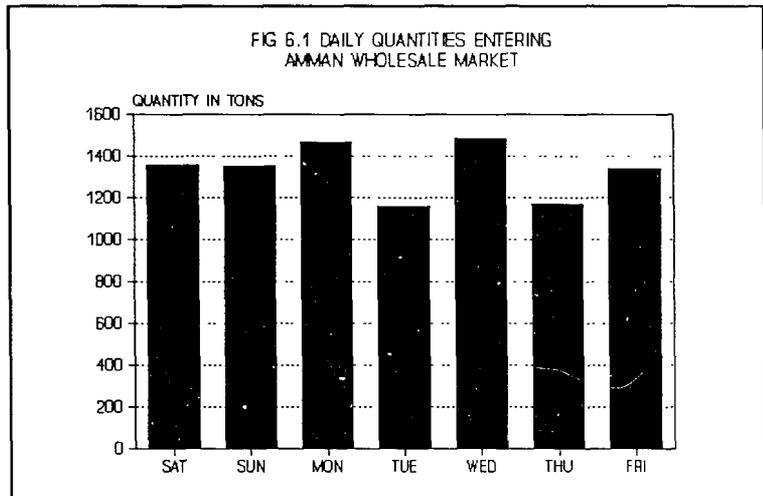
During May 1989, a survey was conducted to estimate the quantities that enter the three markets (Amman, Zarqa and Irbid) every hour of the day and night, over a two weeks

period. The average daily quantity (1,326 tons) arriving in Amman is over five times that of the quantities in any other market.

The quantities entering the Amman wholesale market were just about evenly distributed during the days of the week (Fig. 6.1).

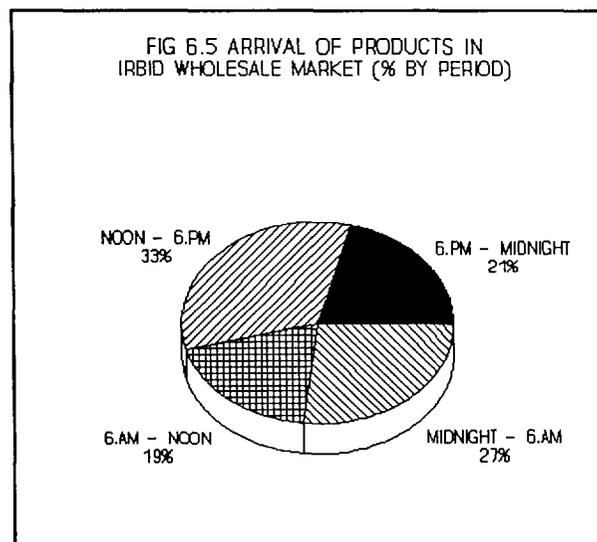
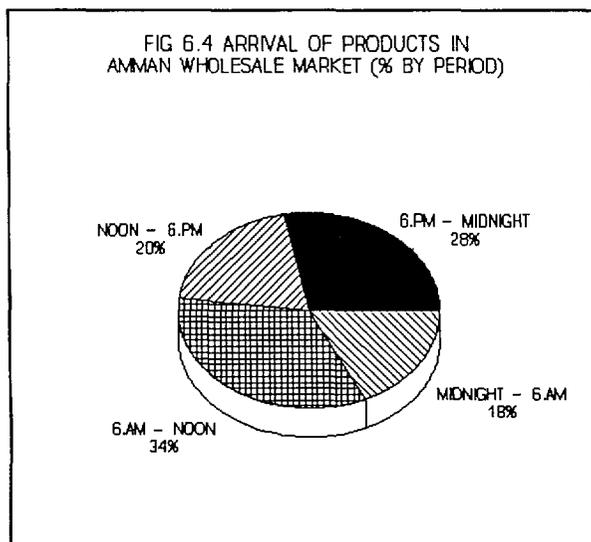
Irbid is the second largest wholesale market in Jordan with daily quantities in the 200-350 ton range. Figure 6.2 shows that Monday is the largest volume day in Irbid.

The quantities of product entering the market at Al-Arda range from 200-335 tons per day. Figure 6.3 indicates that Friday is the most active trading day. The reason is that the market is closed on Thursday because export crossing points are closed on both Thursday and Friday. Al-Arda wholesale market starts accepting fruits and vegetables at 7 p.m. and stops at 1 p.m. the following day. Sales take place only between 7 and 1 p.m.. About half of the produce is delivered between 7 and 9 a.m.. On the other hand about one third arrives in the



evening between 9 and 11 p.m.. That coincides closely with the harvesting times of farmers in the valley.

The Zarqa market handles small quantities - about 45-85 tons per day. Deliveries to the Zarqa market take place only between 3 p.m. and 8 p.m.. The largest quantities are delivered between 5 and 6 p.m.. It seems that most of the produce arriving in Zarqa originates in the Amman Wholesale Market. It is brought by traders who purchase it in the morning for re-sale in Zarqa the next day.



The study found that the hour with the largest volume of arrivals in the Amman market is 10 to 11 a.m.. As might be expected, most Amman retailers - about 73% purchase fruits and vegetables before 8 a.m.. Another 23 percent purchase their requirements between 8 a.m. and noon. That means that exporters are the main buyers during the late morning and afternoon. Sales to exporters are usually made directly from the truck. Exporters end their buying by about 2 p.m.. Any product arriving after that time is likely to be held for sale the following day. Figure 6.4 depicts the distribution of arrivals for each of the four quarters of the day. Deliveries are fairly evenly spaced with the largest quantities arriving in the 6 a.m. to noon period.

About a third of the daily deliveries at the Irbid market are between 12 noon and 6 in the afternoon. The least active delivery period is 6 p.m. to midnight (Figure 6.5).

WHOLESALE MARKET AND COMMISSION AGENT FEES

In 1985, a study was conducted to evaluate the need for investment in wholesale facilities for fruits and vegetables in Jordan.¹ The study concluded that the 4 percent municipal tax (2 percent from the seller and 2 percent from the buyer), plus rents collected for use of the wholesale stalls, results in revenues to the municipality in the range of 10 times the cost of operating the market. Thus, the current fee structure entails a substantial income transfer from producers and consumers to the municipality and also has significant implications for the cost of Jordanian products moving into Gulf states export market channels. It was found from the field survey that the commission agents charge different levels of fees, ranging from 3 to 5 percent. Some commission agents admitted they sometimes charge a low commission rate to some farmers and a higher rate to others.

Commission agent charges are generally higher in Amman and Zarqa than in Irbid (Table 6.2). There is no evidence that Amman commission agents offer more services, nor is there any other justifiable reason for the higher rate. Store rental rates are not significantly higher in Amman, though the "key" money requirement for new commission agents since 1979 has been JD 20,000 in Amman vs. JD 5,000 in Irbid. But the older and generally larger commission agents in Amman paid no key money and have very low annual rental rates (JD 250-600).

TABLE 6.2 - Percentage of Commission Agents Charging Different Commission Rates in the Different Wholesale Markets

Commission (%)	Amman	Irbid	Zarqa	All markets
3%	13%	21%	4%	14%
4%	47%	49%	40%	47%
5%	40%	30%	56%	39%

Source: AMO Commission Agent Survey

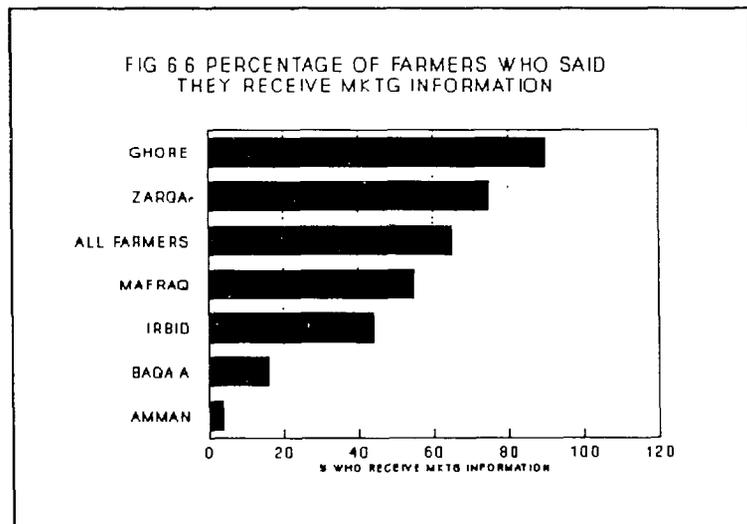
¹ Godwin, Marshal, *A Perspective on the Need for Investment in Wholesale Facilities for Fruits and Vegetables in Jordan*, U.S. Agency for International Development, September 1984.

Commission agents collect the market fees on behalf of the wholesale market management. About 87 of the commission agents deliver them to the market authorities at the end of the week while about 11% (mostly in Zarqa) deliver them at the end of the day. The rest deliver them after more than a week.

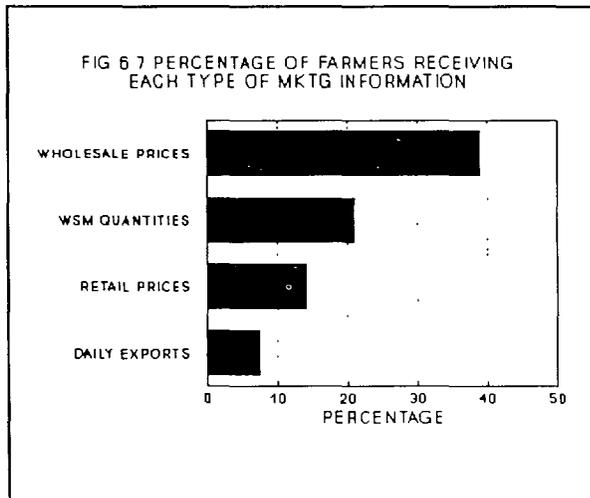
MARKET INFORMATION

The present market information system for fruits and vegetables is weak. Farmers and marketing intermediaries need information on quantities sold for Jordanian consumption and for export. They need to be informed about consumer preferences in terms of quality and packaging. And perhaps most importantly they need to have timely information on current price levels (especially wholesale prices), pricing practices and price trends. Some information is currently collected and tabulated by the Amman Central Wholesale Market and by government agencies. But that information is used internally and generally is not disseminated in a usable form on a timely basis to producers and market intermediaries. Some information, such as current prices in the wholesale markets, is available on an informal or individual basis, but to obtain this information the farmer must visit the market and meet face to face with market operators. This requires considerable time and travel expense on the part of the farmer. This lack of knowledge limits the farmers' ability to make appropriate and timely adjustments to their production and marketing activities in order to optimize profits. For example, farmers' decisions as to which crops to grow, when to plant, and in what quantities should be guided by reliable information on the requirements of the market. This information is not available to the farmer in Jordan.

According to the farmer survey, Jordan Valley farmers receive the most market information and Amman area farmers the least (Figure 6.6). Amman and Baqa' farmers receive practically no market information.



The percentage of farmers receiving different types of market information is shown in Figure 6.7.

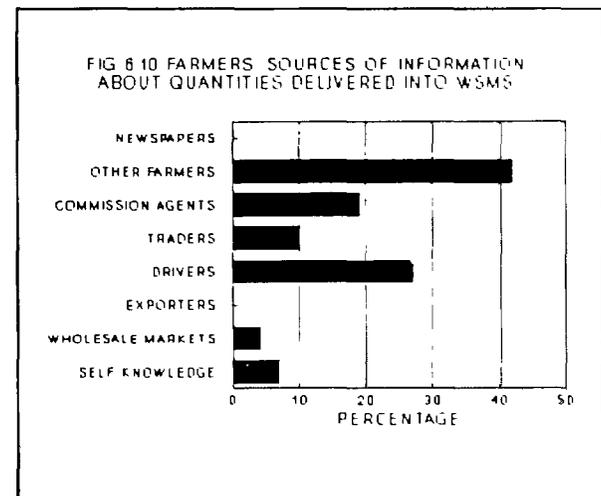
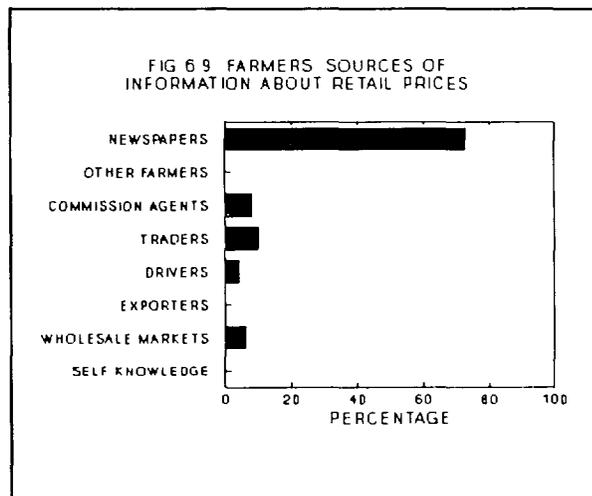
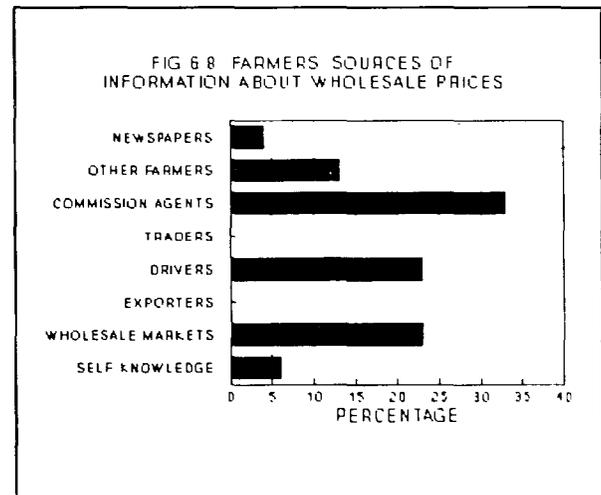


Farmers are more likely to have information on wholesale market prices and quantities, but far below half of the farmers even said they receive that information.

The main source of market information for farmers is the commission agent (Figure 6.8). Other farmers and truck drivers are the next most important sources of information. But the reality is that few farmers regularly receive reliable information from any source.

Farmers learn about retail prices almost exclusively from the newspapers (Figure 6.9). Most newspapers in Jordan publish the official floor and ceiling retail prices each day.

Information on the quantities of products being sold in wholesale markets is supplied to farmers primarily by other farmers, truck drivers and commission agents in that order



(Figure 6.10). It is interesting and significant that commission agents are relatively unimportant sources of that information and of price information. One would expect them to be providing information to farmers as a regular service. Their role should presumably be to assist their farmer clients in deciding when and how much product to market to achieve optimum prices.

Again, other farmers and commission agents are the most important source of information on the quantity of fruits and vegetables exported (Figure 6.11). But it must be stressed that **the percentage of farmers having complete and accurate information at all is very low.**



About 55 percent of the farmers use the market information to decide when to harvest and how much to send to the market. About 27 percent said they use the information primarily to decide where to market their produce (the market offering the highest price).

The major source of market information for commission agents is direct observation in the market where they work (51.5%). Also mentioned were the export market (20%), the newspapers (15%) and other markets (14%). The commission agent survey clearly indicates that the Amman wholesale market is considered the most important in terms of price information. Nearly half of the commission agents in Irbid and Zarqa look to Amman as a major source of information, while only 4 percent of the Amman commission agents look to those markets for important information.

Commission agents gave the following uses of market information:

- (1) helps to provide the largest quantity possible of products for export, if the commission agent knows there is a rise in external prices (20.6%),
- (2) helps to decide the price at which the auctioneer will begin (17.4%),

- (3) helps in the process of selling the commodities, according to their availability in the market (13%),
- (4) to determine the minimum quantities and qualities that should be delivered into the market (12%), and
- (5) to provide information to farmers as a way to obtain his product on consignment (10.9%).

SELLING PRACTICES

Products are loaded in the field onto small unrefrigerated trucks, usually provided on a trip rental basis by independent truck owners. A few farmers own their own pickup or small truck. It was found that about 8% of the farmers in Mafraq, and 75% of the farmers in the Amman growing areas use full loads of trucks. On the other hand about two thirds of farmers in the other areas do not send full truck loads. This could be explained by the fact that farms in Amman and Mafraq are relatively large, while the farms in other areas are small.

Most of the farmers in the Ghore area and Zarqa share in the rental of a truck with other farmers. In Irbid most of the farmers who do not send full truck loads, also share trucks with other farmers. In most cases, the carrier is responsible for finding partners to share the trucks.

It was found that about 36 percent of the farmers accompany their products to the market, about 8 percent send a relative, and the rest send it with the carrier alone. Also it was found that only 10% of the farmers use trucks sent by exporters.

When the trucks reach the wholesale market, the cargo is checked by the AMO inspector, and a receipt is obtained from the municipality officer, which must be signed by the commission agent who receives the products. Most of the commission agents sell all the products before the end of the day. If some produce is not sold that day, it is either stored without refrigeration for sale the next day, or in few cases, sent back to farmers or to other markets.

There are refrigerated storage facilities in Amman, Zarqa and Irbid wholesale markets, but they are not used for fruit and vegetable storage.

Selling Methods

According to article (19) from the Amman Wholesale Central Market Regulation No. 14, 1966, all products should be sold on an auction basis, except for the products which have a value less than 5 J.D., and for dry products such as potatoes, onion, and garlic. In addition, imported products are exempted from being sold on an auction basis.

It was found from the commission agent survey that about two thirds of the products sold in the three wholesale markets were sold on an auction basis, while about 28 percent of the produce was sold by direct individual negotiation.

These results were corroborated by the respondents in the retailer survey. Retailers on average said that about 60% of their supplies were purchased on an auction basis, and 24 percent by both auction and mutual agreement.

Although re-selling in wholesale markets is forbidden by market authorities, the research team found that there are some cases of re-selling in these markets. This was clear in Amman and Zarqa wholesale markets. This practice may affect the prices in these wholesale markets, and opens the possibility of illegal acts by the auctioneers, i.e. quick and low priced sales to a relative or good friend who agrees to pay the auctioneer some additional commission.

SERVICES OFFERED BY WHOLESALE MARKET USERS

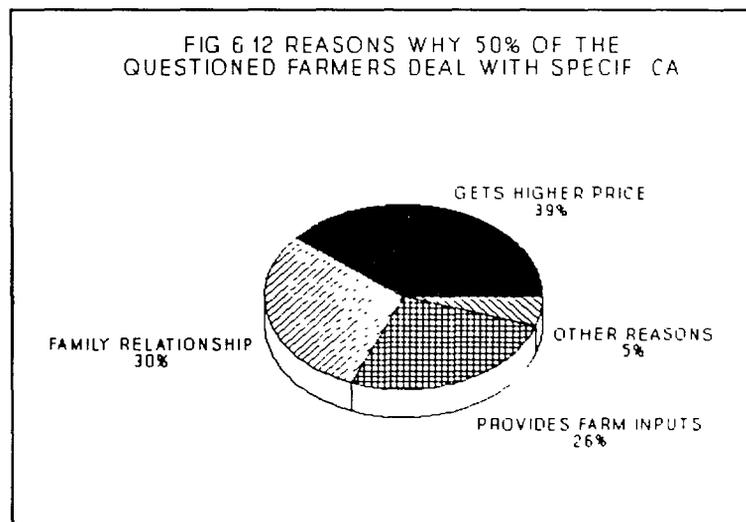
The wholesale market is the most important part in the marketing channel. It provides the following services or functions:

- (1) price discovery for market clearing by pooling knowledge of buyers and sellers regarding supply and demand conditions to reach a price that just clears the market;
-

- (2) controlling market flow by providing information that can help producers adjust the timing of harvest and delivery to receive the best return for their products and to reduce instability in market flows;
- (3) convenience to sellers and buyers: The wholesale market saves the producer time and other resources that would be required to sell directly to consumers, retailers or exporters. Producers also receive information regarding proper packing and other delivery methods from the wholesale market. Those using the wholesale market can be assured of an outlet for their produce, although not always at their preferred price.
- (4) risk reduction: A producer who sells directly to retailers or consumers risks having no market when he has produce to sell and thus risks losses due to deterioration of quality or spoilage of his produce. A producer who does not sell through the wholesale market also risks selling his commodity at a lower price than justified by supply - demand conditions.²

The sales of products through commission agents in the wholesale markets was examined. Farmers were asked if they deal with a specific commission agent most of the time. Half of them said they do. About 39 percent of those farmers said they deal with a single commission agent because he gets higher prices for their product (Figure 6.12). Thirty percent said they deal through the single agent because there is

a family or friendship relationship. About 26 percent of the farmers who deal with a specific commission agent said the latter provides them with farm inputs.

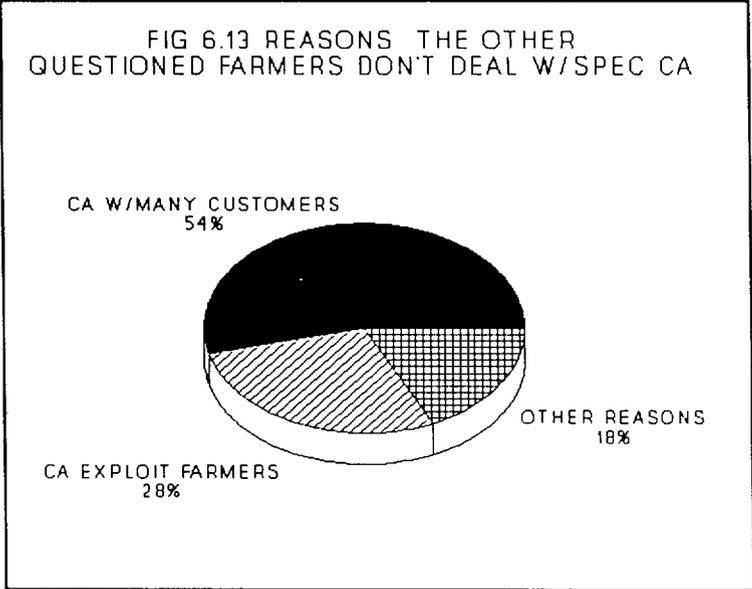


² Jiron, R. et al., *Agricultural Policies Affecting Production and Marketing of Fruits and Vegetables in Jordan*, Abt Associates, Inc., Jordan 1988.

On the other hand, when the farmers who said they do not deal with a specific commission agent were asked about their reasons, about 54 percent indicated a preference for the freedom to deal with the commission agent who has large number of customers and can give him higher prices, and about 28 said that the commission agents exploit the farmers (Figure 6.13). It seems that farmers view the commission agent as their buyer rather than as a simple broker as the name implies.

It was found that about 41 percent of the farmers receive the value of their products from the commission agents after a week, while 25 percent of them receive it immediately. The rest have other arrangements.

The survey showed that only about 6 percent of the farmers set conditions on the commission agents. These conditions are (1) to get a good price (75%), (2) get the permission of the farmer before he sells the produce (8%), and (3) if the price is low, the farmer asks the commission agent to hold the produces until the next day (17%). On the other hand, the farmers who do not set conditions on the commission agents, listed nine reasons. The most important ones are: (1) farmers think they can not change the price, because it is set according to supply-demand conditions (62%), (2) commission agents get a fair price for the produce (14%), and (3) the farmer is afraid of the negative side effect of imposing selling conditions (13%). Such side effects may include, the commission agent postponing the sale until the prices are low, and bad general relationships with the commission agent.



On the retailers side, about 23 percent receive some kind of special services from the commission agent. The most important was the provision of credit (19%). About 4 percent of the retailers said the commission agent provides them with especially high quality products.

When the commission agents were asked about the services they offer to the market participants, they responded as follows :

services to farmers:

- 29 percent said they provide credit,
- 28 percent provide market information,

services to retailers:

- 11 percent re-sell some of the products in the market for retailers,

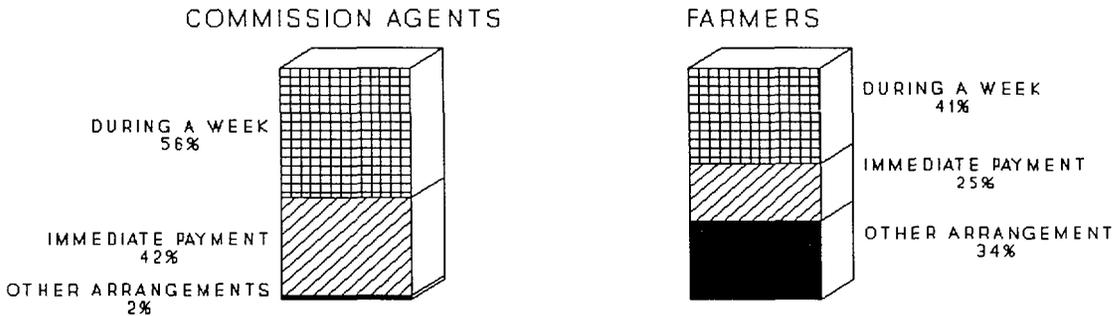
services to exporters,

- about 30 percent buy products on behalf of exporters,
- 16 percent provide exporters with market information,
- 15 percent provide especially high quality products.
- nearly 90 percent provide credit to exporters, 25 percent collect in one month, 25 percent in 2-4 weeks and 44 percent after one week.

When asked when payments are made to farmers, 42 percent of the commission agents said they pay farmers immediately. About 56 percent of the commission agents said they pay within a week. Two percent of the commission agents said other arrangements were made.

Figure 6.14 compares these responses of commission agents to the responses of farmers to a similar question. Only 25 percent of the farmers said they receive payment immediately while 41 percent said they receive payment within one week. Thirty-four percent said they have some other type of payment arrangement. It may be those farmers who have borrowed from the commission agent and are expected to deliver product to pay off the loan.

FIG 6.14 COMPARISON OF C.A. AND FARMER RESPONSES CONCERNING PAYMENT



These results indicate that farmers are providing a good part of the financing of fruit and vegetable exports. Commission agents act primarily as the conduit for that financing and provide additional credit to exporters.

PRICE DISCOVERY AND FORMULATION

The process of price discovery in the wholesale markets of Jordan is one which occurs without direct official interference. On the other hand, retail prices are regulated through the actions of a committee appointed for that purpose with implementation of those prices supervised by the Ministry of Supply. This section will treat briefly each of these topics.

The Representativeness of Reported Wholesale Prices

On each market day, the authorities of the wholesale markets in Amman and Irbid collect information related to the fruit and vegetable transactions which have taken place up to mid-day. Accordingly, estimates are made of the high, low and common (most frequent)

prices for each of the major products traded. These data are reported in tabular form to the Ministry of Agriculture, the Ministry of Supply and the Agricultural Marketing Organization. The 'Retail Price Fixing Committee' utilizes these data in formulating the upper retail price for two qualities (grades) of each product for the following day. The importance of the representativeness of these data, therefore, is obvious.

In order to examine the representativeness of the reported wholesale prices, it was decided to compare them to a sample of actual transaction prices recorded in the Amman Central Wholesale Market (ACWM). A data file was created containing information from several thousand wholesale tomato transactions in the ACWM during the calendar year 1988. Data from these transactions were checked for consistency, data entry errors were removed, and all data was converted to standard units of measure. From the final data set, weighted means were calculated for each market day. Next, two separate correlations were run to compare the reported Common Wholesale Price (CWP) to the calculated Weighted Mean Transaction Price (WMTP) -- an annual correlation of daily prices and a monthly correlation of daily prices. The results of these analyses are contained in column one of Table 6.3. The correlation coefficient for the full-year of daily data (0.98) is highly significant, indicating that the reported CWP is highly representative of the WMTP. With the exception of the month of December (0.49), the correlation coefficients for the daily data segmented by month, are all significant or highly significant, ranging from 0.67 in the month of September to a high of 0.98 in the month of May.

A second hypothesis was tested to determine the responsiveness of the CWP to the quantity of tomatoes entering the Amman Central Wholesale Market (ACWM). These results also are shown in column two of Table 6.3. The correlation coefficient for daily data for the entire year was significant (0.63). However, when the data was segmented by month, the correlation coefficients were not significant; some actually were positive. It is possible that buyers and sellers in Irbid and other markets are basing today's prices on yesterday's prices and quantities in Amman. Since this analysis cannot be considered to be complete (it does not take into consideration many other market factors which affect prices) further study is required before any definite conclusions can be drawn.

Table 6.3 Correlation Coefficients Between the Common Wholesale Price (CWP) and the Weighted Mean Transaction Price (WMTP), and Between the CWP and the Quantities Entering the Amman Central Wholesale Market for Tomatoes During the Year 1988.

Month	WMTP Vs. CWP	QUANTITY Vs. CWP
January	+0.77	-0.24
February	+0.73	-0.03
March	+0.97	-0.62
April	+0.82	-0.05
May	+0.98	-0.43
June	+0.96	-0.53
July	+0.91	+0.12
August	+0.74	+0.14
September	+0.67	-0.07
October	+0.92	-0.10
November	+0.92	-0.73
December	+0.49	+0.03
Full Year	+0.98	-0.63

Source: Agricultural Marketing Organization

Retail Price Fixing

As previously mentioned, information is reported from the wholesale markets regarding the "Upper", "Lower" and "Common" wholesale prices. No rigorous method is employed to determine these prices. The methodology does not consider directly the quantities marketed at the various price levels. However, the analysis reported in the previous section indicates that the reported Common Wholesale Prices for tomatoes in the ACWM were representative of actual transactions for that market in 1988.

Utilizing the reported wholesale prices, the four-member Price Fixing Committee formulates a two-tier retail price series for the following day. Although termed "upper" and "lower" retail prices, the two prices published for each of the major fruit and vegetable products are actually defined as the upper retail price for "first" and "second" quality grades of each product. In determining the margins of the retail prices above the wholesale prices, the committee relies mainly on its members' "market experience" and "personal judgement". Consequently, retail margins do not represent fixed proportions of the wholesale prices.

In interviews with a stratified sample of retail establishments selling fruits and vegetables, it was found that about 82 percent of the retailers reported that the "fixed" retail price of these products affects their buying practices. About 34 percent of these said that it decreased or eliminated their profit margins; some 18 percent indicated that the practice caused them to cease their buying activities; while about 12 percent said that they decreased the quantities purchased. Another 10 percent of these retailers reported that price fixing limits their range of choice. In general, the retailers interviewed hold a less than positive opinion of the effects of retail price fixing.

In the same survey, some 68 percent of the interviewed retailers responded that they would pay higher prices for better quality produce (price differentiation based on product grades). Of these, about 57 percent said that product grading would permit them to better fulfill their customers' demands and would tend to increase the speed of their sales. Another 18 percent reported that price differentials based on grades would assist them in gaining more customers and increasing their returns.

In the survey of commission agents, about 79% of those interviewed indicated that they thought that retail price fixing affected wholesale prices. Of these, some 50.4% of the agents were of the opinion that fixed retail prices restrict dealers' buying patterns, basing their decisions as to the mix and total quantity of products to be purchased on the published fixed retail price (determined by the previous day's wholesale prices) rather than on the wholesale market conditions of the day.

Of the eighty-two commission agents responding to the survey question, a majority (61%) were of the opinion that retail price fixing should not be continued. About 52% of these agents said that, since the practice is not soundly based, it is inaccurate and, therefore, prefer to depend on the elements of supply and demand in sales operations. Sixteen percent of the agents responding indicated that the practice should not be continued due to the fact that retailers do not abide by it. Some 8% of the agents in this group were of the opinion that price fixing does not consider product quality, thereby helping farmers practice "topping" of produce. Another eight percent said that it does not provide them with either the actual price which they can pay the farmer or the price which they can charge the retailer. Almost 10% of the agents who preferred elimination of price fixing, were in favor of floating prices as a measure to increase competition.

Not insignificantly, about 32 of all commission agents responding (39%) indicated that they thought that price fixing should be continued. Of this group, about 41% reported that the practice is necessary in order to protect the consumer and/or control the wholesaler and retailer. Another 18.8% said that price regulation should be continued, but only on the basis of product quality. Some 12.5% of the agents in this group preferred the continuation of price fixing as a mechanism to help buffer sharp price fluctuations. Finally, 6.3% of the agents who favored price fixing simply said that it is "satisfactory".

Indifference toward the practice of retail price fixing was expressed by about 11% of the commission agents interviewed in the survey.

Further Analysis

A more extensive treatment of the topic of price discovery and formulation, including a more complete analysis of the representativeness of Common Wholesale Prices has been

reported in a separate study.³ That study also provides the first systematic analysis of price patterns for the major fruits and vegetables and establishes the methodology which will be used regularly by AMO in providing price information in the future.

MARKET INTEGRATION

The distinguishing feature of a perfect market is that a uniform price prevails through space and time after adjustments are made for transportation and storage costs.

With respect to spatial relationships in marketing, the price surface is highest at the points where the local demand is greatest relative to the local supply. But as long as the high point does not get higher, by more than a transportation and handling charge, than prices in the nearest surplus region, the market is still perfect.

In an efficiently integrated market system, there will be positive correlation over time among prices at different market locations. Since correlation coefficients directly measure how closely prices of a commodity move together in various market places, they are often used to test the hypothesis that local markets in developing countries are not integrated, and therefore not efficient.

To examine the above mentioned hypothesis, daily wholesale prices of selected vegetables (tomato, potato, and cucumber), as well as grapes and lemon, were collected for three periods: January 1-11, May 2-24, and August 1-11. The prices were collected from the three central markets: Amman, Irbid and Zarqa. The correlation coefficient for each crop in each period was calculated for the three markets. Annex VI summarizes the results.

In general, the correlation coefficients were relatively low for most of the selected crops during the different periods. There are some exceptions, e.g. tomatoes sold in Amman and Zarqa in August (0.78), lemons sold in the three markets in August, cucumbers sold in Amman and Irbid (0.82) and Irbid and Zarqa (0.74) in January.

³ Quesada, Norberto, *Retail Price Control of Fruits and Vegetables in Jordan*, Agricultural Marketing Development Project, Amman, December 1989.

There are two cases where the correlation coefficients are negative, these are between Amman and Zarqa for cucumber sold in August (-0.05), and between Amman and Irbid for lemons sold in January (-0.24). That suggests the prices in these markets for the mentioned crops go in opposite directions.

Since potato imports are monopolized by the Agricultural Marketing and Processing Company (AMPCO), the wholesale prices were almost constant, this produced perfect correlation (1.0) between Amman and the other two markets.

The figures in Annex VII show the wholesale price relationships. They emphasize the results from the correlation coefficients. They show that large price differences appear periodically between markets.

The conclusion is that the three markets are relatively independent; that is, the movement of produce between these markets is limited. It also suggests that there is little available exchange of market information between agents in the three markets. This result was emphasized by the field survey which showed that there is a little movement of fruits and vegetables between the markets and that market participants have very limited access to timely market information.

ANALYSIS OF MARKET CONDUCT HYPOTHESES

Each of the market conduct hypotheses are evaluated below in light of the foregoing research results.

Auction Procedures

Auction procedures do not assure fair and open price formation in response to true supply and demand conditions. The wholesale market regulations stipulate that products are to be sold through auction except for products of JD 5 or less. It is clear that the regulation is being violated, especially in Amman. Both the retailers and commission agents indicated that no more than two-thirds of the product is sold through auction - and it appears that many of the individually negotiated sales are being made before the auction begins in the early morning.

The structure of the auction sales procedure is not conducive to assuring optimum price formation. Farmers deliver their products to any one of 55 commission agents. The commission agent makes the decision as to what order the product will be sold. Each commission agent may receive a large number of different products on any given day. Hence, when the auction begins, individual sales of lots of any given product may be going on simultaneously by several different commission agents at different locations in the market. Buyers and sellers have difficulty learning of auction prices on any particular product in other parts of the market. The problem is exacerbated in Amman by the fact that product arrivals and sales continue throughout the day. An ideal auction market is one where all the product being offered in a given day is assembled in one area and information on the quantity for sale is available to all buyers and sellers. Auction sales are then conducted in such a way as to assure open access by all buyers to purchase any lot of a particular product, with immediate information on sales prices to all buyers and sellers.

Selling Periods

Selling periods are structured so as to scatter sales over a long time period each day giving commission agents and wholesalers an advantage over farmers and retailers. As noted above the selling period in Amman is spread over several hours. The reason for that procedure is that the current wholesale market facility simply does not have adequate space to receive and hold all the products arriving in the market on a given day. Consequently, products must be sold soon after arrival. Under these circumstances prices vary considerably during any given day in response to the ebb and flow of product arrivals. Since commission agents and exporters can easily be present in the market throughout the day they have full access to prices and quantities during the day. Farmers, on the other hand, are represented in the market only during a brief part of the selling period.

Product Re-selling

Re-selling products in the market on the same day creates the image of abundant supplies and drives prices down artificially while benefitting commission agents and product buyers at the expense of farmers. Products are frequently purchased early in the day by traders or by commission agents themselves who re-sell in smaller lots (as little as one box) to retailers, restauranteurs and even consumers. Even the casual market

observer can recognize those sellers and identify them as specialized intermediaries offering the service of providing product assortments in smaller quantities to those who cannot purchase the large quantities offered at auction. Some of the re-selling is done by employees or "partners" of commission agents. The physical presence of the product in the market may give the impression of abundant supply, but it was impossible to objectively confirm that hypothesis.

Collusion Among Buyers

Overt or tacit collusion exists between some exporters, commission agents and wholesalers. It is difficult to determine if tacit or overt collusion exists among buyers. However, especially in the Amman wholesale market, there is a great deal of personal contact among commission agents and exporters. And in some cases the commission agent is an exporter. The exporters provide market information on export markets and commission agents reciprocate with information on sales in Jordan. Commission agents are providing a lot of the inventory financing for exporters by accepting delayed payment for products. Ninety percent of the commission agents extend credit to exporters, half of which is for 14 days or more. Nevertheless, there is no clear evidence that prices are overtly controlled through collusion.

Discriminatory Pricing

Among other consequences of the above conditions, there is discriminatory pricing, i.e., some buyers are able to purchase comparable quality produce at lower prices than others. It was not possible to quantitatively test the hypothesis that some buyers are able to purchase comparable quality produce at lower prices than others. Available sales price data are not differentiated by buyer. Casual observation suggests that exporters, who purchase in larger quantities - often by the truck load, do pay somewhat lower prices. But that price differential might be economically justified by the lower handling costs associated with large volumes and the convenience to the seller.

ANALYSIS OF PRICE FORMATION HYPOTHESES

The perfectly competitive market provides for the formation of prices which accurately reflect the supply and demand conditions for a given marketing period. Several price formation hypotheses are evaluated below.

Market Information

There is a serious shortage of objective and accurate information on supplies available or expected in the market and on prices. Wholesalers and exporters have more complete information than farmers and retailers. It is clear from responses on questionnaires with all market participants that there is a severe shortage of objective and accurate information on supplies available or expected in the markets and on prices. In addition, only exporters and perhaps a few commission agents have any reliable information on prices in export markets. It is also true that commission agents and exporters have more complete information than farmers and retailers.

Gulf States Market Prices Influence Jordan Prices

Export prices of middle eastern markets serve as the major reference point for wholesale prices in Amman and Amman serves as a major reference point for other wholesale markets in Jordan. Exporters have much more complete information on market conditions in export markets and therefore have a competitive advantage over farmers and retailers in Jordan. It is clear that prices received and the level of demand in Gulf states markets are major factors in price levels in Jordan. The percentage of all Jordanian fruits and vegetables sold in Saudi Arabia and Kuwait varied from 29% in 1984 to 19% in 1988. Demand conditions in those markets significantly affects Jordanian markets. In early 1989, after the dramatic devaluation of the Dinar reduced the selling prices of Jordanian products in Gulf states currencies, monthly exports increased significantly. But prices paid for Jordanian produce did not immediately increase. This suggests that Jordanian exporters were receiving windfall profits which were not immediately shared with farmers - an indication of monopolistic conditions.

Fixed Retail Prices

The official retail price fixing process does not yield prices that consistently reflect supply and demand conditions in the markets and often lead to competitive distortions and to advantages for some market participants. At the end of each trading day a committee in Amman and one in Irbid determine what the fixed retail price range will be for the following for each product. The committee is composed of representatives from the wholesale market management, the Ministries of Supply and Agriculture and the Agricultural Marketing Organization. Since a separate study on agricultural prices

was underway, no effort was made to perform a detailed analysis of the effects of price fixing on price formation in this study. It is clear from interviews with farmers and retailers that the fixed prices do act as a disincentive for retailers to differentiate their product on the basis of quality. The margin allowed by the fixed prices is too low for the retailer to do the quality sorting after he receives the generally low quality product from the market. In some cases, retailers break the law by holding higher quality merchandise in a back-room and offering it to discriminating customers at prices above the official ceiling price. But that is a risky practice and cannot be expected to generate a significant demand for high quality products which could be communicated back to farmers through higher prices.

ANALYSIS OF PRICING EFFICIENCY HYPOTHESES

Fruit and vegetable markets in Jordan are not transparent, i.e., prices in any given wholesale market are not highly correlated with prices in other markets. The results of price correlations among different markets in Jordan clearly indicate that prices are not transparent. There is little correlation between prices in the different markets on any given day, suggesting that there is little instantaneous flow of information on prices and quantities available and that there is little movement of goods from one market to the other (arbitrage). Another way to look at it is that in absence of timely market information, farmers send their products to the nearest wholesale market or select the market at random. In an efficient market, farmers would have information on the quantity of product in each market, the prices being received and could decide where to send their product to achieve the highest possible price.

In the following chapter the results of this analysis of market conduct in light of the analysis of market structure completed in Chapter 5 will be considered to determine the conclusions that can be drawn with respect to the performance of fruit and vegetable markets in Jordan.

ANNEX VI

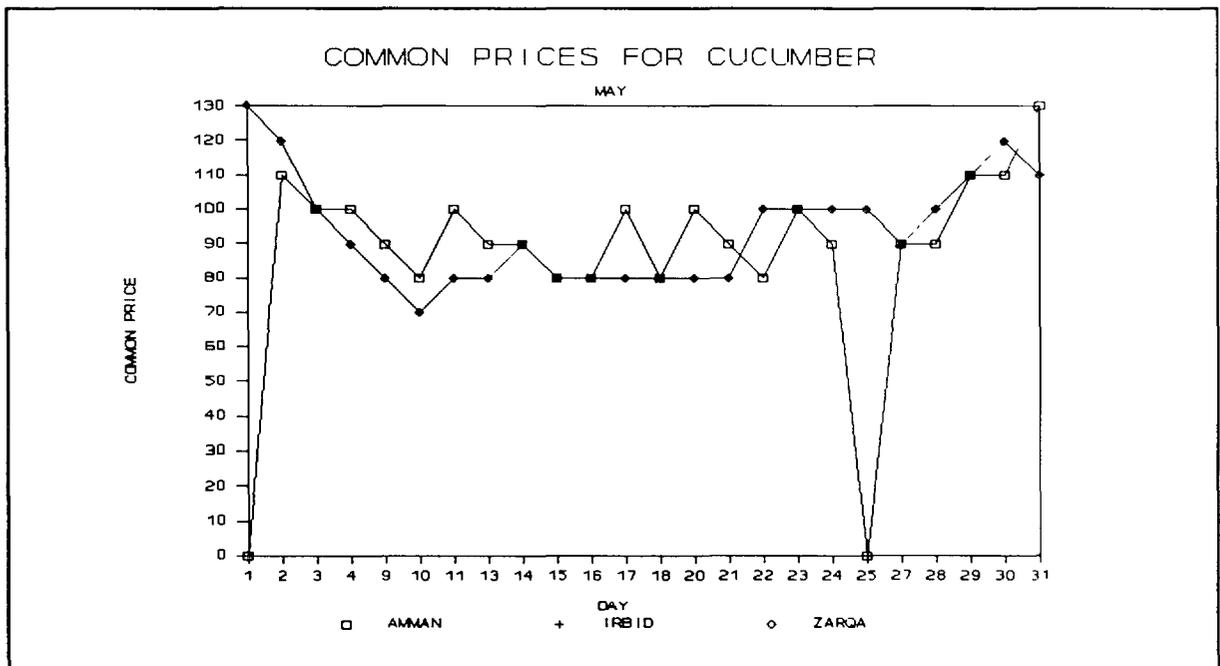
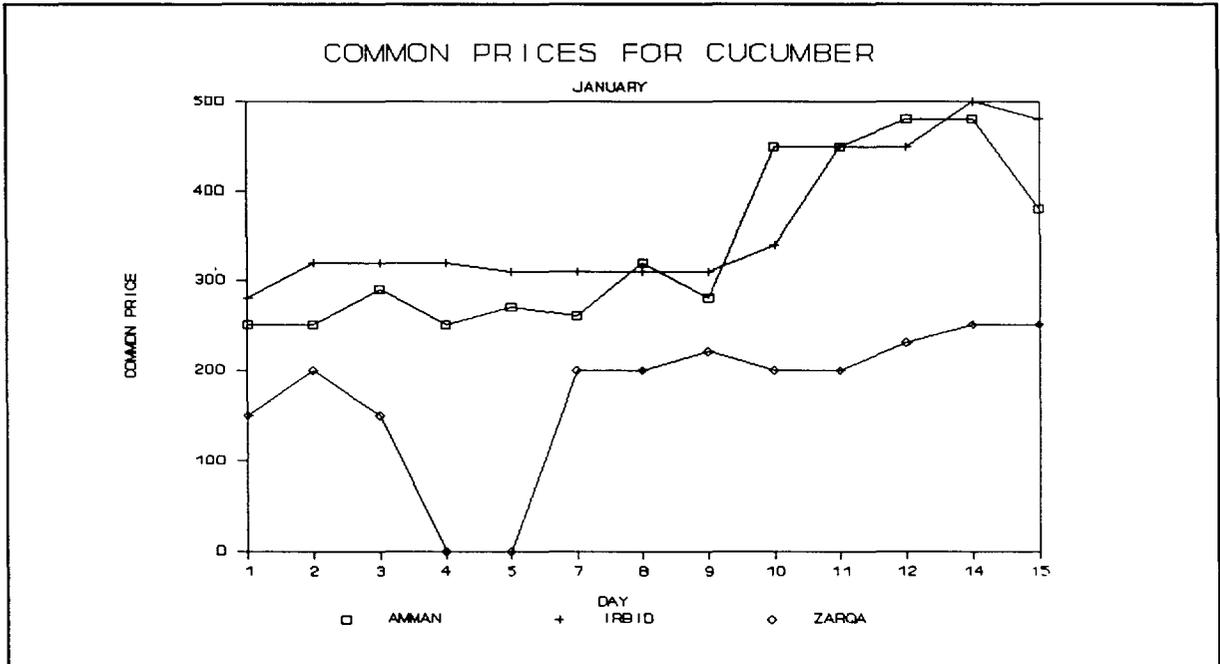
Correlation Coefficients Between The Prices in The
Three Central Markets : Amman , Irbid , Zarqa .

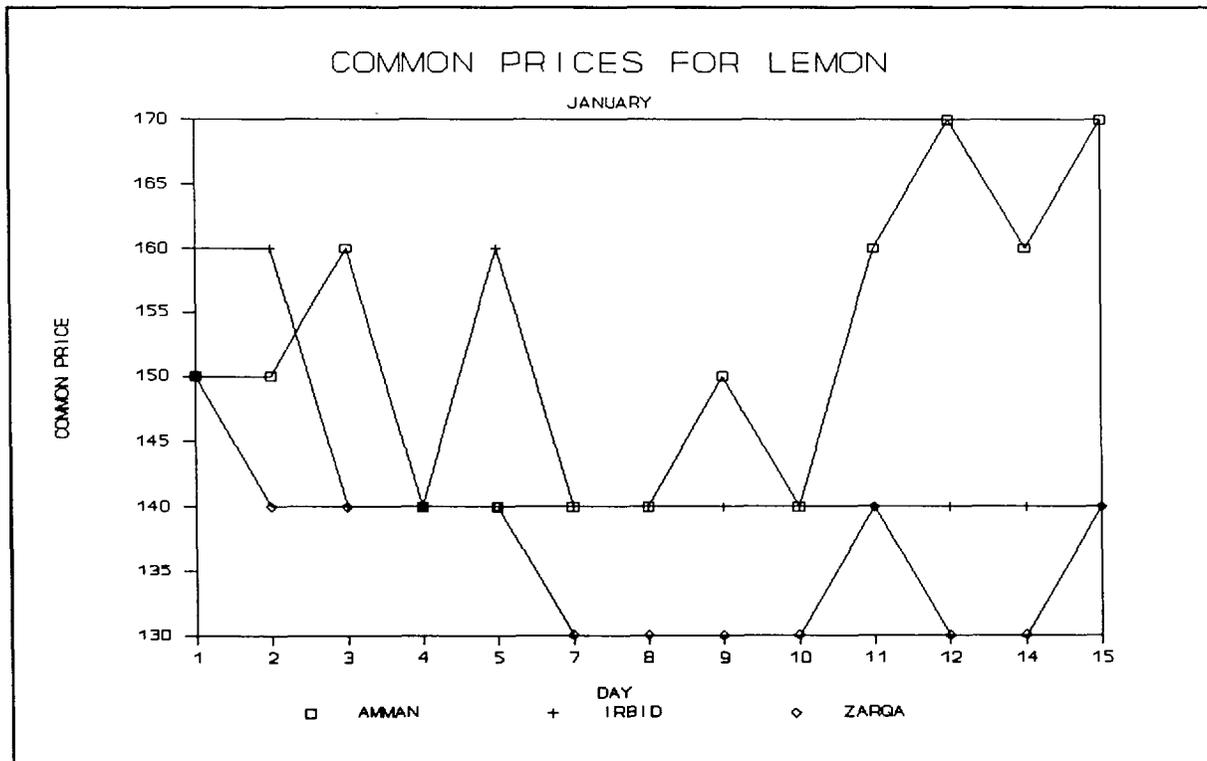
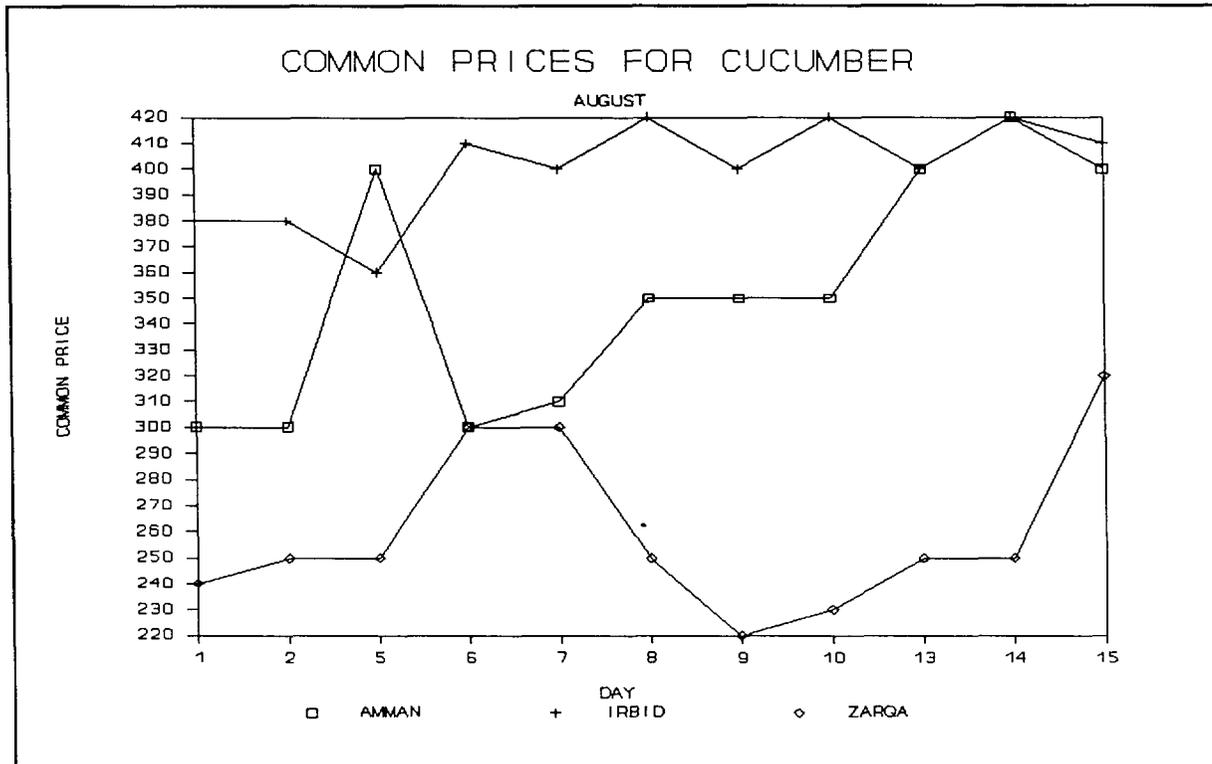
Group	Market	January		May		August	
		Amman	Irbid	Amman	Irbid	Amman	Irbid
Tomato	Irbid	0.45	-	0.27	-	0.14	-
	Zarqa	0.51	0.51	0.27	1.00	0.78	0.05
Potato	Irbid	0.42	-	0.69	-	0.68	-
	Zarqa	1.00	1.00	(na)	(na)	0.57	0.72
Cucumber	Irbid	0.82	-	0.66	-	0.16	-
	Zarqa	0.57	0.74	0.66	1.00	-0.05	0.16
Grapes	Irbid	(--)	-	(--)	-	0.15	-
	Zarqa	(--)	(--)	(--)	(--)	0.18	0.30
Lemon	Irbid	-0.24	-	(na)	-	0.76	-
	Zarqa	0.09	0.63	(na)	(na)	0.71	0.71

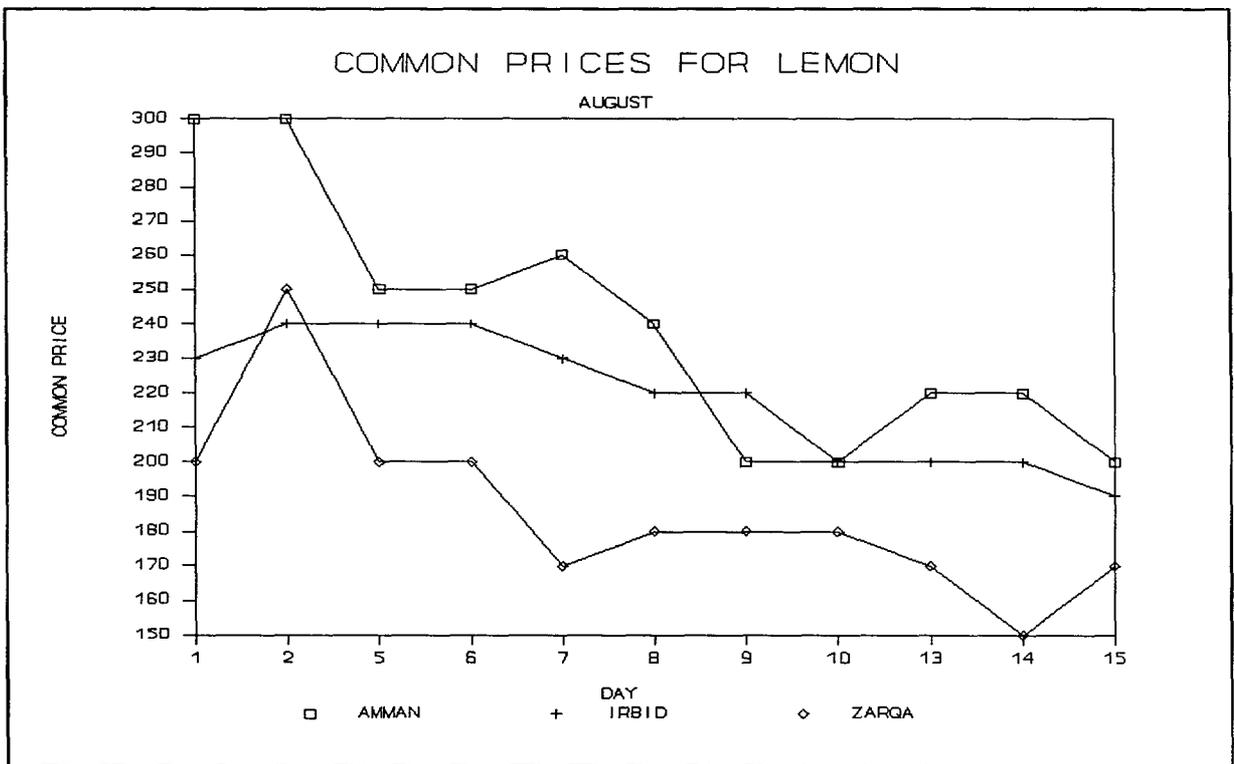
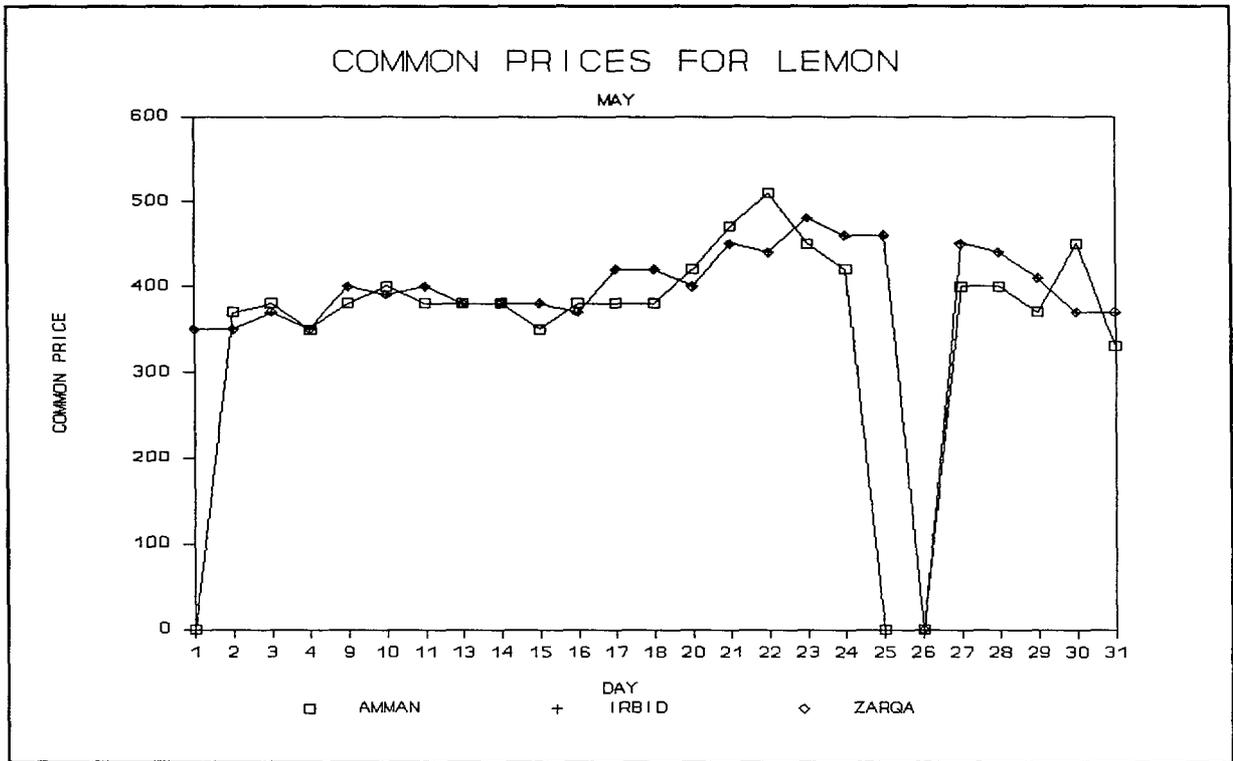
* (na) not available due to missing wholesale prices

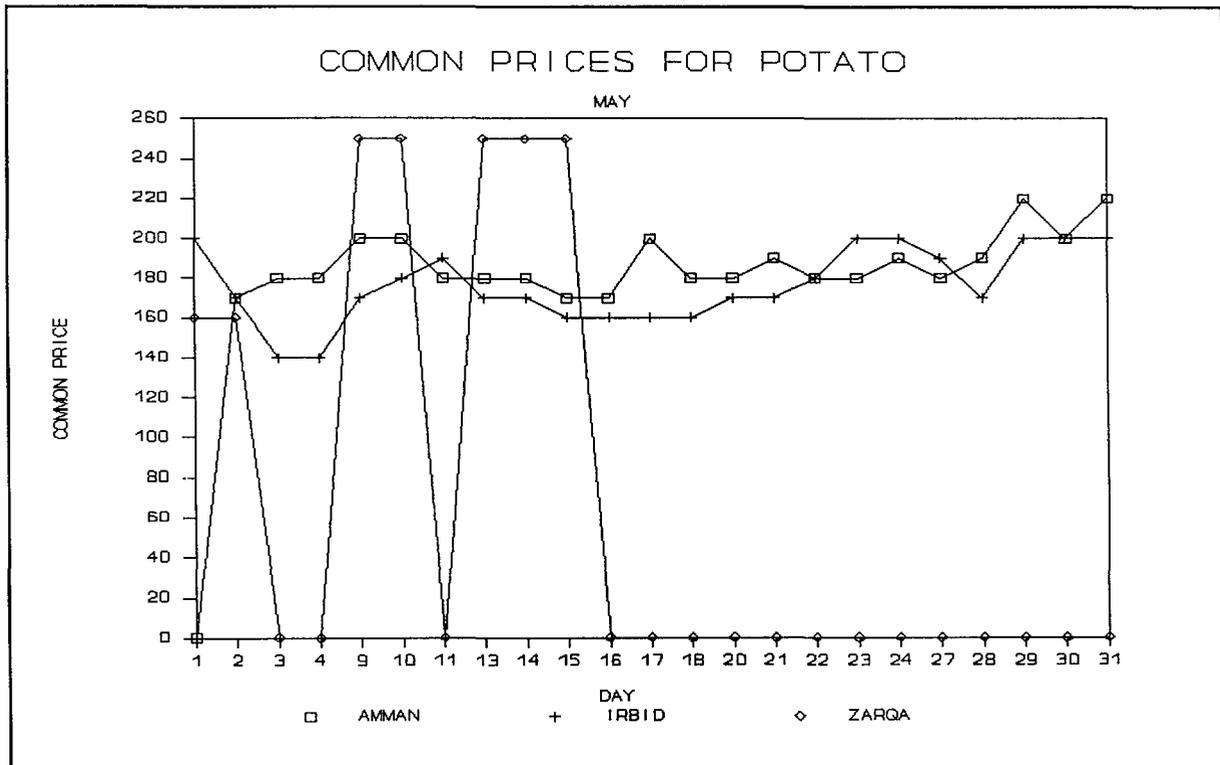
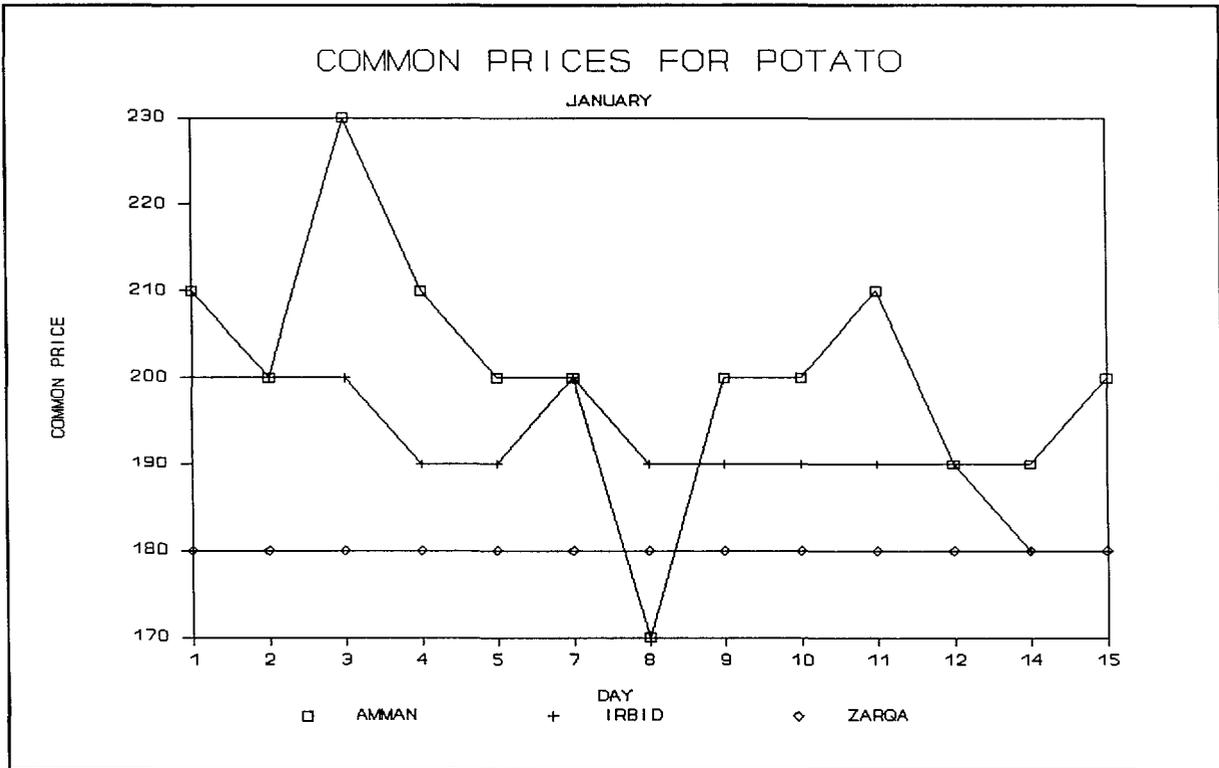
** (--) no produce offered in the market .

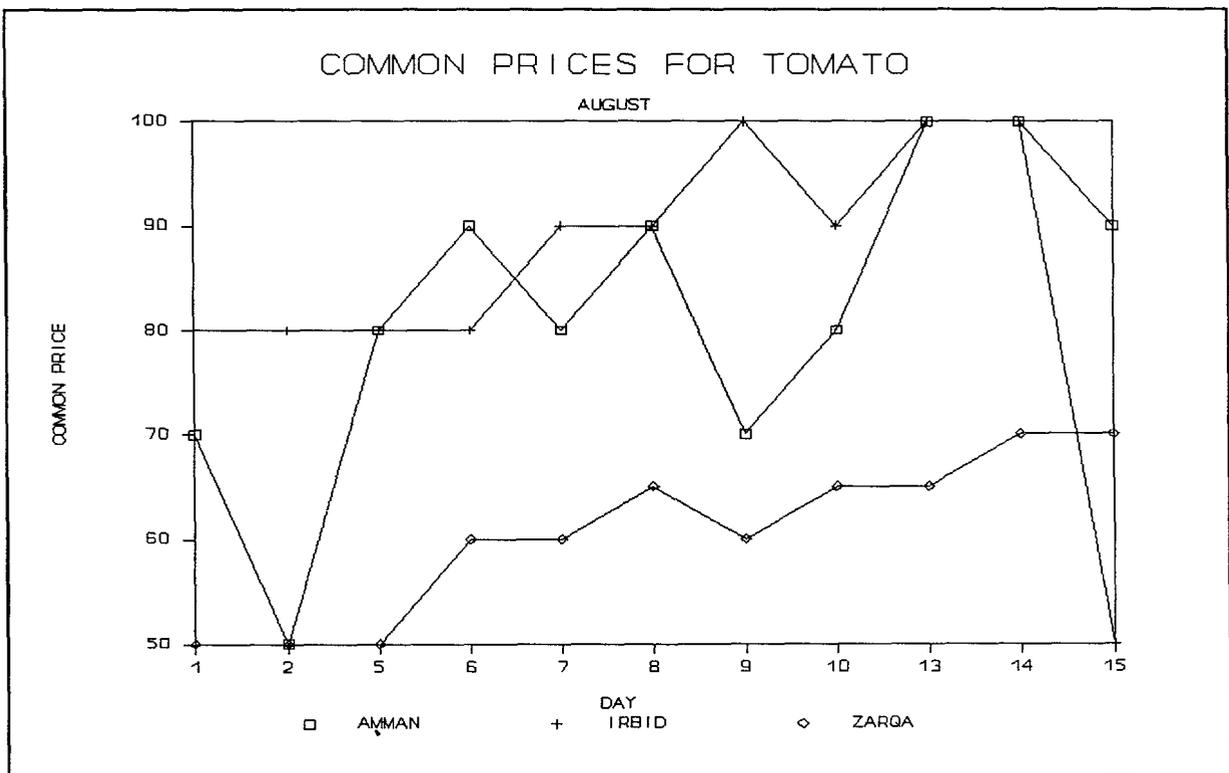
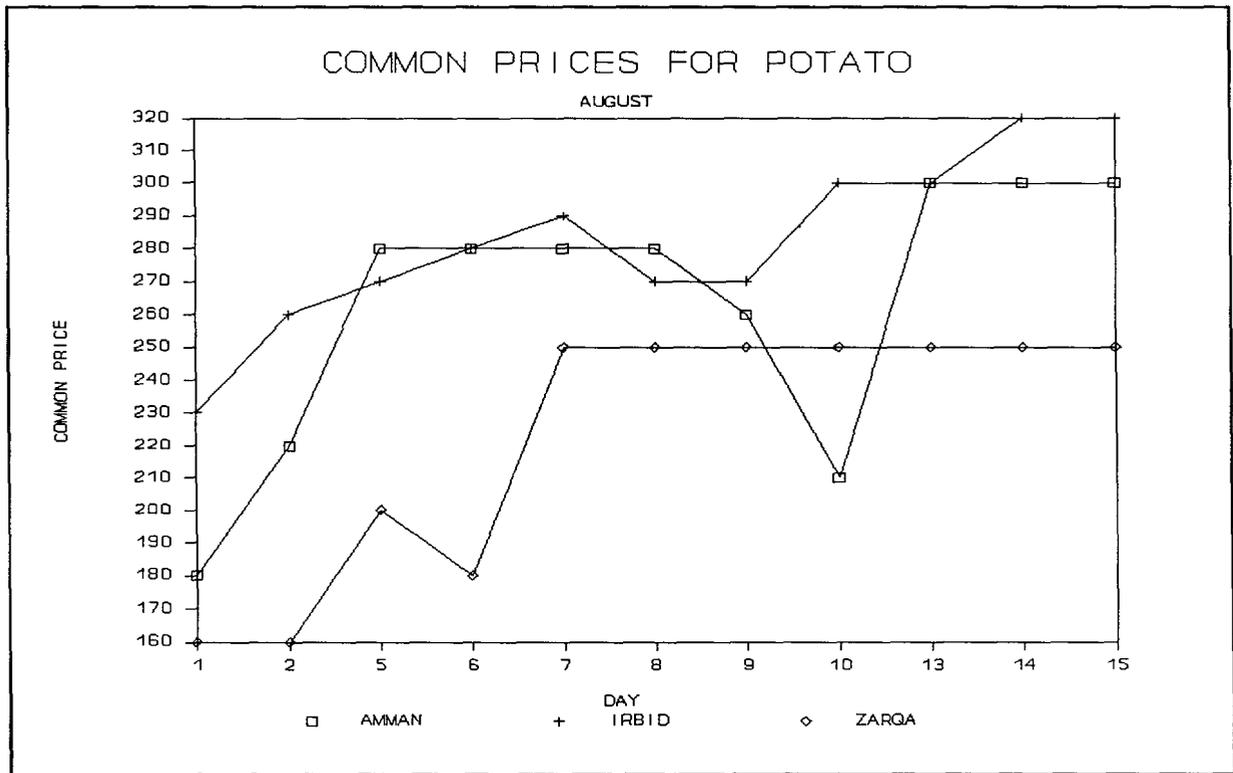
ANNEX VII

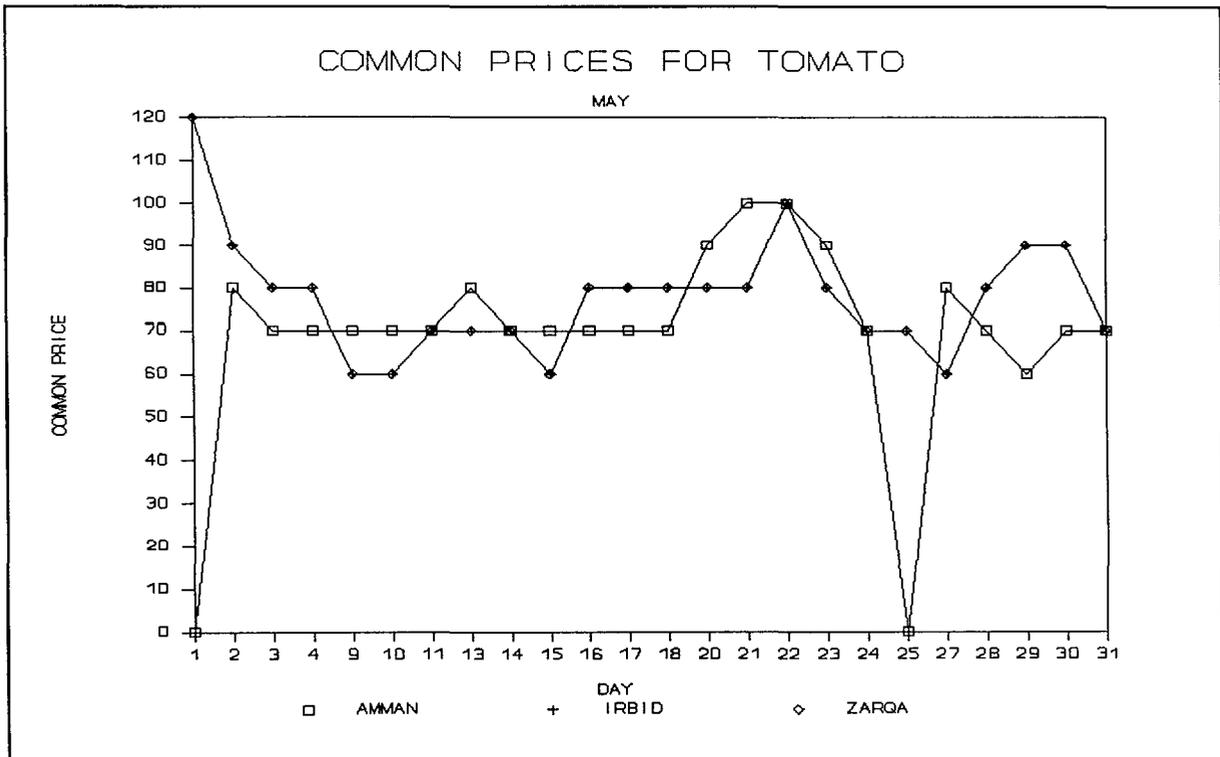
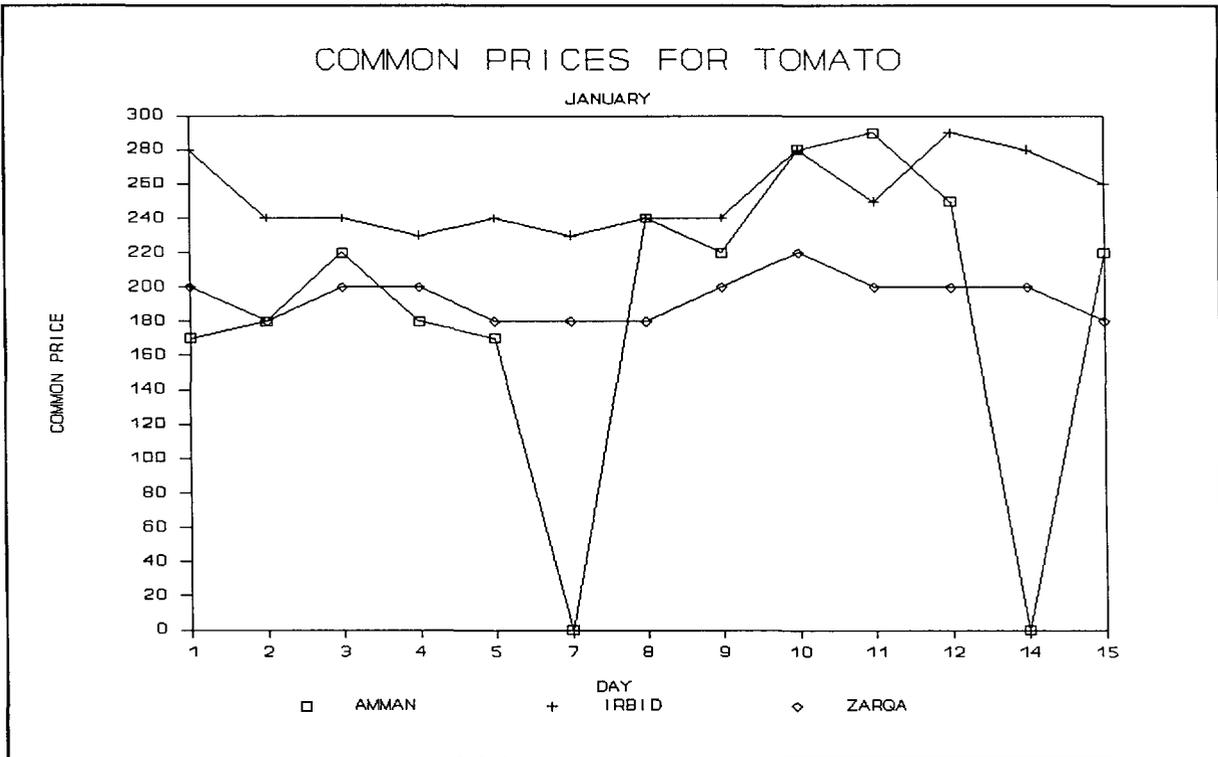


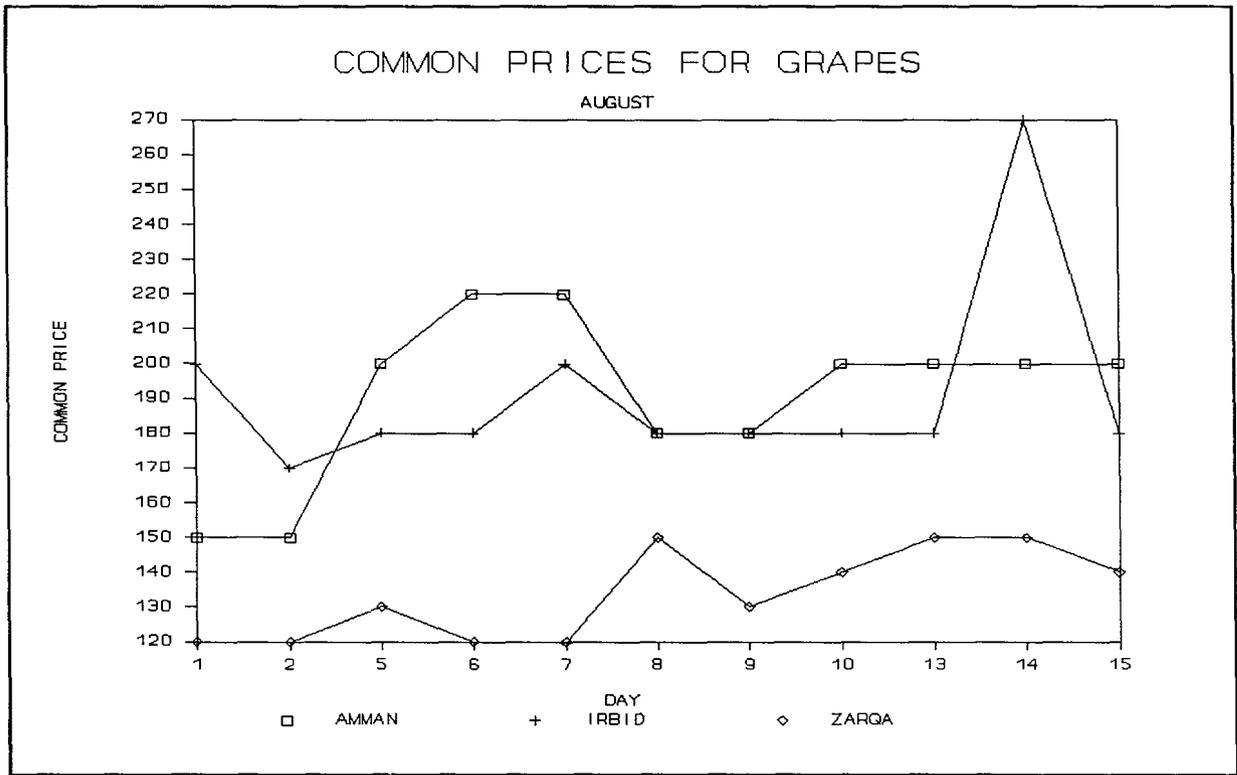












CHAPTER 7

PERFORMANCE OF WHOLESALE MARKETS IN JORDAN

In order to achieve maximum economic development and to equitably distribute the benefits of development, it is desirable that the fruit and vegetable marketing system of Jordan be both **efficient and effective**. Efficiency, as noted in Chapter 1, relates both to operational efficiency and pricing efficiency. The concept of effectiveness in a marketing system goes beyond efficiency to evaluate whether the system is using the optimum technologies, producing the quality of products preferred by customers, encouraging innovation in technology and management, and achieving an equitable distribution of the benefits of improved efficiency and effectiveness. This research focused primarily on pricing efficiency. It also examines the effectiveness of the institutional, legal and infra-structural environment and its impact on performance of the marketing system.

This chapter considers the conclusions drawn from Chapters 4-6 and evaluates the implications with respect to the performance of the fruit and vegetable marketing system. No attempt is made to quantify performance in any way - since no researcher has ever identified any acceptable way to do so. The conclusions are expert opinions on the part of the team of researchers who carried out the study. The objective is to determine if certain factors have caused the system to perform less efficiently and effectively than it might have under different conditions. The last chapter of this report will make recommendations for changes which should improve the performance of the system.

The first major section examines the **effect of the legal and governmental interventions on the performance** of wholesale markets. The second major section considers the **effect of the structure and behavior (conduct) of private firms** in terms of the impact on marketing system performance.

INSTITUTIONAL, LEGAL AND POLICY ENVIRONMENT

This section reviews the conclusions drawn from Chapter 4 and 5 with respect to the institutional, legal and policy framework in which wholesale markets function and the management behavior within those legal constraints.

Conclusions

The following is a summary of the conclusions drawn from Chapters 4 and 5:

1. There is no central independent board to assist in the planning and establishment of wholesale markets throughout the Kingdom under Regulations No. 14 and 59.
 2. No wholesale market, other than Amman, has an administrative board to establish policies and supervise management.
 3. Regulations are not being fully enforced in existing markets, in that all sales are not being made through auction and selling periods do not conform to the regulations.
 4. In all markets except Amman, there are no written internal regulations.
 5. There is fragmentation of responsibilities and poor coordination among the various governmental bodies having some jurisdiction over markets and marketing functions performed in the markets.
 6. Contractors who administer the collection of fees in some markets are not properly supervised and they do not provide accurate price and quantity information for dissemination to market participants.
 7. There is a lack of clear long term policies and plans to respond to expected marketing system developments.
 8. As a consequence, some markets, especially Amman, face severe current limitations of space and facilities, e.g. traffic congestion around the market,
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inadequate reception facilities, inadequate parking, overcrowding of selling areas, extremely long selling hours, lack of sanitary facilities, inadequate facilities to protect products from weather elements.

9. Operating revenues in the Amman market are about 10 times operating costs,¹ implying an income transfer from farmers and consumers to the municipality. Yet in spite of those profits and in the face of an urgent need for additional space, the municipality has not taken action to build a new, more adequate facility outside the central city.
10. Government regulations state that all products entering the city limits of Amman must either pass through the central market or the owner must nevertheless pay the 4 percent fee to the municipality. Exporters often violate that regulation by taking product direct from farms to their workshops in Amman without paying the market fee. Those who pay the fee while not using the market and those who purchase supplies in the market because of the regulation, are incurring unnecessary costs of 10-15 percent (4% for the fee plus 5% commission plus additional handling costs and possible product deterioration).
11. Rental agreements with commission agents, under conditions where no new commercially attractive stores can be offered to others, creates a barrier to entry by new commission agents. Those who obtain a location in the market are guaranteed access to a stream of income from growing commission sales.
12. There are no legal regulations to prevent commission agents from purchasing products for their own account for re-sale in Jordan or for export. As a consequence, 7 commission agents regularly purchase and export product for their own account. Information could not be obtained on the number of commission agents who purchase for local sale, but the practice is widespread. It is almost certain that under such circumstances the commission agent will pursue behavior which will place his suppliers and

¹ Godwin, Marshall, op. cit.

competing firms who do not pursue that strategy at a competitive disadvantage.

13. Sales of individual products are simultaneously performed by different commission agents at different locations in the market, making it difficult for buyers and sellers to determine supply, demand and resulting prices.
14. The retail price control program produces no positive benefits for consumers and inhibits the development of improved quality product while opening the way for violators to illegally charge high prices for premium product.

Performance Evaluation

The effect of these legal and institutional shortcomings is summarized in the following points:

1. Individual **commission agents and exporters** are permitted to accumulate and **exercise monopolistic power** over farmers and retailers resulting in lower farm prices, higher consumer prices and low quality products.
 2. In Amman, inadequate physical facilities inappropriately located in the center of the city have forced the market management to spread market deliveries over the entire night and day which has contributed to **poor price formation and physical inefficiencies**, while the **municipality has continued to reap large profits** from the operation of the market.
 3. The **Municipality of Amman** is benefiting from a **transfer of income from farmers and consumers** by realizing large profits from the operation of the wholesale market with no serious action for improving the market's infrastructure.
 4. The **absence of adequate price formation** through effective information flows has **lessened competition and dampened producer responsiveness to demand** requirements.
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5. The market regulation requiring that market service fees be paid on all products entering Amman **inhibits exporters from pursuing the most efficient methods for obtaining quality products** for export and increases the cost of some exported products by as much as 15 percent.
6. The markets **have not effectively encouraged the adoption of technological and managerial innovations** nor has there been adoption of grading, sorting and packaging practices which could improve the quality of Jordanian product and lead to positive product differentiation.

PRIVATE SECTOR STRUCTURE, CONDUCT AND PERFORMANCE

The government has established the institutional and legal framework within which private firms perform the various marketing functions. The competitive reactions of individual businessmen have resulted in particular structural and behavioral patterns which were analyzed in Chapters 5 and 6. The two succeeding sections summarize those conclusions, while the last section summarizes the impact on market performance.

Structure

The following is a summary of conclusions drawn in Chapter 5:

1. High economic concentration does not exist among farmers or retailers. However, about 20 percent of the fruits and vegetables entering the Amman market are consigned to only 4 commission agents and only four exporters make 38 percent of all exports. Seven of the 55 commission agents in Amman are also exporters or wholesalers. In fact, three of the nine largest commission agents are also exporters. The sales of commission agents who also export represent 16 percent of all sales in the Amman Wholesale Market. Hence, there is moderately high concentration of economic power in the hands of a few exporters, some of which also function as commission agents. Ninety percent of all commission agents in Amman sell to exporters on credit - half of which is for 14 days or more. Thus, there is a complex and close community of interest among commission agents and exporters.
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2. Products are not always purchased by auction and selling periods do not facilitate full competition. The dispersion of products in the market makes efficient price formation difficult, in the absence of effective price information.
3. There is little product differentiation in terms of sorting, grading, packaging and handling improvements for the purpose of improving product quality.
4. Barriers to entry of new commission agents in the Amman Wholesale Market are the lack of commercially attractive spaces, preferred location of existing commission agents with extremely low rents, strong clientele base, size and information advantage of existing commission agents.

Conduct

The conclusions from Chapter 6 on competitive behavior of wholesale market participants are summarized below.

1. Each individual commission agent determines in what order and by what method (auction or mutual agreement) he will sell each lot of products consigned to him. About one third of the volume is not sold by auction.
 2. In Amman, the physical and temporal dispersion of product sales gives large buyers, e.g. commission agents and exporters a competitive advantage over farmers.
 3. Re-selling of products within the wholesale markets may not be a major problem but it does give the false impression of over abundance in the market. That, plus the tendency of commission agents to buy product from their clients and have an employee or agent re-sell it in the market, may depress prices unnecessarily.
 4. Hard evidence of collusive behavior could not be obtained, but the structural conditions do permit a few commission agents and exporters to make collusive arrangements if they were inclined to do so. The fact that commission agents extend credit to exporters must cause them to be
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- concerned about the success of exporters and may result in lower prices to farmers.
5. There is a significant shortage of accurate and timely price and market quantity information, especially for farmers. Commission agents make no effective attempts to correct the situation for their farmer clients.
 6. Gulf states market prices and demand have a significant effect on price levels in Jordan. Jordanian farmers have little or no information on those markets nor does evidence suggest that commission agents use such information to the benefit of their farmer clients. Commission agents are, however, able to use their information advantage to purchase and sell product for their own account.
 7. Government imposed retail price ranges make price differentiation on the basis of quality impossible and discourage retailers from paying higher prices for higher quality produce. Occasionally retailers break the law and sell higher quality product at prices above the announced ceiling, but because it is illegal there is little chance of the incentive to provide higher quality being communicated back to the farmer through the commission agent.
 8. Prices on fruits and vegetables in individual wholesale markets in Jordan are not highly correlated with prices in other wholesale markets in the Kingdom. Prices are not transparent.

Performance Evaluation

The performance implications of the above conclusions relating to structure, conduct and price formation are summarized below.

1. **Commission agents hold powerful bargaining positions** in the marketing system and are potentially able to exercise that power by influencing prices to their advantage as buyers or sellers of product in the same market where they provide brokerage services. The extension of credit to farmers tends to bind the farmer to a single agent who may then pay a lower price than
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supply and demand conditions warrant. Also, even if the farmer has received only a small amount of production credit from the commission agent, he may have to deliver all his product to the agent on a delayed payment basis. Evidence suggests that from 1986 to 1988 several large commission agents/exporters got into financial trouble and were extremely slow in making farmer payments. Some defaulted completely on their obligations.

2. Similarly, **exporters are in a powerful bargaining position** against farmers and may be able to exercise monopolistic pricing through collaboration with commission agents. It is extremely difficult to obtain hard evidence on collusion among independent commission agents and exporters, but researchers are convinced it exists to some extent. And there is apparently no law against it since commission agents are permitted to function both as commission agents and as buyers for export or domestic re-sale.
 3. **Farmers carry the burden of financing** a good portion of both export and domestic retail sales through delayed receipt of payments from the commission agent. Only 25 percent of the farmers receive payment on delivery, 42 percent after a week and 34 percent have other arrangements, presumably payment is received in more than a week.
 4. **Price formation is not economically efficient**, resulting in unnecessary price fluctuations, excessively high prices on some occasions and excessively low prices on other occasions. There is a significant shortage of objective price information, especially for farmers and retailers. Commission agents and exporters are able to obtain better information as a result of their daily participation in the markets and as a result of regular telephone contact in export markets.
 5. The general level of **product quality is low** and there is little incentive to encourage innovation in product sorting, grading, packing, handling and transportation. **Government efforts to control retail margins prevent quality produce** from being legally sold at premium prices. Jordanian fruits and vegetables carry a negative product image in Gulf states.
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CHAPTER 8

RECOMMENDATIONS

The previous chapter evaluated the performance of the wholesale marketing system for fruits and vegetables. The fact that the system is not performing as efficiently and effectively as it might is no surprise. Nor should it be occasion for blame on any particular individual, institution or group of businessmen. It should be seen as the normal outcome of the economic growth process in a Jordan where high population growth, even more rapid urbanization, dramatic expansion in fruit and vegetable production and growing exports have created a need for marketing system adaptation which has not been easy to accommodate. The **old institutional and legal framework is simply not adequate nor appropriate for the new reality**. Intermediaries have behaved as businessmen should be expected to behave. They have taken advantage of every opportunity offered within the confines of the legal and regulatory environment in order to enhance their competitive position and maximize profits. The result of this combination is a marketing system that is not serving the public interest as effectively as it might.

Simplistic solutions to this situation might include strengthening price or margin controls or the creation of a government or farmer controlled marketing company to replace the private intermediaries. Those are drastic measures which have not proven effective in other countries nor has the evidence in Jordan indicated much success with that approach. A more effective approach used in most industrialized nations is to modify the institutional and legal environment in order to take away the factors that lead to unsatisfactory performance. The latter orientation has been taken in the formulation of the following recommendations for correction of poor wholesale marketing system performance in Jordan. It is understood that there will be disagreement on some of the conclusions of this study and especially on the specific suggestions offered here.

There will undoubtedly be opposition from both private and public individuals and institutions whose vested interests will be affected by the recommended changes. But these changes are in reality not drastic. They will not force the disappearance of any

business or government institution. They will, however, force many to change their behavior in order to survive. **But development by definition is change. And change is sometimes difficult and painful.** It is the role of effective government to identify and orchestrate those changes that will most effectively achieve the results which will best promote the public interest with the least amount of disruption. Those have been the guiding principles for development of the following recommendations.

EXPECTED EVOLUTION OF THE SYSTEM

In light of the concepts presented in Chapter 1 and based on the results of this study, it is possible to anticipate some of the directions of change which can be expected in the fruit and vegetable marketing system of Jordan.

High population growth rates will produce a 48 percent increase in the population of Jordan to nearly 4.4 million by the year 2000. Much of that population growth will occur in Amman and other cities where the population growth rate has been even higher than the national average. Population in the City of Amman could exceed 1.5 million by the turn of the century. Fruit and vegetable consumption in Jordan will increase proportionately. Plans must be made now to anticipate the implied demands on the marketing infrastructure, especially the wholesale market of Amman.

Per capita real incomes are likely to begin to improve again as the new government economic policy succeeds. If incomes improve by 2.5 percent per year, the demand for fruits and vegetables as a group can be expected to increase proportionately, placing additional demands on the food marketing system. The combination of population and income growth could increase the demand for fruits and vegetables by nearly 4-6 percent per year for the next 2-3 decades. Plans are needed to assure that those demands are efficiently met.

The volume of food being distributed to consumers by larger scale retailers is likely to increase. Large volume retailers such as supermarkets and hyper-markets with multiple stores are emerging in Jordan. The process is likely to accelerate as it has in most other advanced countries. Those retailers are likely to place new demands for higher quality produce at lower costs. They will introduce a new countervailing competition for commission agents and exporters.

Exports of fruits and vegetables are likely to increase. The recent devaluation and other economic measures has resulted in greater potential profitability for produce exports. But buyers in potential markets are insisting on much higher quality products than Jordan has been supplying. The system must learn how to utilize modern postharvest technologies to produce and deliver such high quality perishable products to Europe and the Gulf states. As noted in Chapter one, it is likely that exporters will gradually abandon the practice of purchasing products in wholesale markets. Direct purchases of bulk products in special markets near the production areas or direct farm purchases, possibly with forward contracts, are likely to become the standard practices of successful exporters.

In the longer term those forces will create a significantly different marketing system than that which exists today. One can expect that most exports will be made by effective "channel captains" who purchase product on a forward contract basis, pack it in their own packing facilities in the production area and ship it out directly. Export products as well as locally marketed products will be sorted, graded, properly packaged and refrigerated to protect their quality. Large scale retailing will be more common. Farmers will need access to accurate price and quantity information from major export markets as well as in the national market.

The following are suggestions for immediate changes which, in the opinion of the authors of this report, will be consistent with the natural evolution of the marketing system and will produce immediate improvements in the efficiency and effectiveness of the fruit and vegetable marketing system through innovative response to the changes which have already taken place as well as those changes which are anticipated.

RECOMMENDATIONS

Recommendation 1: Amend Law No. 15 (1987) which created the Agricultural Marketing Organization and Laws 14 and 59 to authorize AMO to organize and supervise the establishment and operation of all wholesale markets in the Kingdom. The objective is to provide national coordination so that wholesale market facilities are developed and operated in such a way as to contribute most effectively to the evolution of an efficient and effective fruit and vegetable marketing system. To that end an AMO representative would serve on the board of every wholesale or shipping point market in

the Kingdom and would provide research and advisory support to the management of each of those markets.

A central role is envisioned for the Agricultural Marketing Organization because it is the only government body with explicit responsibility, given by Law No. 15 to provide research, analysis and information as well as policy recommendations leading to improvements in the agricultural marketing system in Jordan. That Law did not specify a lead role for AMO in supervising the development and operation of wholesale markets. Yet this study clearly indicates that certain changes in the infrastructure and regulations of wholesale markets are the crucial starting place for improving the economic performance of the fruit and vegetable marketing system. It is therefore logical that the law creating AMO be amended to give the Organization the responsibility and authority to supervise the development of wholesale markets in the Kingdom. No other governmental body has the breadth of interest nor capability to fulfill that role as well as AMO. No single ministry has the trained marketing personnel and accumulated expertise to provide the research and management support required by the municipalities in planning and operating wholesale markets. AMO has recruited and trained the largest single group of agricultural marketing specialists in the Kingdom. The Ministry of Municipal and Rural Affairs has shown no interest in performing the kind of supervisory role envisioned here. The Ministry of Supply's mandate is not sufficiently broad to cover the kind of action envisioned. And the Ministry of Agriculture, since the creation of AMO, has delegated its agricultural marketing responsibilities to that organization.

Recommendation 2: Amend Wholesale Market Regulation No. 14 (1966) to specify that exporters purchasing product in the Amman Wholesale Market must purchase them only in a physically separated area to be designated by the market management some place in or around the wholesale market. The purpose here is to physically separate export and domestic buyers because of their differing requirements in terms of size of purchases, packaging, sorting and grading and in combination with other recommendations to enhance fair competition. Retailers, wholesalers and other buyers for the domestic market generally purchase smaller quantities. Their current product grading, sorting and packaging requirements are somewhat different and they need to purchase their required product assortments quickly. Exporters are more likely to purchase product by the truckload and urgently need to effectuate improvements in the

sorting, grading and packaging of the product. By physically separating the two markets, the individual needs of each group of buyers can be more effectively met.

Recommendation 3: Amend all wholesale market regulations to prohibit any commission agent from functioning simultaneously as a buyer or exporter of produce. It is recognized worldwide that commission agents, (e.g. stock brokers, commodity market brokers, auctioneers and commission agents) must be closely regulated to prevent them from taking unfair advantage of either buyers or sellers. A cardinal rule is that the commission agent cannot be allowed to function as a buyer or seller of products in the same market where he provides brokerage services. The reason is that the temptation is simply too great for the commission agent to use his position and information to profit at the expense of some of his clientele. That appears to have been the case in Jordan.

Recommendation 4: Delete Article 19 of Law No. 14 which requires that all produce be sold by auction and replace it with an article requiring that all produce purchased for export must be purchased in an open auction and that the auctioneers shall be employees of the wholesale market authority and/or AMO. At present, commission agents by their own admission, are selling no more than two thirds of their volume by auction. One of the reasons is that retailers, wholesalers and other domestic buyers are purchasing small quantities and are unwilling to wait for the auctioneer to come to the lot they wish to purchase. It is more efficient for commission agents and buyers to quickly negotiate a price for small lots based on prices established by auction sales. On the other hand exporters purchase larger quantities, there are fewer buyers and there is therefore greater urgency for maximizing the openness of the transaction in order to assure fair prices for farmers who are at a competitive disadvantage.

Recommendation 5: Amend the wholesale markets regulation to require that shipments of each product or product group be delivered to a given location in the market to be sold during a specified time period from that single location. The objective here is to improve the information of buyers and sellers with respect to quantities in the market and the price being paid for a given product at any point in time. The Amman wholesale market management has followed a similar concept in the delivery and sale of watermelons during the peak season. By setting a specific location and time when the selling would start for each product or group of products, sellers and buyers

can schedule their arrivals to fit that time period. Retailers and export buyers could move from one product or product group to the next to fill their needs. A high percentage of the sales could be made directly from the truck, reducing the need for a place to stack the products and reducing the handling costs for products eventually destined for the exporters workshop.

Recommendation 6: Modify the Wholesale Market internal regulations to specify that commission agents purchase a license in an annual auction. The license would give the individual or company the right to offer commission services and would convey the right to rent a showroom and selling space in the export and/or domestic market selling yard. The objective here is to remove one of the existing barriers to entry for new commission agents. Under current regulations existing commission agents pay low rents for store locations which can be occupied for as long as they wish. Those who were fortunate or influential enough to obtain particularly attractive locations have a significant advantage over others and over potential new competitors. With the implementation of recommendation 3, the store location for commission agents will become less important. Nevertheless, competition can be enhanced by the implementation of this recommendation. With commission agents having to bid against others for a commission agents license the effect will be for the wholesale market management to take away the excess profits accumulated by commission agents as a result of their location in the market or due to any other unfair competitive advantage.

Recommendation 7: Amend the wholesale market regulations to eliminate the requirement that exporters pay the market fee on produce which by-passes the Amman wholesale market, going directly from the farming area to the exporters workshop. There is no reason why the Amman wholesale market should collect a fee on product which does not enter the wholesale market. The 4 percent fee increases product costs unnecessarily and probably reduces farmer incomes. In addition, the regulation prevents exporters from adopting direct farm or shipping point market purchases which can reduce physical handling time and product damage.

Recommendation 8: Begin immediately to plan for the construction of a new wholesale market in the outskirts of Amman at a site with efficient access from the major production areas. Even if a feasibility study is initiated immediately, it would be at least two years before a new facility could be completed. Yet the present facility is

already inadequate. The municipality should be encouraged to proceed with its present plans for certain additions and modifications to the existing facility. But those changes are no substitute for a new more adequate and better located facility. The feasibility study should recognize, however, that the percentage of exported product moving through the wholesale market will decrease steadily as exporters build their own packing facilities and move product directly from production areas to those facilities. The major role of the Amman wholesale market will gradually shift to that of facilitating the exchange of produce between farmers and Jordanian retailers. The size, design and location of the market should reflect that expected reality. AMO and the Agricultural Market Development Project could provide assistance in the preparation of the feasibility study for the new market.

Recommendation 9: AMO should institute an effective wholesale market information system to collect and immediately disseminate daily market volumes and prices. The system should also include regular market information on major export markets.

It is clear that the price formation process for fruits and vegetables is less efficient than it might be if all participants had access to accurate and unbiased supply, demand and price information. One of AMO's responsibilities is to provide market information. It appears that some of the wholesale markets are collecting accurate information as the basis for assessing commission fees. AMO with the help of the Agricultural Marketing Project should be able to formulate an efficient computer based system for tabulating that information and issuing valuable and timely market information.

Recommendation 10: Retail price controls should be eliminated. The major disadvantage of the price control program is that it eliminates any incentive for retailers to purchase and sell higher quality fresh produce. Under the retail price control program, retailers find it to their advantage to charge the maximum ceiling price for all produce regardless of quality. In some ways it encourages the retailer to sell as poor quality product as he can, since he may be able to buy it at a lower price and sell at a higher margin. In some cases, retailers illegally charge much higher prices for the relatively better quality produce. But the illegality of their actions make it impossible for them to make good quality produce a very high percentage of their sales. And it prevents them from insisting on higher quality from their commission agent who could help pass the incentive back to producers. There is no evidence that the current program is economically and socially justified. It seems that the justification is to keep retailers from charging excessive prices. Yet there are large numbers of retailers competing in the sale

of fresh produce. In a free market they would be constrained by that competition to charge a reasonable margin for their services. Elimination of the price control might cause relative prices to surge temporarily upward until competition forces retailers to reduce their margins to a more reasonable level. But it is highly likely that **competition will restore reasonable prices** and that the benefits to consumers and farmers will far outweigh any temporary price distortions.

Recommendation 11: AMO should accelerate its program to improve the quality of produce available for export to the Gulf states, to Europe and for the local market.

There has been little improvement in the quality characteristics of Jordanian fresh produce. Losses are high and buyers complain about the poor quality of products. AMO should help develop and introduce improved packaging materials for each of the three markets according to the requirements in each market. The organization has the authority to develop and implement packaging and grading requirements. It is recommended that AMO not depend exclusively on its regulatory authority to force the introduction of such improvements. The approach should be to work with the private sector in an effort to identify those improvements which will improve incomes of farmers and intermediaries and to get them to recognize the benefits of their simultaneous adoption of the improvements. That approach will require AMO to do applied research, training and technical assistance on an intensive basis. It also implies close coordination with the National Center for Research and Technology Transfer of the Ministry of Agriculture in helping farmers decide what products and varieties are most marketable and how to properly harvest and handle fruits and vegetables.

Recommendation 12: An effort should be made by AMO, in cooperation with the appropriate municipalities and other institutions, to develop effective shipping point markets for the sale and appropriate conditioning of products for export and for shipment direct to large domestic buyers. As noted early in this chapter, the fruit and vegetable marketing system is evolving toward more direct shipment of products from the farm or nearby markets to domestic sellers and foreign buyers. Shipping point markets in production areas may offer a more efficient way to effectuate those transactions. A clear advantage for the farmer is that it is easier for him to be personally present for the sale of his product in order to assure that the selling arrangements are acceptable to him. The long trip to Amman presently makes it difficult for farmers to accompany their product to the market.

Recommendation 13: An arrangement should be made between AMO and AMPCO to carry out a study for the purpose of formulating strategies to effectively utilize the packing facilities owned by AMPCO in the Jordan Valley. AMPCO is the owner of several large, modern fruit and vegetable packing facilities in the Jordan Valley which have never been effectively used. The facilities were built with external assistance by the government of Jordan and then turned over to AMPCO as part of the government's investment in AMPCO. The company has never been able to muster the technological and managerial requisites to effectively and profitably use the facilities. And it is unlikely to be able to do so in the near future. On the other hand, private exporters have built several packing facilities and others are being planned. As noted above, the move to pack export fruits and vegetables near the farm will improve the efficiency and effectiveness of the marketing system. A study of the ways to effectively use the valuable facilities controlled by AMPCO is therefore urgently needed.

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