THE ECONOMIC DEVELOPMENT OF THE GREEK OLIVE-OIL INDUSTRY WITH SPECIAL REFERENCE TO MESSENIA PROVINCE

A thesis submitted to the University of Salford
for the degree of Doctor of Philosophy

by

Anna Giannopoulou

Department of Economics
University of Salford

June, 1990

This thesis is dedicated to Dimitris Kotaheas, my uncle, whose moral and financial support made this study possible.

ABSTRACT

This study examines the economic development of the Greek Olive Industry. Its focal point is the impact of recent socio-economic processes on the structure and organisation of the industry. In the first part, which is concerned with the rural sector, it is argued that olive cultivation and its development through time, has been constrained by a number of social, structural and institutional factors which are identified and their influence is then discussed. It is contended that recent changes due to the imposition of the EEC regime have brought about socio-economic processes which have considerably affected the mode of organisation of the rural sector in particular and the whole industry in general.

In the second part of this study, which is concerned with the urban sector, it is argued that during the last decade, rapid change has transformed the outlook of the second-stage processing of the industry. This change has affected the structure in two ways. First, there has been a large increase in the number of small packing units which operate in domestic market niches and compete for a share in the export trade. Secondly, there has been a concentration of output and economic power in the hands of three leading packers, two multinational subsidiaries, and the cooperative enterprise Eleourgiki. The financial base of this industrial change, though, is somewhat artificial. In particular, expansion in production and the modernisation process which has been taking place recently, are largely based on the CAP support system to the second-stage processing and packing, and also to large amounts of earnings which every year go through tax evasion.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

A.B.G.	Agricultural Bank of Greece
Acidity	The content of olive-oil in oleic acid per 100 gr.
Alki	Olive-oil brand sold by Eleourgiki. This refers to chemically processed olive-oil whose acidity does not exceed 1.5°.
Altis	Olive-oil brand sold by Elais. This refers to chemically processed olive-oil whose acidity does not exceed 1.5°.
Atrazine	Chemical used during olive tree weeding. This acts at root level and on the seeds during growth.
Azapa	Olive tree variety grown in Chile, well known for its full bearing capacity.
Blanquetta	Portuguese olive variety used for the production of olive-oil.
Coroneiki	Greek olive variety, mainly grown in Peloponnesos and used for the production of olive-oil.
Conservolia	Greek olive variety used for the production of edible olives.
Coupee	Chemically processed olive-oil whose acquired acidity does not exceed 1.5°.
Chiflik	Large land holders who bought the land from the Turkish as they left Greece in 1929.
Consumption Aid	A fixed amount determined annually by the EEC and paid to the packing units with respect to olive-oil when packaged in containers suitable for the retail trade.
Courante	Olive-oil with 1.5° - 3.3° oleic acid content per 100 gr. suitable for human consumption.
C.C.U.M.	Central Cooperative Union of Messenia.
C.A.P.	Common Agricultural Policy
Decanter	Container within which the olive-oil is extracted from the olive paste through centrifugal separation.
Decati	Tax system under which the State received one-tenth of the cultivators output in kind. It was abolished in the early 1930s.

Dacus	Parasite, which attacks the leaves of the olive tree and destroys the fruit.
E.O.M.E.H.	National Organisation of Small and Medium Enterprises.
E.C.U.	European Currency Unit.
E.T.U.C.	European Trade Unions Confederation.
E.A.G.G.F.	European Agricultural Guidance and Guarantee Fund.
Extra Virgin	Olive-oil with 0-1° oleic acid content per 100gr, immediately suitable for human consumption.
E.E.C.	European Economic Community.
Fraises	Piece of Equipment Used in Ploughing.
F.D.I.C.	Food and Drink Industries Council.
Fine	Olive-oil with 1-1.5° oleic acid content per 100gr, immediately suitable for human consumption.
F.A.O.	Food and Agriculture Organisation.
F.E.K.	Official Government Newspaper.
Galega Vulgar	Portuguese olive variety mainly used for the production of olive-oil.
G.A.T.T.	General Agreement on Tariffs and Trade.
Gramoxone	Chemical used during olive-tree weeding. It acts on the green parts of the tree and takes effect after 1-2 days.
Guardia di Finanza	Italian agency acting on behalf of the Ministry of Industry.
Green drachma	The common price system in the context of the C.A.P. required a set of internal exchange rates to convert national currencies to a common denominator. These were "Green Currencies" or agricultural money, and examples are the green drachma and the green pound.
Holiblanco	Spanish olive variety used both for production of edible olives and olive-oil.
I.H.P.O.C.	Institute of Hypotropical Plants and Olive Cultivation.

Intervention Price	This is the price at which olive-oil is bought by the intervention agencies. It is equal to the Production Target Price less the Production Aid paid to the producers plus an allowance which covers market fluctuations and the cost of transporting olive-oil from producing to consuming areas.
I.O.O.C.	International Olive-Oil Council.
Kalamon	Edible olive variety grown in Calamata, in the province of Messenia.
Liotrivi	Courante olive-oil brand sold by Eleourgiki.
Lampante	Olive-oil unsuitable for immediate consumption with 3.3^{o} - 12^{o} oleic acid content per 100 gr.
Megaritiki	Greek olive variety used both for production of edible olives and olive-oil.
Mastoidis	Greek olive variety used for production of olive-oil and mainly grown in Crete.
M.A.P.A.	Spanish Ministry of Agriculture, Fisheries and Nutrition.
M.C.A.	Monetary Compensation Amounts. A system introduced by the Community in order to offset the difference between the green rate and the real exchange rate.
Mouzarilla	Spanish olive variety used for production of edible olives.
N.S.S.G.	National Statistical Service of Greece.
National Lands	Lands which passed onto the hands of the newly created Greek State after the 1821-1829 War of Independence against the Turks.
Nomos	Administrative division corresponding to an English province.
Olea Chrysophylla	Olive tree variety grown in tropical Africa. It is claimed that many modern tree varieties originated from it.
Olea Europaea	Olive tree variety grown in Europe and especially in the Mediterranean region.
Ordinary Virgin	The new name given to Courante olive-oil since November 1st 1987.

Organoleptic	This refers to main quality characteristics of the olive-oil; taste, colour and odor.
Olive-oil	Refined olive-oil with acquired oleic acid content, after processing 1.5^{o} per 100gr.
Olive Residue-oil	This is a blend of Refined Olive Residue Oil and Virgin olive-oil with maximum acidity of 1.5^{o}.
O.C.	Olive Cooperative.
Pure	Chemically processed olive-oil with an acidity count of 1.5^{o}.
P.A.S.E.G.E.S.	Panhellenic Association of Agricultural Cooperatives.
Production Aid	This is a fixed amount paid by the EEC to olive growers for quantities of olive-oil and olive residue oil produced from olive trees planted before 31/12/1980.
Producer Selling Price	This is equal to the Production Target Price reduced by the Production Aid.
Production Target Price	This is a price fixed by the EEC, at a level "fair to producers", account being taken of the need to keep community production at the required level.
Rubra	Spanish olive-tree variety, well known for its full bearing capacity.
Round-up	Specialised chemical used for the destruction of certain weeds.
Refined	Chemically processed olive-oil with an acidity of less or equal to 0.5^{o}.
Representative Market Price	This is fixed annually by the EEC, at a level which will permit the "normal" marketing of olive-oil produced, account being taken of the prices for competing products.
Refined Olive Residue-Oil	Its maximum acidity is 0.5^{o} but its retailing in an unblended form is prohibited.
Refined Demargarined	Olive residue-oil suitable for consumption.

Simazine	Chemical used during olive tree weeding. In a blend with Atrazine acts effectively at root level.
Spitico	Extra Virgin olive-oil brand sold by Eleourgiki.
Spahis	Turkish officers.
Stremma	Unit of land measurement used in Greece, equal to 1/10 hectare.
Statira	Unit of measurement in the pre-Second World War period in Greece equal to 100 kgrs. Also known as metric statira.
Tsunati	Greek olive variety used for the production of edible olives.
Threshold Price	This is fixed by the EEC, annually, at such a level that imported olive-oil is prevented from entering the market at prices competitive with the Community's own olive-oil.
Timariots	Rent payments in kind or money extracted from the peasants by the State.
Throumbes	Greek olive variety used for the production of edible olives.
Unrefined Olive Residue Oil	Unsuitable for consumption or retailing, with acidity greater than 0.5^{o}.
Variable Import Levy	It is imposed by the EEC in order to make the difference between the fixed Threshold Price and the fluctuating world market price.
Virgin	Olive-oil suitable for immediate consumption with acidity 1.2^{o}.

ACKNOWLEDGEMENTS

I would like to thank Dr. C. Simmons, my supervisor, for his useful suggestions, critical comments, and valuable help throughout my studentship at Salford University.

I am thankful to Mr. V. Yannopoulos of the Trade Institute of Messenia, Mr. Tsarbopoulos of the Agricultural Institute of Messenia, Mr. N. Eftaxopoulos of Eleourgia Messenias and Mr. P. Katsikeas, Head of the Export and Finance Department of the Ionian Bank who granted me access to some of the Bank's records, concerning the operations of major processors of Messenia province.

I owe my indebtedness to Mr. V. Evagellou of the A.B.G, Mr. V. Zambounis of Eleourgiki, Mr. Y. Xiloyianni of PASEGES, Mr. Y Cotsis of the Ministry of Commerce, Mr. L. Melas of Elais, Mr Vasilopoulo of Minerva and all the processors and millers of Messenia province for their help during my research. I am also grateful to all the farmers of the villages Coryfasi, Avia and Tseria for their important contribution through their personal experiences and their warmth and help throughout my visit to the above mentioned villages. I would also like to thank Mrs Kathy Mitchell for typing this thesis efficiently.

Finally, I must mention that the constant encouragement and support of my parents and my brother Niko have been of immense value to me during my studies in the U.K.

INTRODUCTION

Within the last decade the Greek economy has been engaged in a process of economic integration in the European Community and, as a result, most sectors of the domestic economy have been affected in some way. In the context of the changes arising from accession the olive industry has been experiencing a process of "modernisation" within the ambit of rural industrialization. In an unusually short and accelerated time frame the traditional structures of the industry have been subject to profound change. More specifically, accession had two initial consequences for the Greek food industry in general and the olive industry in particular. The first was a significant transfer of resources through Community funds from the CAP budget to the olive industry - especially transfers arising from price intervention which were channelled into consumption rather than productive investment. The second was transnational acquisitions which form part of the current restructuring of the Europe-wide food industry. Taken together this net inflow of funds and the process of structural transformation have altered the nature and prospects of this long established industry.

The cultivation of the olive and the production of olive-oil is one of the oldest of the organised agro-processing activities associated with the Greek people, countryside and culture. This ancient lineage signifies the strength of traditional economic ties and of deeply embedded social forms in the evolving structure and subsequent development of the olive industry. It is the long history of olive

cultivation spanning many centuries which has made it an important part of Greece's national heritage, and has an obvious reflection in the farmers' special attachment to the crop and the important place of the olive press in village life. To this day around 350,000 farms (over one third of the total number) include olive growing as an integral part of their agricultural operations. Olive cultivation absorbs about 40 million labour days a year, equivalent to some 22% of the total labour force in the agricultural sector. Furthermore, about 65% of the labour required for cultivation is needed during the months between October - January, which allows for a more evenly balanced distribution of labour time in the rural sector as a whole.(1) This is because the greater part of the demand for agricultural labour occurs between the Spring and Summer seasons. Currently, olive production contributes 13-14% of gross agricultural product and 1.5% of G.D.P (1982-1986). Also, its share in total agricultural exports was about 6-7% over 1980-1986.(2)

The main objective of this thesis is to study the economic development of the Greek olive oil industry in the light of the recent changes which have been taking place. I shall attempt to identify the major elements prompting the current process of transformation which is threatening to turn the Greek olive sector into just another industry and into an integral part of the wider European food industry. Such a trend was originally postulated in the works on rural industrialization and can be traced back to the late 19th and early 20th century contributions of Kautsky, Lenin, and Chayanov.(3) Although my analysis acknowledges the prescient value of the early theoretical

debate, and its continuation right up till today, I do not propose to address directly these issues. Indeed they are only considered in so far as they help yield a better understanding of the processes observed in the contemporary Greek case.

The field research for this study was undertaken periodically between 1987 and the Summer of 1989. A substantial proportion of the material used was obtained from primary sources and include the records of a number of second stage processing units in Messenia province; the records of the two multinational subsidiaries (Elais and Minerva), and those of the dominant cooperative enterprise (Eleourgiki); the records of a number of cooperative oil-mills in Messenia; relevant regional archives in the Town Hall at Pylos and Calamata; the records of the Institute of Trade and Commerce including that of the Customs House also in Messenia; and a variety of company reports obtained through ICAP (a market research company). A great deal of information was also obtained through personal interviews, particularly those conducted with farmers (the fieldwork questionnaire appears in the appendix to Chapter Three), and with officials from the banks, relevant trade organisations and civil servants in the respective Ministries of Commerce, Economics and Agriculture.

This thesis is divided in two interrelated parts. The first is concerned with the rural areas and the second with the urban sector of the industry. I argue that the core of the modernisation process which has been occurring originated in the urban-based processing sector which, by responding to external incentives, has brought about

important socio-economic change in agriculture. In the 1980's production of olives per unit of land has doubled and, in some cases tripled, because of the application of certain scientific and technological advances. Partly as a result of this both olive-oil production, and the primary transformation of the agricultural product, experienced significant productivity gains. This development of the forces of production went hand-in-hand with a decisive change in the mode of organisation. The cooperative movement was strengthened and this enabled the small family unit to survive. In this respect development cannot be seen to have taken place along the unilinear principles as advanced by the classical Marxist writers because, although there was conflict and struggle between the private and the cooperative sectors, this did not lead to either the emergence of an agrarian bourgeoisie or a proletarianised rural wage labour force.(4) This is not to deny the process of rural differentiation which followed the land reforms of the late 19th and the early 20th century. But the contradictory path of differentiation as experienced in the olive sector is closely related to some of the underlying contradictions under way in society at large. In particular, the special features and peculiarities of the Greek economy as a whole, where the pace of industrial development itself has been comparatively slow and halting over the course of this century and certainly has not proceeded in the same way as other West European States, limits the scope for production along the lines of the classical Marxists' perception of the development of capitalism in agriculture (at least as interpreted by Lenin and his followers). On the other hand a number of modern researchers have argued that agriculture in many of the developed

economies has undergone a process of profound structural change in the post-War period, sometimes even referred to as a second agricultural revolution.(5) It has been suggested that this is characterised by "the progressive extension of technological, organizational and economic rationality into the arena of farm operations, linking them even more closely to the other sectors of the economy both materially and in ethos".(6) Farms have become larger, more capital-intensive and certainly far more specialised in production; and farmers have increasingly followed the precepts of rationalisation apparent in other industries.(7)

The structure and organisation of production in Greek agriculture though has been shaped by a number of socio-economic and political developments quite different from those which have been operative in the core Western European countries. In accounting for and explaining these developments, the role of the State must figure prominently. In the post-War period a wide range of support policies was provided by the Greek State to the agricultural sector. The reasons for this are connected with the rising demand coming from the urban population; and the rural exodus of younger members of the labour force in the 1960's as a result of relatively low levels of agricultural incomes, and the increased employment opportunities in the western economies. So improvements did occur but only in the limiting context of the maintenance of the small scale mode of organisation which, coupled with an on-going process of plot fragmentation, constituted a constraint upon the further development of agriculture.

In recent years different aspects of the EEC regime have induced some restructuring in the Greek countryside. In the case of the olive-oil, agricultural production has undoubtedly been subject to modernising influences, but the chief dynamic behind the forces of change has been primarily exogenous. More specifically, as merchants invested in processing in order to upgrade their function and hence take full advantage of new opportunities provided by accession, fresh demands were placed upon the rural sector. These amounted to specific requirements for better quality olive-oil which, in turn, had important logistical implications for the acquisition of supply of olive-oil in bulk. This had two connected but quite distinct results for the rural areas. First it stimulated a technological transformation in the first stage processing of olive-oil (at the mill) which went along with some restructuring of olive farms into larger units at a national level. Secondly, it affected the mode of organisation of agriculture in general and the whole olive-oil industry in particular. Olive cooperatives were established in most olive producing areas of the country. Despite these forces the small scale mode of family enterprise managed to survive.

Such an outcome was debated intensively earlier this century with regard to the Russian and later Soviet experience, and it may be instructive to rehearse some of the relevant points of argument. Chayanov in discussing this line of development in 1925, wrote:

"The dynamic processes of agricultural proletarianization and concentration of production leading to large-scale agricultural production units based on hired labour, are developing throughout the world, and in the U.S.S.R [before collectivisation], at a rate much slower than was expected at the end of the 19th century...Nevertheless, it is clear to everyone working in th field of agriculture that literally before our eyes the world's agriculture, ours included, is being more and more drawn into the general circulation of the world economy, and the centres of capitalism are more and more subordinating it to their leadership".(8)

Chayanov thus accepted that some differentiation of the peasantry was taking place - but he interpreted it in demographic rather than class terms ⌒ as Lenin had earlier tried to do. Furthermore, once agriculture has been drawn into commodity production, Chayanov continues, it tends to become subordinate to the interests of a combined merchant - usurer's capital. The next step is that capitalism begins to impinge upon the organisation of production. New higher yielding seeds and modern inorganic fertilizers make an entry and indeed the capitalist mode itself begins to penetrate production. This does not become immediately manifest on the farms but rather in the primary processing of agricultural raw materials. Such a development is a critical component of the unfolding process of change. Chayanov therefore claims that "despite the evident, scattered and independent nature of the small commodity producers, agriculture converts into an economic system concentrated in a series of the largest undertakings

and, through them, entering the sphere controlled by the most advanced forms of finance capitalism".(9) Then he goes on to specify the form of capitalist penetration as vertical concentration. At this point the concept of cooperatives becomes crucial to his theory. When private entrepreneurial capital is weak, the vertical concentration can take on a cooperative appearance. So cooperatives represent "a deep process of vertical concentration in agriculture". The essence of his work - and of the important neo-populist tradition which follows - is the emphasis upon the viability of peasant agriculture, and its ability to survive and prosper under difficult and hostile circumstances through conservation of the peasant institutional framework based upon family labour and retention of the small holding. This vision of the future therefore went neither along "pure" capitalist nor upon "pure" socialist lines of development.

In the case of the Greek olive sector, producers have organised themselves into cooperatives in order to compete more effectively against private capital, and to market their produce on the best possible terms. Furthermore, because the political environment was more favourable to them in the 1980s that at any other period it even became possible for the producers' cooperative organisation to impose its own rules upon the olive-oil trade - and hence safeguard the level of farm gate prices (which, as we shall see were set above costs). Partly as a result of this, industrial capital as represented by the multinational subsidiaries and the larger domestic processor-packers, has attempted to substitute away from olives to seed-oils.

It also appears that the motive force which is transforming the rural sector of the olive industry does not originate from within agriculture itself - but rather stems from the urban processing sub-sector. It is interesting to note that this type of development was first identified in Kautsky's seminal work The Agrarian Question and, indeed, is its main argument.(10) For Kautsky agro-industrial capital in either private or cooperative form would prove to be the motor-force behind the specific structural development of western agriculture in the 20th century. But the exact mechanism by which this would occur is never clearly spelt out and remains only implicit. As rents fall and profits decline an advantage is created for the "middle" peasantry and results in a flow of capital out of agriculture into agro-industry. Kautsky specifically mentions dairies, breweries and sugar refineries which become important investment avenues for the landlords and the more capitalist oriented of the tenants. In this way, capital takes hold of certain production processes previously located on the farms, and moves them into industrial enterprises thus completely transforming them and creating a situation of disarticulation. It is therefore in agro-industry that the capitalist mode makes a first decisive appearance.

An important and relatively recent contribution to the rural industrialization debate with respect to the food system is provided by the synthesising study of David Goodman et.al.(11) This lends some modern support to the hypothesis originally posited by Kautsky and takes it a stage further by relating it to agro-business and the modernisation processes currently under way in all of the advanced

economies. They begin by arguing that industrial capital has not been able easily to transform the agro-food system (covering agricultural production through to final food consumption), into a unified whole. Instead individual fractions of capital have intervened at different points in the chain, giving rise to specific - and sometimes competing - strategies of accumulation and growth. The development of agriculture has therefore been characterized by the industrial appropriation of discrete activities, and capitalist production is increasingly located in towns rather than the countryside. The modernisation processes found in the agriculture of all developed economies have been well documented by researchers and agricultural economists.(12) It is shown further that these processes can in turn lead to the industrialization of agriculture, where the emphasis switches from conditions within the sector to the external relations with the other sectors of the economy. This state of affairs has been described as a move from agriculture to agrobusiness, where farming is increasingly organised along scientific lines and run according to modern principles and practices of business.

At the heart of this concept is the relationship between agricultural production and two sets of activities - those which are "upstream" or the agricultural supply industries (including chemicals, feedstuffs and machine engineering), and those which are "downstream" especially food processing. In reality, agrobusiness is the incorporation of agriculture into sectors which deal with both the provision of farm inputs and the processing and marketing of final agricultural produce. This is reflected in the high level of

concentration in both the organisation of supply and in food processing. A number of researchers have examined rural processes and their articulation with urban based industry in order to obtain insight into the wider debate concerning the capitalist development of agriculture. My purpose is to place the case of the olive-oil industry into this body of literature, and this may help to fill a gap in view of the limited range of works on this industry.

In the first part of this study, which is concerned with the rural sector, I argue that olive growing and its development through time, has been constrained by natural conditions and a number of social, structural and institutional factors. These were traced back to the early 19th century and in particular to the 1827 War of Independence against the Turks. In Chapter One it is contended that natural conditions has been a constraint to the development of olive cultivation. However, other factors contributing to this state of affairs have been identified as the slow pace of development in the application of the evolving techniques; labour shortages in the rural sector; and also the fact that considerations of economic efficiency must be placed into a wide social context encompassing the olive growers' decision making horizons. In Chapter Two I try to show that merchant capital became a constraint to the further expansion of the sector through the system of debt bondage with respect to the cultivators. Furthermore, the development of the olive cooperative movement which reflected the struggle of the growers for greater control over their own production, received little or no support from the State. In such conditions the small scale organisation of olive

farming became the means by which the industry was articulated with the needs of the rising urban population. It is further argued that until the early 1950s the main policy of the State towards olive growing was centered on how to extract part of the cultivators' income through taxing the marketed produce. This action posed a further constraint upon the expansion of olive-oil production since the small cultivators were left with little surplus to reinvest in improving their working conditions and methods of production. Finally, it is argued that the small size of the agricultural holdings, coupled with the process of plot fragmentation, held back development. It appears that the small olive growers operating in such an environment could not behave as profit maximizers. All of these constraints, together with the continuing influence of the natural conditions, have acted as a brake upon accumulation.

As a matter of fact, it will be shown that there have been periods when the olive grower could hardly reproduce his own and family's material existence. But if he has not been a profit maximizer how does the olive grower behave? There have been many valuable contributions to the theory of peasant decision-making. One of these, contributed by M. Lipton argues that peasant farmers are so subject to conditions of risk and uncertainty that they can best be seen as "optimizers" who seek to strike a balance between the objective of maximising profits or yields, and that of keeping the risk of failure to a minimum.(13) Another study of peasant decision-making use of game theory is that contributed by Gould. He related actual cropping patterns of Ghanaian peasant farmers to the "minimax" solution predicted by the theory-

that is, the solution which permits the highest possible level of output to be achieved while keeping the risks of failure to a minimum.(14) In my research however, I have not sought to formulate a decision-making model of the Greek olive growers. Rather my purpose has been to identify those factors which have prevented the grower from exercising control over the means of production and hence enjoying the full rewards from his work and then discuss the affect of these factors on the development of the sector. This objective is further realised through my fieldwork in the villages of Avia and Coryfasi, presented in Chapter Three. I argue that recent changes as a result of the imposition of the EEC regime have brought about socio-economic processes which have affected considerably the mode of organisation of the rural sector in particular, and the whole industry in general. In this context, through the case studies of the two villages I seek to demonstrate the possible lines of development currently under way in the Greek olive growing. Further, it is stressed that the developments identified in our discussion of the experience of Avia and Coryfasi should not be seen as isolated phenomena, but as a microcosm of wider trends affecting the whole olive industry. However, the process of large scale operation, the strong presence of the cooperative organisation and the adoption of modern techniques in olive-oil production become clearer in the oil-milling part of the industry- which has been revolutionized. This part of the industry is discussed in Chapter Four.

In the second part of this study, which is concerned with the urban sector, I argue that during the last decade rapid change has

transformed the outlook of the second stage processing of the industry. This has affected structure in two ways. First, there has been a large increase in the number of small packing units which operate in domestic market niches and compete for a share of the export trade. Secondly, there has been a concentration of output and economic power into the hands of three leading packers, two multinational subsidiaries and the cooperative enterprise Eleourgiki. In Chapter Five I have attempted to identify the main features of the environment within which the Greek second stage processing of olive-oil has operated since 1981. The discussion of the EEC price policy and that of restructuring constitutes the main external forces behind recent developments in this part of the Greek olive industry. Although the research focus is primarily on developments affecting the Greek second stage processing of olive-oil, attempts are made to compare the Greek experience with that of a number of other countries. More specifically, in Chapter Six it is contended that the core of recent structural changes lies in the packing and branding sub-sector which is now firmly articulated within the CAP system. The refineries, table olive processing units and olive residue plants have reacted only slowly and modestly to new external incentives. Furthermore, I argue that structural change has strengthened the position of cooperatives in this part of the industry. This took place partly as a consequence of the favourable political environment created by the PASOC Administration of 1981-1989, and resulted in a shift of the locus of power within the industry towards cooperative control via Eleourgiki. This meant support for the olive-oil producer prices, but, by the same token, it also meant higher input costs for the second stage processors. This has led the major

packers to gradually diversify production away from olive-oil and towards seed-oils. Such action forced Eleourgiki to resort to a similar strategy, which has began to undermine the base of the olive industry and so affect deleteriously the interests of the olive farmers. In order to gain further insight into the financial performance of the second stage processors in the context of the incentives provided by the CAP, a sample of firms was selected for scrutiny. The results which are discussed in Chapter Seven, suggest that the financial base of this is somewhat artificial. In particular, expansion in production and the modernization process which has been taking place recently, are largely based on the CAP support system to the second stage processing and packing, and also to considerable sums of earnings which every year go through tax evasion. However, the conditions in the external market and the input price of olive-oil in the domestic market appear to be the two decisive factors determining the future of the olive industry packers. This state of affairs suggests the need for a nationally based campaign to market and promote Greek sales of branded virgin olive-oil abroad. The changes in the marketing and distribution channels of olive-oil, as well as the changing patterns of consumer expenditure, are discussed in Chapter Eight.

References

1. A.B.G, Department of Vegetable Production, 1988.

2. N.S.S.G, Agricultural Production and Exports-Imports, 1987.

3. See V.I Lenin (1899), "The Development of Capitalism in Russia" in Collected Works, Vol.3 (London, 1960) and A.V. Chanyanov, The Theory of Peasant Economy, (Homewood, 111, 1966) and J. Banaji, "A Summary of Kautsky's The Agrarian Question", Economy and Society, 5,1, p.2-49, 1976, and K. Kautsky (1899) "The Agrarian Question" in P. Goode (ed.) Selected Political Writings, (London, 1983).

4. See V.I. Lenin, ibid and K. Marx (1865), Capital, Vol.1, (New York, 1967).

5. See I. Wallace and W. Smith, "Agribusiness in North America", and I. Bowler "Some Consequences of the Industrialization of Agriculture in the European Community" in M. J. Healey and B. W. Ilbery (eds) The Industrialization of the Countryside (Norwich, 1985).

6. See I. Wallace, "Towards a Geography of Agribusiness", Unpublished paper, 1984, p.6. in ibid.

7. See H. Newby and P. Utting, "Agribusiness in the United Kingdom-social and political implications". Paper presented to the annual conference of the British Sociological Association, University College, Aberystwyth, 1981.

8. See A. Chayanov, 1966, op.cit p.257, and G. Kitching, Development and Underdevelopment in Historical Perspective : Populism, Nationalism and Industrialization, (London, 1989).

9. See A. Chayanov, 1966, op.cit, p.262.

10. See J. Banaji, 1976, op.cit and K. Tribe and A. Houssain, Marxism and the Agrarian Question, Vol.1: German Social Democracy and the Peasantry 1890-1907, (London, 1981).

11. See D. Goodman, B. Sorj and J. Wilkinson, From Farming to Biotechnology : A Theory of Agro-Industrial Development, (U.K, 1987).

12. See D. K Britton and B. E. Hill, Size and Efficiency in Farming, (Farnborough, 1975) and B.E. Hill and K.A Ingersent, Economic Analysis of Agriculture, (London, 1977). For an insight into developments int he U.S.A. agriculture, see E.G. Smith, Annals of the Association of American Geographers, 70, p.528-541, 1980 and H. Newby, Green and Pleasant Land? Social change in Rural England, (London, 1979).

13. See M. Lipton, "The Theory of the Optimising Peasant" Journal of Development Studies, 4,3 p.327-51, 1968.

14. See P. Gould, "Man Against his Environment : A Game Theoretic Approach", Annals of the Association of American Geographers, 53, p.290-7, 1963.

PART ONE

OLIVE-OIL AND OLIVE CULTIVATION

IN THE ECONOMY OF RURAL GREECE

CHAPTER ONE

THE CULTIVATION OF THE OLIVE TREE: ENVIRONMENTAL CONDITIONS AND EVOLVING TECHNIQUES OF PRODUCTION

Introduction

The main objective of this chapter is to throw some light on two basic factors which have influenced the specific development of olive growing around the Mediterranean basin. One is the long historical tradition of olive cultivation among Mediterranean peoples and their cultures. The other is the natural conditions, embodying environment and the physiology of the tree, which provides the Mediterranean region with an ideal terrain for olive cultivation to flourish. The historical tradition, affords an insight into the olive growers' decision making process by means of incorporating the relevant socio-economic and cultural dimensions which have shaped the olive production process. Embedded, somewhere within this tradition is an in-built set of natural conditions subject to which the cultivator has had to operate through many centuries of active engagement in olive growing.

Section One concentrates on identifying several aspects of the physiology of the olive tree and how this has affected its historical development. It is argued that while the economic and cultural significance of olive cultivation to the ancient civilizations was of considerable importance - although it is obviously difficult to be

precise because of the lack of surveiving data - the specific type of socio-economic development in these regions constrained and even blocked the expansion of olive growing. Thus it appears, for example, that the nature of the Pax Romana in the Mediterranean basin shaped the development of olive cultivation in the colonies by subordinating it to domestic and foreign merchant capital.

Section Two focuses on the influence of environmental factors in determining the tree's geographic extension - or rather its concentration. It is affirmed that the particular conditions suitable for growth are ideally found in the Mediterranean region. The unique adaptability of the tree though, makes it a suitable cultivation even for areas with poor soils where no alternative crops exist and, partly as a consequence, farming has tended to be a small-sized family-based activity. It appears that environmental factors also directly impinge upon the ability of the olive tree to bear fruit. Furthermore, optimal combination of the natural factors is one of the necessary conditions in order for the olive tree to bear fruit at anywhere approaching full bearing capacity.

The methods of cultivation are the means by which the typical olive grower attempts to influence the physiology of the tree within a given environment so as to achieve the desired level of production. These methods and the ways in which they have been applied are discussed in Section Three. I argue that the alternate bearing cycle of the olive tree, a result of both physiological conditions and cultivation methods, poses a structural constraint upon the process of

olive growing. As a consequence the incomes of olive growers fluctuate considerably from year to year.

In order to obtain a greater degree of uniformity of production and also achieve maximum field bearing performance from the trees both quantity and quality wise, certain new and more cost effective techniques of cultivation are being advocated by the olive research institutes. The application of these techniques and the specific ways in which they can influence olive-oil production are examined in Section Four. It is argued that this "new style" of cultivation could revolutionize olive growing in terms of yields obtained and cost reduction (during the production process) as shown by the Italian case. In Greece, partial adaptation of the "new style" has taken place with regard to enhancing productivity gains through the practice of dense planting.

The specific way in which cultivation methods, the physiology of the tree, and the introduction of new techniques combine together define the stages of olive production. Section Five discusses the operations involved in each successive stage and shows how these are affected by socio-economic considerations and by the attitude of the farmers. More specifically, the harvesting operation alone accounts for 60-80% of the total olive production cost. This fact combined with a shortage of available labour in the olive growing regions, has resulted in greater attempts to mechanise harvesting. It is shown that even though such mechanisation is widespread in Italy and steadily

increasing in Spain, Greece has not gone down this route to any significant extent.

The reasons for the rather modest rate of introduction of new techniques are examined in the Sixth Section of this Chapter. The recruitment of labour in Greece during the olive harvesting season has become progressively more difficult since the early 1950's as more people have left the rural sector in order to obtain urban based jobs. This out-migration together with rising wages is one of the reasons why mechanisation of harvesting is sometimes considered to be beneficial. On the other hand, considerations of strict economic efficiency do not seem to have been at the top of the list of priorities of the majority of olive growers. They still engage in traditional cultivation often under quite adverse conditions and through this channel they relate to a changing social and political framework. In fact between 1976-1984 any reasonable explanation of trends in olive-oil production cannot be easily attributed to either the movement of producer prices or to cost reductions.

The historical development of olive growing and the attachment of farmers to it as a way of life, are clearly important factors in determining recent behaviour. Within this context the trend of world and Greek olive-oil production is examined in Section Seven. It is shown that between 1950-1980, although production worldwide has increased significantly, the rate of growth was faster for countries outside the Mediterranean basin. Moreover, between 1976-1988, there has been a declining trend in the annual compound rate of growth, and

in the case of Spain and some non-EEC Mediterranean countries, the rate of change of olive-oil production has become negative.

1.1 Physiological Characteristics and Historical Development

To this day there is no certainty in the literature about the precise origins of the olive tree. Some writers believe that the olive tree as known today originated from the "Oleaster" wild tree found in North Africa, Portugal, southern France and Italy. Others support the view that the tree originated from the Olea Chrysophylla which used to cover large areas of tropical Africa including Kenya and Uganda.(1) The Olea breed includes 35 types of widely known olive trees. The total number of varieties cultivated is estimated at 650, but only 60 are used exclusively for the production of edible olives. The rest are cultivated for olive oil production. The height of the tree varies from 3-4 up to 20 metres. The dimensions of the tree depend on factors such as the type of soil in which it is planted, the climate, its positioning and pruning behaviour. At the initial stages of its development the olive fruit is of pale green colour. Later on during maturity it becomes dark brown and even black. Its shape differs according to the variety: so it can be round, nearly spherical or cylindrical. The main substances contained in the olive fruit are: water 50%, olive-oil 22%, glucose 19%, cellulose 5.8% and proteins 2%. This is the average chemical structure of the olive fruit. When it is large and contains a smaller than the average percentage of olive oil, the fruit is used for the production of edible olives.(2) There are times though when the same variety can be used both for production of

edible olives and olive-oil. Such varieties are called Megaritiki and Holiblanco. The main characteristic of the olive tree is its long and productive life span. It is worth noting that in Calamata, a city in the south Peloponnesos in Greece, an olive tree of about 800 years old still stands. Its height is 8 m, and the diameter of its shape is 9 m. It is apparently the only tree saved after fire was set to an olive grove by the Turkish Army sometime between 1821-1829. Since then it has been kept as a monument to nature.

Olive trees were first cultivated as early as 6,000 B.C in northern Africa, particularly Egypt and Ethiopia. From there, the olive tree and the knowledge of olive oil production was carried to central and western Mediterranean countries by Phoenician traders.(3) There are a great many references to olive oil in the legends and the literature of ancient cultures - such as those of Egypt, Athens and Rome; it is also widely mentioned in the Bible and in the Koran. More specifically, the olive tree was known to the Jews long before 1500 B.C. For them, it seems to have been a symbol of peace and happiness. In 1984, the Israel Oil Industry Museum was founded in which the ancient oil industry is displayed. Two of the exhibitions reported depict the importance of the industry during the Iron Age: the first is an industrial village for oil and wine manufacture, portrayed by findings, photographs and plans. The site was apparently built during the time of the Kingdom of Israel (9th Century B.C). Its estimated output averaged 14,000 litres of oil a year, most of which was marketed and not self-consumed by growers. The second exhibition is Tel Miqne. This is the biblical Philistine city of Ekron, where 100 olive press

complexes were discovered on the surface of the mount. This "industrial town" is said to have produced 500,000 litres of olive oil a year, an industrial capacity with no precedent in the ancient world. The industry of Tel Miqne is presented by selective tools of production, storage vessels, photographs and plans.(4)

Ancient mythology suggests that the olive tree was brought to Greece by Egyptians after an initiative by the Athenian King, Kecropa.(5) Herodotus states that Eboea, in Central Greece, was full of olive trees during a period where olive cultivation was still unknown to Iran and Babylonia. Furthermore, in the Ionian Islands, olive cultivation has been known since the Homeric era. According to Herodotus, Athens was the centre of olive cultivation. In the 4th and 5th centuries B.C., large areas were under olive cultivation and apart from being a food product, olive oil was also used for medicinal purposes.(6) The Athenians have exported olives and olive-oil throughout their history. This is proved by the Hadrianic Law of circa 125 A.D. reserving one third of the local production for public use. This Law reminds us of the fact that Greek (and Roman) cities were also large consumers of olive-oil. The first information on the marketing of the product is mentioned in 2,500 B.C on the Market Code of that era.(7) Archaeologists claim that the prosperity of the Minoic Kingdom was very closely connected to the marketing of olive-oil. In the palace of ancient Festos, parts of a device used as an oil mill during the Minoic era, are saved to this very day. To support the belief that olive-oil was an important determinant of economic welfare in the ancient Mediterranean Evans informs us: "When for an unknown reason, in ancient Crete, trade

in olive-oil declined, Cretans lost their prosperity and many of them emigrated. Some settled in parts of central Greece and others in the coastal areas of Asia Minor".(8)

That is how the knowledge of olive oil production was carried to these regions according to Evans at least. Plutarch also considers olive oil to be a symbol of wealth. When describing the triumphs of Caesar, he tells us that this emperor conquered a territory for Rome during his African campaigns of such vastness, that three million litres of olive-oil per year could be produced.(9) The extension of olive cultivation is connected in north Africa with the period under Roman domination. The ruins of oil-mills and traces of irrigational operations illustrate the fact that from Tunis to Rabat and right up to the present borders of the south Algerian desert, olives were cultivated.

Two different views have been expressed in the literature about the significance of olive cultivation for those territories under the Romans.(10) The first claims that Roman rule purposely promoted olive cultivation to ensure that Rome was supplied and, more particularly, to settle the populations and so more effectively keep them under imperial control. The second view states that olive cultivation's extension was merely a consequence of Pax Romana which provided farmers with the certainty that the benefit of their efforts would be protected. Even though both views seem reasonable it seems to me that the first holds more weight in explaining why olive-oil came to be regarded as a non-profitable investment in Italy. Italy, like all

other Mediterranean countries, was a large consumer of olive-oil. Nevertheless, olives appear to have offered a smaller gross return - as well as taking longer to mature than vines. Even though they were much less labour intensive and the wide planting distance between the trees made it especially easy to combine olives with cereals, olives do not seem to have been very highly regarded as a "capitalist" investment in Italy.(11) Actually, Cato places them fourth in his list of nine types of cultivation in order of profitability. Columella shows little interest in olive growing and Pliny the Elder says that it could be difficult to make a profit from olives.(12) It seems to me though that these views are too narrow in scope to explain the economic significance of olive growing. This is because they do not take into account Italy's position as an imperialist power. As such, the Romans controlled most Mediterranean countries where olive growing was flourishing. They were apparently provided therefore with adequate supplies at relatively cheap prices for home consumption. Also, domestic merchant capital found it more profitable to trade in olive-oil produced in the colonies as this seems to have left them with higher profit margins. The evidence presented by the historians has to be seen within this context and does not contradict statements, during the same time period, concerning the high value of olive-oil in the colonial producer states. However, as merchant capital got progressively more involved in olive-oil trading from the periphery of the empire towards the centre, the development of olive growing in the whole Mediterranean basin was oriented towards serving the needs of the Romans through subordination to the dominant merchant capital. Evidence from the province of Messenia, which was still under Venetian

control in the 17 and 18th centuries A.D., shows the effect of the subordination of olive growing regions to merchant capital both domestic and foreign. More specifically, Zaccaria Bembo[13] informs us that in the province of Messenia in 1711-1712, 7,000 barrels of olive-oil were produced. Out of that quantity, 5,000 barrels would be sent to the Metropolis, Venice, from where they would be re-exported, used for home consumption and deployed in the Venetian soap and wool industry. Apparently only 600 barrels would be left for domestic consumption in the province or less than 1/10 of production. As Bembo puts it, olive-oil was "the only substance poor growers had available to improve the taste of their bread with". We are also informed by Bembo's reference how important the ship "Marciliana" was in the Venetian olive-oil trade in the Adriatic, Ionian and Aegean Seas. It was especially designed for trading in olive-oil. Moreover, merchant names and quantities allocated to each show concentration of the trade in the hands of a few Italian merchants.

Olive-oil, as M Finley puts it, "has been an essential clue to the Mediterranean peoples' life-style".[14] Apart from food it was also used as part of pharmaceutical supplies, as a remedy for certain skin diseases and the production of liniments. Outside the Mediterranean basin, olive cultivation was made known by Spanish and Portuguese explorers, and coming down the centuries, between 1850-1900 several olive varieties had been imported into California form the Mediterranean countries. In Australia, the first olives were planted in 1805 by Italian emigrants but despite much effort, olive cultivation did not expand in this continent - which still relies on

imports to satisfy its needs. Nowadays, the Mediterranean countries account for no less than 98% of the olive cultivated area worldwide.(15)

We may conclude that the particular historical development of olive cultivation in the Mediterranean region shaped production relations and social organisation of the olive production process. At the same time this development was itself shaped by the natural conditions of the production process which necessitated the concentration of olive production in the Mediterranean basin in the first place. By "natural conditions" I refer to environmental factors as well as the physiological characteristics of the tree: these will now be discussed.

1.2 The Influence of Environmental Factors

1.2.1 Climate and Temperature

Seasonal temperatures influence decisively the geographical extension of olive cultivation. The olive tree adapts best to a temperate climate. It should not have to put up with sharp and lasting cold periods lower than 5°C in winter, while late spring frosts are considered to be detrimental. The lowest temperature at which the olive tree can survive unharmed is -3°C, but only if it is exposed for a short period of time. On the other hand, it can more readily undergo quite high temperatures.(16) Table 1.1 presents the thermic criteria of the olive tree.

Table 1.1: **Thermic Criteria of the Olive Tree**

Stages of Growing	Temperature
Lethargic period (Danger of Frost)	-10°C up to -12°C
Interruption of lethargic period (Danger of Frost)	- 5°C up to - 7°C
Interruption of growing	- 9°C up to 10°C
Growing of the Flowers	14°C up to 15°C
Flowering	18°C up to 19°C
Fruit bearing	21°C up to 22°C
Interruption of growing	35°C up to 38°C
Danger of burns	>40°C

Source: Derived from G Balatsouras, The Olive Tree, (Athens, 1986)

The subject of minimum winter temperatures and optimum exposure of the olive tree has been a matter for investigation in recent years. Hartmann and Porligis[17] showed that for the olive tree to bear fruit, it is necessary to be exposed to low temperatures during winter. They proved, by experimenting on olive trees at Homestead in Florida and Brownsville in Texas, that the tree has to be subject to temperatures below 7.2°C for a period close to 1,200 hours in order to bear fruit at full capacity. In Greece temperatures below 7.2°C rarely last for long periods of time. Estimates in the main olive producing centres showed that the amount of hours during which the olive trees are exposed to temperatures lower than 7.2°C is only a small fraction of that required.[18] This fact has been partly blamed for the irregular and poor fruit bearing of olive groves in Greece. On the other hand, it has been shown by Dante Marsico, who experimented on olive trees grown in the valley Azapa of the Tarapaca county in Chile, that the Azapa variety produces at full capacity even though it is exposed at a minimum temperature of 15.6°C.[19] Similar observations apply to other olive varieties like Rubra and the Greek Coroneiki (mainly grown in Peloponnesos).

We can therefore say that the olive tree has a unique ability to adapt to a variety of environmental conditions and hence to insufficient winter temperatures. Furthermore, because of this ability, there is a large number of olive tree varieties and this distinguishes Olea Europaea from any other type of tree cultivation.

1.2.2 Rainfall

Olive cultivation does not require unduly large quantities of water-which is why the olive tree can be grown in areas where no other cultivation can flourish. In the northern hemisphere, where the average amount of rainfall is 300-630 mm per annum, the olive tree flourishes in non-irrigated areas. The smaller the amount of rainfall the larger the distance that each olive tree needs to be planted from the next. Generally, if the amount of rainfall is below 500 mm, the olive tree needs two or three times watering during August-September so that fruit bearing will be regular. In the southern hemisphere, on the other hand, the amount of rainfall should range between 620-680 mm for the olive tree to be cultivated in non-irrigated areas.(20) Otherwise, the olive groves should be regularly watered, depending on specific seasonal needs. Irrigated olive groves count for less than 10% in Spain and until recently, were nearly non-existent in Greece, apart from those exclusively cultivated for the production of edible olives. Only in Argentina do irrigated olive groves count for a large proportion (80%) of the total.

Apart from the amount of rainfall, relative humidity can also influence the ability of the olive tree to bear fruit, but to a lesser degree. Relative humidity should not reach 80% during the year because in combination with high temperatures, it can weaken the tree's resistance to disease.(21) Both these factors rainfall and humidity-by influencing the tree's ability to bear fruit, impinge directly upon olive growing as a source of income for the cultivators.

1.2.3 Soil

The olive tree grows best in light - but deep-soils, and does not do well on poorly drained, heavy and impermeable ones. Nevertheless, it may be grown successfully on many types of soil even the most arid, stony and infertile. Soil nutrients have an important function in regulating the olive tree's fruit bearing cycle. Thus soils where olive cultivation takes place are usually poor in organic matter, ie. 1.6 to 1.8% in terms of total weight. Insufficient organic matter is one of the reasons for the irregularity of the tree's fruit bearing cycle. The best soils for olive cultivation are the calcareous- followed by the piritaceous and the stony, but the olive tree with its large number of varieties can adapt and flourish in a variety of chemical soil compositions.(22)

The geographical extension of olive cultivation is closely related to local environmental conditions. This is because environmental factors influence the physiology of the tree and through this affect its ability to bear fruit. The Mediterranean climate has been proved ideal for olive growing as it is characterised by small amounts of rainfall (200-800 mm per annum), mild winters with average temperature of the coldest month 4.4°-10°C, and warm, dry summers full of sunshine. The altitude at which olives can be grown varies with the latitude and local climate conditions. It ranges from 300-400 m above sea level in the north to 1,000-1,200 m in favourable sections of the south.(23) These characteristics result in a concentration of olive growing to the Mediterranean basin where olive trees are usually found either in

groves or in scatters. On the other hand, the adaptability of the tree implies that it can be grown in unfavorable, dry, hill areas with poor soils, where no alternative crops exist and farming is a small sized, family activity. It is precisely this ability of the tree which underlies its economic and social importance to the less advantageously placed farmers living in deprived regions.

1.3 Methods of Cultivation and the Pattern of Production

1.3.1 Soil Cultivation and Weeding

The purpose of soil cultivation is to make the entry of rain water into the lower layers of the soil easier. In this way the roots of the olive trees develop better. The first ploughing of the land takes place in Autumn in order to increase soil absorption before winter rainfall.

Weeding, on the other hand, aims at limiting as far as possible any losses in soil moistness. Currently the most commonly used chemicals by olive growers for weeding are:

(a) The blend Atrazine and Simazine. This acts at root level and on the seeds as they grow. It needs 20-30 days to take effect and that is why it must be applied a month before the rainfall period ends (i.e the beginning of February).

(b) Gramoxone. This acts on the green parts of the tree and takes effect after 1-2 days. The weeds though are certain to reappear.

(c) Roundup. This is a more specialised chemical used for the destruction of certain weeds and only after they have completed their development (during Summer). It is used as a spray at a dosage rate of 10-15 Kgr/hectare.

The effectiveness of chemicals used in weed destruction depends upon the type of weed, the stage of development, the type of chemical used, the time of application, the dosage and the mode of application as well as climatic conditions and soil.[24]

There has been a case against soil cultivation on the grounds that it can harm the roots of the trees nearer to the surface and hence decrease their ability to absorb nutritious soil substances. On the other hand, if only weeding is undertaken the olive tree could gain maximum advantage of the productive capacity of soil's outer layer and moistness, which would be otherwise consumed by the weeds.[25] To test these claims in the 1970's several studies were conducted in Greece. At the Institute of Hypotropical Plants and Olive Cultivation (IHPOC) based in Chania, Crete, experiments on different olive tree varieties were performed. The purpose was to study the impact of separate soil interventions on the olive tree's productive capacity. The results of two of the studies, on the Coroneiki and Mastoidis varieties, are presented in Table 1.2. Under "type of soil intervention", tilled soil, untilled soil and different chemicals used for weeding are

listed. For each of those interventions the length of the tree's annual of fruit growth has been recorded. Next, the content of the olive fruit in olive oil was measured, and total olive production and total olive oil production was also recorded. The results show that untilled soils produce less but the content of olives in olive oil is highest. This is apparently due to the limited ability of the tree to absorb water as the soil has not been tilled. Therefore, the size of the fruit is smaller as it contains less water in it. Similar behaviour is observed when olive trees are grown in mountainous areas where location makes tillage impossible. The results obtained by the IHPOC signify that rational use of chemicals used for weeding, in an optimum combination with soil tillage can considerably improve the performance of the tree.(26)

1.3.2 Fertilization

Fertilization is the most important and productive of cultivation activities. Suitable fertilizers can even double olive production. To determine the need for fertilization and the right choice of chemicals is a complicated issue and requires careful consideration. For instance, soil, climate, disease and the type of chemicals used for weeding must be taken into account. Scientists claim that it is essential to control olive nutrition by fertilization since the imbalance which causes alternate bearing appears to be largely due to competition for nutrients - which fertilization appears to be capable of reducing.(27)

A crop's nutrient requirements are determined by the amount of mineral elements leaving the soil during growth and fructification- while at the same time not overlooking any losses due to intensified cultivation (by tilling, irrigation, pruning, etc). The intake of an olive grove may be estimated and, together with soil analysis, the amount of mineral fertilizer required may be deduced. So, according to Zacchrewicz[28], one hectare with 200 olives annually withdraws 28.6 units of Nitrogen (Kg.N); 10.1 units of Phosphorus (Kg. P_2O_5); and 35.5 units of Potassium (Kg. K_2O). In a bibliographical review on the subject, certain withdrawal figures were quoted for different regions. It then became clear that not all the authors are in full agreement on the amount of withdrawals by an olive grove, particularly as concerns Nitrogen input. It has been demonstrated that the Nitrogen and Potassium content of the reproductive organs of the olive tree (reproductive buds, inflorescence stems, flowers, fruits) increases from February through to September. Furthermore, if we consider the overall content (in grams) of the various reproducing organs, substantial amounts of Nitrogen and Potassium are observed after a good harvest. Calcium, on the other hand, varies inversely with Potassium and the overall content of calcium in the reproductive organs is found to be four times less than that of Potassium.[29] Large-scale olive production is therefore responsible for the withdrawal of appreciable amounts of Potassium, Nitrogen and to a lesser extent, Calcium by the olive tree.

The purpose of these observations is not to calculate fertilization; rather they have been conducted as part of a far more

embracing work on the olive's fertilization and nutrition requirements. Studies by the IHPOC, in Crete, on the olive varieties of Coroneiki and Mastoidis resulted in the following observations.(30) The Nitrogen withdrawal differs depending on the quantity supplied. The same occurs with Potassium, which is found at very low levels in the tree when not supplied. On the other hand, Phosphorus is found at high levels in the olive tree independently on the quantity supplied. It was also observed that large dosages of Nitrogen without any Potassium and Phosphorus reduced olive production. The main objective of this experimental work has been to rationalise olive fertilization which has for long been applied haphazardly by olive growers. Moreover, studies of fertilization aim to define the optimum amount of fertilizer required, its nutritional effects on the tree and possible consequences for its alternate bearing cycle. All of this, in the last analysis, has a bearing on the economics of cultivation.

The great majority of authors are in agreement that nitric and ammoniacal nitrogen fertilizers should be recommended in the Spring (2/3 of the amount) and the rest in Autumn - except in regions where the cold weather could destroy the Autumn shoots. Also the amount to be supplied should be determined by experimentation covering each olive growing area. With regard to alternate bearing the authors deduce that Nitrogen content is of importance and also that the Potassium Calcium-Magnesium balance (in which Potassium no doubt plays a crucial part), has a bearing. Finally, comparisons of "on" and "off" years show that fertilization has to be annually adjusted.(31) This work underlines the increasingly scientific nature of the evolving production process

in recent years. Many small farmers even with an efficient Extension Service, may not be very well informed about these Research and Development initiatives and, even if they are, often experience difficulty in putting them into operation on their plots.

1.3.3 Irrigation

Experts throughout the world tend to agree that olive production may be increased and regulated through "proper" irrigation.(32) However, most disagree on the dosage and irrigation schedules in order to obtain optimal production performance. It has been shown that cultivars will react differently to a given irrigation schedule. High water doses can overly increase tree development and its alternate bearing cycle could become accentuated. In the case of olive varieties which, although ripe, remain strongly adhered to the tree, irrigation dosage should aim to increase technical efficiency in order to make the use of harvesting machinery more effective. In the opposite case, where fruit drops with relative ease, irrigation can be combined with the use of nets for harvesting. The cost effectiveness of irrigation schedules also varies according to the planting density of existing olive groves. In addition, considerable investment must be made to mobilize water resources within the plots, with regard to those already under pressure as well as natural flows.(33)

In the past fourteen years, research into comparative analyses of several different irrigation systems i.e. surface, sprinkling, micro-irrigation has been undertaken by eleven different nations: Algeria,

Cyprus, Spain, France, Greece, Israel, Italy, Portugal, Tunisia, Turkey and Yugoslavia. Also, the Rural Engineering Research Centre in Tunisia is a vital promoter of testing of briny water for irrigation. One of the main factors which justifies coordinated effort among researchers in different nations is the diversity of weather conditions. For instance, in the case of Central Tunisia, average rainfall is a mere 150 mm in contrast with Yugoslavia where average annual rainfall is 1,300 mm near to the Adriatic sea. On the other hand, in the Mediterranean there is an estimated average of 122 days where there is practically no rainfall. Also, in Argentina and China (which has as many as 10 million trees) the amount of rainfall obviously differs greatly from that in the Mediterranean countries.(34) Therefore, in order to identify appropriate irrigation schedules, in depth examination and research into local weather conditions is required. Research in Greece by the IHPOC, focused on several comparative trials on groves with the olive varieties, Coroneiki and Mastoidis, at different planting densities. It was found that both clearly benefitted through irrigation. The increase in olive oil production per tree was larger in the Mastoidis variety than Coroneiki. In addition, this increase in production was attained through different mechanisms in each variety. For instance, with the Coroneiki, an increase in the number of olive fruits per tree was observed while, with the Mastoidis, the increase in olive oil production came mainly from the larger size of the olive fruit. Also, precise biological observations showed that the effect of irrigation on the alternate bearing cycle of Mastoidis was more beneficial than of Coroneiki.

In Cyprus differing water dosages were tested with cultivars planted with Greek olive varieties such as Kalamon, Coroneiki and Conservolia. Despite mediocre water quality (soluble salts and calcium carbonate), irrigation proved successful with both micro - and mini-sprinklers.(35) Beneficial effects of irrigation on olive oil production were also obtained in Portugal. Local varieties were used in the research such as Galega Vulgar and Balanquetta.(36) At present only 5-6% of all existing olive groves are under permanent irrigation and this mostly in the area of table olives, where greater fruit size is a priority. Irrigated table olive plots at a relatively larger scale are found in the region of Seville in Spain; the region of Sig in Algeria; the irrigated zones of Morocco; the region of Beit Shean in Israel; and in California, Argentina and France, occupying more than ten thousand hectares in all. Further, because of the improved technology in irrigation systems, traditional plantations in Crete, as well as more modern plots in Spain have turned to irrigation for the production of oil olives as well.(37)

The research undertaken by the eleven different countries throughout the Mediterranean Basin has shown that by the very nature of the tree, clear benefits can be derived from correctly utilizing the water resources within the environment, particularly ground water tables and high pressure areas. It also appears that the olive tree adapts to very low water doses, localized dosages and low stress conditions - such as those found when using micro-irrigation (drip irrigation). According to several technical experts, research on irrigation will continue to progress in th future towards a situation

where water balances can be properly regulated, even in difficult topographical areas and arid zones.(38) If this does turn out to be the case, then olive growing can well assume a new significance as a source of income for the small farmers in those areas such as the Peloponnesos.

1.3.4 Alternating Production Pattern

The outstanding trait of olive cultivation is that production is irregular at the regional, grove and tree levels. Poor and rich production years follow each other for a given tree, without it being possible to pinpoint the precise reason for this behaviour (which also affects many other fruit varieties like apple-trees, pear trees and orange trees). Technicians agree that we cannot speak of a single cause underlying such alternation. The phenomenon seems to be due to a complex interaction on tree biology of external factors (soil, climatic, cultivation operations) and internal factors (physiology). The importance of biological factors has been confirmed by observing that the rate of alternation was, if no climatic hazards intervene, specific to the cultivar (biennial or multiannual).(39)

Generally, it is well accepted that in the olive's alternating production pattern three main factors are at work.(40) Firstly, the tree's state of nutrition and hormone level which can be replaced each year. Secondly, the wrong way of pruning the tree (or lack of pruning altogether) which results in insufficient airing of the tree and the development of parasitic organisms. The third factor has to do with

the Calcium content of the tree during a rich production year: this apparently causes a premature decrepitude which negatively influences production. Improvements in the alternating production pattern can be achieved by suitable fertilization and pruning of the olive trees. On the other hand, olive research institutes throughout the world continue their efforts to identify new genetic varieties which do not posses the trait of irregular production.(41) In 1972, the Perugian Olive Growing Study Centre discovered a cultivar, which was not possible to identify with any of the existing varieties and has therefore called "I-77". The most interesting feature of the "I-77" cultivar is its moderate vigour, as a result of which it hardly develops any sterile branches (suckers), not even during the first years of growth. Moreover, it starts to bear fruit very early on; in fact the first fruit is seen as early as the second year of being planted out. It is also reported that the tree's productivity is fairly high and regular when it is farmed intensively, especially under irrigation. Because of this characteristic, the "I-77" cultivar needs very little pruning, especially when it is trained to a single trunk as is the case of the monoconical shape. As for the oil which this variety produces, preliminary trials at the Milan Experimental Fats and Oils Station revealed an excellent quality, very fruity-tasting and slightly bitter oil. This cultivar has been grown experimentally in orchards in Umbria, Tuscany and Latium, under varying environmental and farming conditions. But the period of experimentation will not be over for a few years yet. Only field trials in several different olive growing areas will show what real agronomic possibilities this cultivar has to offer and whether it can be used on a large-scale.(42)

We may conclude with the observation that the alternate bearing cycle of the olive tree imposes a structural constraint on the olive growing production process. The farmer, unable to remove this constraint in order to obtain a unified production process, has had to suffer great fluctuations in his income. As a result, in an attempt to adapt to this specific condition, farmers grew other crops parallel to olive cultivation and also engage in part-time employment. It is in this way that the natural conditions directly impinge upon economic processes.

1.4 The Application of New Techniques

The first country to implement "modern" farming techniques and to mechanise harvesting was Italy.(43) Greece and Spain followed but many of the techniques are still at the experimental stage. Intensive cultivation of olive growing involves applying all the technical breakthroughs made in variety selection, plant training and mechanization in order to achieve maximum performance from the species, both quantity and quality wise, in addition to cutting cultivation costs. The fundamental concept on which intensive olive cultivation is based is integral mechanisation. This is the tendency to use machinery for all cultivational operations, including pruning and harvesting.(44) Such principles have been used at the Perugia Olive Growing Study Centre in Italy in order to develop a model of intensive olive growing. This Perugia model has been extensively applied in several Italian regions - above all in central Italy. It has been reported that the new groves designed in this manner have produced

remarkable results.[45] More specifically, the trees start to bear fruit early (at 3-4 years old) reaching full, constant production after 7 or 8 years, and the overall productive period of the groves lasts some 40-45 years. In traditional olive growing, the trees start to bear fruit at 7-8 years of age reaching full but not constant production only after 8 or 9 years. Nevertheless, their overall productive period could exceed 100 years. There are still olive growing regions in Greece, like Mani (in Peloponnesos) and Crete, where trees have been planted since Venetian times. Their average production of olive oil is estimated at 700-800 Kgr per hectare. On the other hand, the figures estimated for average conditions, concerning the "new style" of olive growing, in central Italy put yield, when at its height, at around 40-50 quintals per hectare in dry cultivated groves and 55-65 quintals in irrigated groves. These figures are more than 50% higher than yields in traditional cultivation. It has also been reported that the high degree of mechanisation in intensive olive growing saves on labour.[46] Labour hours required fall from 400 hours per hectare calculated for traditional olive farming, to 160-180 hours per hectare. This "new style" of olive growing has taken place in Tuscany, Latium and Umbria. It was set in motion using in part funds granted by the government (Act 198/1985) and in part by the European Community (EEC Regulation 1654/1986) which was made available after the frosts of 1985. It has been estimated that 2,500 hectares of new olive groves were planted in Tuscany between early 1985 and late 1987. Under this EEC Regulation, the producers' associations together put forward eight collective projects for the two provinces of Perugia and Terni which, in total,

envisaged replanting approximately 1,000 hectares by May 1988. In southern Italy, major olive producing areas such as Calabria, Campania and Sardinia have drawn up their own programmes but, as yet, they have not been able to implement them because of a shortage of funds.(47)

So the restructuring of Italian olive growing is definitely under way. In Spain and Greece however, progress is being made at a slower rate and only concerns a few thousand hectares planted with the "new style" of olive cultivation. The most important of the determining factors in setting up this "new style" of olive cultivation are discussed next.(48)

1.4.1 Choice of Environment

The new groves should be planted in areas where the natural fertility of the soil, the position in which the olive groves face, and their altitude and climatic conditions combine to obtain maximum productive performance. The amount of rainfall should be satisfactory or, if not, suitable provision for irrigation needs to be made. Temperature is not supposed to fall below -5°C so that areas with a risk of frost damage have to be avoided. Also, the groves should permit the use of machinery and have a slope of no more than 15-18%.(49)

1.4.2 Land Preparation

Land preparation involves uprooting the old olive trees, levelling and draining the land as far as necessary, and exposing the subsoil with a plough. This contributes to the better development of the tree's rooting system. At the same time fertilizers need be added to improve the soil's fertility, while the physical condition of the soil needs to be renewed through a 50-60 cm deep layer. After this the new olives can be planted. In deciding on a choice of particular olive variety to be planted several factors have to be taken into account: its adaptation to the local soil conditions; its productivity; its power to resist disease; the size of the olive fruit; and the marketed price the farmers expect to receive. New olives can be planted before winter, usually November, as in most places in southern Greece there are no frosty winters. They could be also planted in the Spring.(50)

1.4.3 Training of the Trees

It is suggested that the "monoconical" shape should be used because it offers the possibility of speeding up tree growth and the onset of fruit production. It also considerably cuts pruning costs, in addition to which it is fully suited to mechanical harvesting.(51) Mechanical harvesting can be applied to the olive groves provided the trees are of the "right type" i.e., where the machinery proves effective it has been estimated that harvesting costs can be cut by as much as 25-30% of the value of the harvested product. The best system of harvesting at present employs multidirectional shakers which are fitted on to

ordinary, medium-sized tractors: the shaker grip is clamped on to the base of the trunk and shakes the olives off into nets laid out under the tree canopy. Harvest yields depend on the cultivar, the size and structure of the tree, and the time of year: under optimum conditions, yields of above 85% may be obtained with much saving on time and labour.(52)

1.4.4 The Lay-Out of the Olive Groves

Increasing grove density is recommended for improvements to be achieved. A 7 x 7 m spacing in the southern areas and a 6 x 5 m spacing in the central and northern areas has been widely suggested.(53) During the last 17 years ten million olive trees were planted in Crete covering an area of thirty-three thousand hectares under the "dense and bushy" system. Another few thousand of lectares have been also planted in Peloponnesos and other olive producing areas of the country. The Coroneiki variety is considered the best for dense planting.(54)

At the Institute of Hypotropical Plants and Olive Cultivation, in Crete, experiments have taken place which examined olive production per tree, olive oil content per tree and the mean olive fruit weight. The grove settings for the experiments were 6x6, 6x3, 6x4, 4x4 and 5x5 m. The mean olive production per tree and per year fluctuated considerably between the different settings for seven observation years. The 6x6 m setting occupied the first position for seven consecutive years. The 4x4 m and the 6x3 m setting occupied the last

positions, the rest were in between. The following Table 1.3 presents the results.

Table 1.3: Average Olive Production 1978-1985 (in kgr/Tree)

Settings	Production
6x6	27.7
6x3	15.9
6x4	18.5
4x4	15.3
5x5	22.3

Source: I.H.P.O.C, 1985

We can deduce that the larger the area available for each tree the larger the olive production per tree. This has important agrarian implications.

The second part of the experiment concerned olive production per hectare. During the first few observation years the denser settings of 4x4 m and 6x3 m showed the highest land productivity (Kgr/ha). But over the last years though, the settings 6x6 m and 5x5 m overtook them. Table 1.4 presents the results.

Table 1.4: Average Olive Production, 1978-1985 in kgr/Ha

Settings(m)	Production
6x6	7,772
6x3	8,821
6x4	7,454
4x4	9,315
5x5	8,677.9

Source: I.H.P.O.C, 1985

The setting 6x6 m and 5x5 m showed an increasing production trend but the settings 6x4, 6x3 and 4x4 showed a decreasing trend.

In the third part of the experiment, olive-oil production was estimated, based on the olive-oil content of the fruit during harvesting and the olive production per tree. Comparisons were made for the years 1984-1985 when the trees had completed their development. The settings 6x6 m and 5x5 m gave both years a larger production. This can apparently be explained by the regular and continuous development of the olive trees in distant settings during the whole experimental period. In close settings however, many problems were created such as adverse airing and lighting conditions which resulted in tree diseases and therefore reductions in production. Also, the closer settings made the use of machinery for cultivation very difficult. Currently, the recommended settings for new plants in Greece are 6x6, 6x8 and 8x8 m, which means 150-270 olive trees per hectare.

1.5 The Stages of Olive Production

1.5.1 Pruning

This operation has been practiced through the centuries but in very different ways according to the respective region and the particular olive variety.[55] As there are many different shapes and types of training, the pruning technique should be performed by well informed labour, with experience and willing to devote special care and

attention. This is because suitable pruning can strengthen the tree and positively affect its biology (alternate bearing). Similarly, a badly performed pruning can harm the olive tree and reduce its production drastically. Experts suggest that pruning should be studied in conjunction with fertilization and irrigation techniques, which also have a bearing on tree biology.(56) The aim is to induce steady production. There are two types of pruning currently practiced worldwide. One type is called "Formation Pruning" which gradually, through time came to include a great number of shapes. After trunk formation, in traditional areas the tree was left without care, so explaining the large sizes incompatible with up-to-date olive cultivation, such as those to be found in older groves. Once cultivation had been intensified many other shapes gradually appeared, which may be classified into two groups. The first includes "trained" shapes, where the tree has to take on the shape considered most effective for fruiting. The most widely known example is certainly the "palm-pattern" proposed by Breviglieri on the basis of the shape commonly used for apple and pear trees. However, this shape requires much upkeep. The second group includes "Free shapes" which make more use of the tree's natural stance, either upright or drooping, and therefore require less care. They often lead to earlier fruiting. The standard example is the "bushy vase" shape. It has been shown in the U.S.A. that if trees are not pruned at all during the first few years very early fruiting results.(57)

Recent research on mechanical harvesting shows that the shape of the trees will have to be adapted to the application of harvesting

machines. The work done by various experts illustrates that a single 1-meter trunk is required with a small number of scaffolds, which should only have a few branches to ensure effective conveyance of vibrations.(58) Formation pruning is therefore a method by which the producer seeks to impart a shape suited to cultivational conditions. It can also be said that the large number of shapes included in Formation pruning correspond to stages of the crop's socio-economic development.

The other type of pruning is Fruit-Production-pruning. This method essentially more effectively redistributes nutrients and allows the light to reach the fruit bearing twigs. It therefore enables the most effective possible production unit to be shaped by directly changing the physiology of the tree. It is at this level that the grower may most directly influence the "reproduction balance" required if production is to remain steady. Most experts agree that if Fruit-Production pruning were to be applied every year, the effect of alternate bearing on the tree's production would be reduced.(59) However, due to pruning's bearing on production costs (it stands second to harvesting) it has been claimed that "in the near future, pruning will lose its ranking as an essential operation".

As far as the degree of pruning is concerned, light annual pruning is recommended in such a manner as to bolster the remaining twigs' means of nutrition and help them to grow while retaining a volume in line with modern methods of cultivation. Excessive farmer pruning helps to maintain the degree of alternate fruit bearing of the tree.

In most of the olive growing areas pruning is undertaken in winter when the tree's growth slows down. This is because due to the rise in the Nitrogen content, winter pruning facilitates the twigs' growth in the Spring.(60)

Olive growers have used pruning methods throughout the centuries which, although rough, may have been very effective for their varieties. It seems to me that the variety's stance as well as traditional pruning methods needs to be taken into account in any serious effort towards evolving a technically optimum pruning method.

1.5.2 Ripening of the Olive

The olive fruit slowly increases in size until the stage where its kernel is hardened. Then the fruit's weight increases at a faster rate than its size. At the beginning of Autumn the vigorous green colour of the olive starts to shine and it appears to acquire a winey colour with dark spots on the top. Slowly, the outer skin of the olive acquires a darker permanent colour according to the variety - and then turns softer. Ripening starts the moment that dark spots appear on the fruit's outer skin and lasts until the final colour of the olive has appeared.(61) In most varieties colour change does not appear simultaneously in all fruits. It appears in stages and the ripening time differs according to variety. Other factors influencing the length of the ripening period are the climate and the soil (depending on how infertile it is). In warm soils with sufficient quantities of Calcium and Phosphorous, fertilizers can also speed up ripening and so

increase the content of the fruit in olive-oil. On the other hand, Nitrogen fertilizers increase production but retard the ripening of the fruits. Also, the density of the olive production on the tree is an important factor for the length of the ripening period. The lesser the olive production the shorter the ripening period required as well as the larger the size of the olive fruit. The hours of sunshire also speeds up the ripening of the olive fruit. The total content of the fruit in olive - oil increases over the ripening period and reaches maximum when ripening is completed.(62) The "organoleptic" properties of the olive fruit are negatively affected if harvesting is delayed. The most aromatic olive-oil is produced at the start of ripening independently of the green colour of the fruit. Farmers believe that harvesting should take place just before ripening is fully achieved, so that a better quality of olive-oil can be obtained.(63)

1.5.3 Harvesting

It is well accepted that to a large extent harvesting is the operation which mostly affects the olive tree's biology. Moreover, harvesting alone make up for 60-80% of the total olive production cost which, together with rapidly increasing labour costs, results in steadily increasing production expenses.(64) The situation becomes even more complicated if one considers that currently there is a shortage of available labour in the olive growing regions. For several years now many thousands of tonnes of olives had been left to rot, since it has not been economically feasible to harvest them. Therefore attempts to mechanise harvesting have been made in order to cut costs,

provide better working conditions for the operators and also to better protect the quality of the product. The methods currently used for olive harvesting are: cudgelling, ground and net harvesting, hand picking, mechanical harvesting and harvesting through the use of chemicals.

Cudgelling[65] is applied in many olive growing regions throughout Greece. It involves beating the tree branches with a sturdy stick until the fruit falls on the ground. Experts now claim that this method should be abandoned altogether or at least limited to a minimum because it is harmful to the tree. The branches quite often break and this contributes to the alternate bearing of the tree. Moreover, the branches may be wounded and this causes a break down of the tree's resistance to disease - especially tree tuberculosis. During this method of harvesting many leaves are destroyed and the olive fruit damaged. If, in addition, the olive fruits are left for a few days before being carried to the oil-mill, the olive-oil received will be of poor quality. Cudgelling is mostly used to harvest the olive variety Coroneiki in Peloponnesos and Crete. Farmers are advised to apply the method starting from the inner end of the branches and then follow the direction of the radius of the olive tree's circle. This way the least damage is done to the tree.

Ground and Net harvesting[66] is a method used where olive trees are very tall. When the tree is left free to develop in a densely planted grove then it reaches up to 20 m in height - which makes harvesting impossible by any known method. Then the olives are left to

fall themselves off the tree and are picked up off the ground. This method is not as expensive for the producer but it is harmful to the product. Large losses in production usually occur because of rainfall, the wind and the birds. Furthermore, "Dacos" attacks the olive fruits and the quality of the produced olive-oil worsens. Also alternate bearing is reinforced by the long stay of the fruit on the tree. Nowadays, harvesting of the variety Mastoidis, which grows very tall if left alone, is by nets. This method has considerably reduced labour costs and therefore increased the olive growers' income(67). As the use of nets prevents contact with the ground, damage is limited and therefore the quality of the olive-oil produced is improved. Net harvesting has contributed to a reduction in harvesting cost by 25% of the product's gross value. This together with the improved edible olive-oil quality, has made possible the extension of the Mastoidis variety's life. Otherwise its cultivation would have been abandoned. However, olives should not be left in the nets for a period further than fifteen days as this could lead to a deterioration in the quality of the final produce (as shown by acquired high acidity).

Harvesting by hand picking(68) is a method practiced on trees with relatively small branches. The olives are picked by the worker one by one from the branches of the tree. Quite often, the olives picked this way are placed in a basket hanging on the labourer's neck. This is mostly done with table olives where the appearance of the fruit is an important factor in order to obtain better selling prices. Hand picking in which no machinery is used, gives a yield of roughly 10 kg per hour per worker. Hand held mechanical tools though (leaf removers

and tongs) can contribute to a 20% increase of produce. These instruments are shaped like combs and when used manually, draw off the fruit by traction. Portable vibrating hooks and shaker combs, provide double the output of manual work. These are placed on the tips of poles of varying lengths and are compressor driven. As they shake the branches, ripe fruit is loosened. The comb works as a rake as well as a vibrator and causes all the fruits to fall. The hooks on the other hand, leave a fair amount of fruit still on the tree. These are low cost tools which can be best employed in small groves whose structure does not permit the use of large machinery, or on a very sloped terrain. The most appropriate tree shape for these tools is the bushy or wide base olive tree. Their disadvantage is that they are quite difficult to handle. At present, only mechanical tools are widely used throughout Greece, even on the mountainous olive regions in the province of Messenia in Peloponnesos.(69)

Mechanical harvesting by vibrators enable up to twenty times improvement over manual harvesting produce.(70) These machines transmit a series of vibrations to the plant to separate the fruit from its stalk. Both branch and trunk vibrators are sold. The branch vibrators require low power output (30-45 k.w), while trunk vibrators require high power in order to transmit multidirectional vibrations at high frequency. Moreover, tests carried out in Italian olive growing regions with diverse vibrator models and varied numbers of nets, have demonstrated that "net equipment" requires 20-60% more labour time than "vibrating equipment". It was also shown that efficiency gains of 3-4 trees per hour, on average, can occur by limiting supplementary

operations while fewer workers are needed.[71] So, it is suggested that modern mechanical olive receiving devices should be used instead of nets, for supplementary operations. A number of different models have been tested in Italy including mechanical sheet harvesters, pneumatic nets and spool nets. In tests conducted in Apulia, this sort of equipment doubled the output of mechanical harvesting machinery: going from 3-4 trees/hour per worker using the vibrator and conventional nets, to 6-7 trees/hour per worker with the vibrator-mechanical net system. In Greece, this method of harvesting is not used because tests have shown that during vibration the fruit is damaged and also most of the Greek groves are not suitable for the application of mechanical harvesting.[72]

With regard to table olives, mechanical harvesting seems to have proved more troublesome, even on well adapted trees.[73] This is partly due to the resistance to detachment of the fruit, making for longer vibrating periods with mediocre results. Also, one must not overlook the possibility of damaging the fruit (cuts, bruises) during vibration, and so reducing its final value.

In many olive growing regions in the south of Italy, in Spain and very few regions in Greece limited to the Islands (Corfu, Crete, Lesbos), a great deal of ground harvesting is done (ie. the fruit is picked up after it has fallen to the ground).[74] The soil under the tree crown must be properly prepared, weeded and leveled. Since olives ripen gradually, a certain period of time will elapse from the moment the first olives fall to the end of the fruit dropping period.

Prolonged contact with the soil will give the extracted oil an unpleasant taste. Therefore, it is apparent that oil obtained in this manner will have to be refined in order to become edible. Apart from qualitative considerations, the cost of harvesting must be added given that traditionally this is a labour intensive task. Because of this ground harvesting machines have been introduced and used widely in Italy and rather less so in Spain. These machines come into different types.(75) For instance they could be Sweepers, devices with rollers that sweep the fallen olives toward the base of the machine. The ground must be prepared, levelled and flattened before they are used. Another type is Vacuums, which use an air current to vacuum up the olives which are piled into rows. Also Ventilators are quite common and use a jet of tangential air to push the fruit towards the receiving device. Again the soil must be prepared before hand. Finally, Sieves are used, which comprise of sieves mounted on vibrating platforms which separate off all impurities (soils, stones and leaves). It has been shown that Sweepers produce about 100 kg/hour, per worker, while Sieves provide about half that amount.

The introduction of mechanical harvesting first of all implies new intensive plantations. If the vibrators, for instance, are to be used to their fullest effect, both the machine and the tree must be mutually adapted. This implies using growing techniques and pruning systems which provide farmers with well structured, good sized trees, whose make-up of branches, fruit and leaves is properly balanced for mechanical harvesting and which allows for efficient transmission of vibrations to all branchwork. Tree productivity seems to be another

fundamental element. It has been shown that mechanical harvesting does not become profitable unless tree output exceeds 30 kg/tree.(76) In Greece, the average productivity is 10.7 kg/tree. There are regions though, in Crete and Lesbos under intensive cultivation, where such levels of productivity have been measured at 92 kg/tree.(77) Moreover, gradual ripening makes it difficult to dictate the exact moment for vibration and a second operation may be needed. But repeated applications seem uneconomic since each later operation will achieve lower amount of fruit yield. Another factor which can make mechanical harvesting difficult is a sloped terrain. Slopes should not exceed 15-16% for rubber tire vehicles or 17-18% for machines with articulated wheels. Above this percentage, harvesting become troublesome and even impossible.

The other method of harvesting is through the use of chemicals.(78) The I.H.P.O.C in Crete has been experimenting with two chemical substances which, if sprayed on the olive tree, causes the fruit to fall. These substances are called Ethrel and Alsol. It was found that with the Mastoidis variety 83% of the olives fall after the chemical application. On the other hand, with the Coroneiki variety, the chemicals had a negative effect on the alternate bearing of the tree. They caused its leaves to fall (about 40% of them) and only 60% of the olive fruits fell to the ground. Therefore, experiments of Coroneiki are inconclusive while on Mastoidis they have been quite successful, especially in large production years. The cost of the chemicals though, and their application on the tree by spraying is considerable.

For this reason they have not been so far used by growers on the Mastoidis variety.

1.6 The Input Costs of the Major Factors of Production

The importance of employment in olive growing lies in the seasonal distribution of labour.(79) Labour is required mainly through the winter when there are not many other opportunities of work available in the rural sector. As was stated earlier in this Chapter, the recruitment of labour during olive harvesting has become increasingly difficult over 1951-1981 as more and more people have left the countryside to try to obtain permanent jobs in the urban centres. Table 1.5 presents the percentage distribution population into urban, semi-urban and rural, at national and provincial levels. The province chosen is Messenia, one of the largest olive producing regions of Greece. We may observe that the rural population declined by 17.4% while, in the province of Messenia it declined by 10%, from 66% in 1951 to 56% in 1981. On the other hand, the urban population increased by 10% in the province and by 21.3% in the country as a whole.

Table 1.5: Urbanization in Greece and the Province of Messenia (in percentages)

Year	Area	Urban[2] Population	Semi-Urban[3] Population	Rural[4] Population
1951	N[1]	36.8	15.5	47.7
	P	17.0	17.0	66.0
1961	N	43.2	13.0	43.8
	P	19.0	16.0	65.0
1971	N	53.2	11.7	35.1
	P	23.0	17.0	60.0
1981	N	58.1	11.6	30.3
	P	27.0	17.0	56.0

Notes:
1. "N", National level; "P", Provincial level (Messenia)
2. Urban population refers to geographical areas with 10,000 people or over.
3. Semi-Urban population refers to areas with 2,000-9,999 people
4. Rural population refers to areas with less than 2,000 people

Source: N.S.S.G, Population Censuses, 1951, 1961, 1971, 1981.

With special reference to the province of Messenia, which is primarily an olive producing region, there was no data available on the employment situation in olive growing as a direct and separate agricultural activity. Nevertheless, two facts can be deduced from the statistics. First, the absolute number of people between 1951-1981 declined from 227.9 thousand to 159.8 thousand. So there was a reduction of 29.8%. Secondly, the labour force in the province (i.e. people between the ages of 15-64) was reduced from 62% in 1951, to 57% in 1981. At the same time the percentage contribution of young children (up to 14 years of age) fell from 30% in 1951, to 22% in 1981, while that of older people over 65 years increased from 8% in 1951, to 20% in 1981.(80) If we therefore combine this information with that of Table 1.5, we can well imaging that other things being equal a shortage of labour in the olive harvesting seasons in Messenia presented the

growers with a constraint during the olive production process. In the 1960's and the best part of the 1970's, workers from northern Greece, Macedonia and even Thrace travelled to southern Greece and to Messenia where they offered their services during the olive harvesting period. Nowadays, the problem has certainly intensified and is one of the reasons why mechanisation of harvesting might now more readily appeal to olive growers. Table 1.6 shows the seasonal distribution of labour days in olive growing for 1975-1976.

Table 1.6: **Seasonal Distribution of Labour Days[1], 1975-1976**

Spring	Summer	Autumn	Winter	Year Total
6,842,900	2,865,600	11,253,300	18,957,900	39,919,600
17.1%	7.2%	28.2%	47.5%	100%

Notes: 1. Labour Day = 8 hour day

Source: **A.B.G, Department of Vegetable Production, 1976.**

In 1976, there were about 40 million labour days (which represented 22.4% of the total labour days in vegetable production). So, olive growing is important as a source of rural employment-principally because of its seasonal dimension. Labour, remains the major factor in determining production cost in olive growing. The expenditure on other inputs in the olive production process makes up the total production cost. At the macro levels information on the structure of input cost is quite important because the Producer Selling Price is annually determined by the Agricultural Ministers of the E.E.C member states. The Producer Selling Price is based on the Production

Target Price which is "fixed at a level fair to producers, account being taken for the need to keep community production at the required level".(81)

In the normal course of things technological improvements are introduced in order to obtain an optimum output stream at minimum cost. We should however note that production decisions in olive growing are mostly made by small-scale present producers whose goals cannot be easily defined or tied down precisely. They still engage in traditional patterns of cultivation - often under adverse conditions, and their survival is largely dependent on how they manage to influence the behaviour of interests groups and lobbies within the political framework.(82) Farm gate efficiency criteria seldom seem to figure first in their order of priorities. Of course, under the EEC regime, where modern intensive cultivation is the rule, the empirical habits of the olive growers finely developed over the centuries can come into conflict with forces of change stemming from outside. In order to adapt to changing economic and institutional conditions, the olive growers have organised themselves into producer cooperatives. This social organisation of production however is, largely concerned with the marketing of the produce and hence is still only at the level of exchange. Small scale production was retained, and rising costs accommodated. At the micro level, farm production costs clearly differ enormously since they, depend on the size of the cultivated plot, the amount of fertilizers and pesticides used, the age and variety of the olive trees, their shape and the combination of labour

and capital during the production process especially with respect to pruning and harvesting.

The results of a national survey conducted during 1975-1976 on the production cost of olive-oil in some of the main olive producing regions of Greece, are presented in Table 1.7. This survey was conducted by the provincial branches of the Agricultural Bank of Greece on behalf of the Ministry of Agriculture. In each province a "representative"(83) sample of farms was selected, and on the basis of a questionnaire, information was obtained about different farm operations and production expenditure. This information was then supplemented and checked with the Banks' figures about each farm. The minimum sample size used was fifty farms. Each branch constructed a weighted average from sample information which was then taken as the representative production cost structure at a provincial level. The monetary values were expressed in current (drachma) prices. The production cost of olive-oil per Kgr. was found by estimating total expenditure and interest payments (per stremma) of olive-oil production, reduced by the value of the corresponding olive-residue and divided by the total quantity of olive-oil produced. From Table 1.7, it is also possible to (tentatively) compare costs between "traditional" and "intensive" cultivations, in the province of Hania, Crete. We may observe that production cost per Kgr. in intensive olive cultivation is lower (44.3 dr/kgr) compared with traditional cultivation which ranged between 50.6 and 88 dr per Kgr. of olive-oil. Corfu showed the largest olive-oil production per stremma and also the highest capital cost. As a result Corfu's total expenditure was one of

the highest, but the production cost per Kgr. of olive-oil was the lowest among the traditional cultivations due to the relatively large production per hectare. On the other hand, Lesbos had the highest production cost per Kgr of olive-oil due mainly to relatively low levels of productivity (calculated as the amount of olive-oil per stremma) and higher rates of expenditure. The provinces of Lakonia and Elia showed low production figures per stremma which, combined with low overall expenditure, resulted in a relatively average production cost per Kgr. of olive-oil. The comparison between traditional and intensive cultivation in Hania favours the latter. Not only is production per stremma 50% larger but also the production cost per Kgr of olive-oil is lower by 23.2%. It is worth noting that the labour required for olive harvesting formed between 65 and 82% of the total amount of labour required during the production process. Because of that, there seems to be some prima facie case for mechanisation of harvesting. This can be argued on two grounds. Firstly agricultural wage increases make labour the highest input cost, and secondly as non-farm employment is created the opportunity cost of rural labour increases and therefore its supply price is bid up.

Some nine years later, in 1984, the Ministry of Agriculture recorded production cost figures for olive-oil in traditional and intensive cultivations. These are presented in Table 1.8. The survey was undertaken by local branches of the Agricultural Bank of Greece but this time at the country level. The same procedure was employed but the samples were more "representative" as the regions taking part in the survey were considerably smaller. Disaggregation offers greater insight

combined with larger precision of the estimates. We observe that among the traditional cultivators Lesbos had the lowest production cost per Kgr of olive-oil. The intensive cultivation in Heracleon of Crete had production costs some 15% lower than that of Lesbos. Overall, the proportionate expenditure on labour and fertilizers came to 51.5% of the total production cost. Interest on capital plus interest on deferred payments made up a huge 43.8% of the total cost. If one is to compare[84] production costs between 1976 and 1984 for the regions of Lesbos, Hania and Heracleon, it is apparent that in Lesbos between 1976-1984 there had been a cost reduction of 24.6% per Kgr of olive-oil produced under conditions of traditional cultivation. In Heracleon the cost reduction was 10% per Kgr, while in Chania there had been a cost increase of 31% per Kgr between 1976-1984. During the same period the producer price was reduced by 5% in real terms while production of olive-oil increased by 25% in each of these regions. This further suggests that the increase in the production of olive-oil cannot be explained satisfactorily by the change in production cost in each of these regions, or by the real producer price which was actually reduced when deflated by the Retail Price Index (1974=100).

1.7 The Trend of Production, 1950-1988: World and Greek National Production of Olives and Olive-Oil

According to the I.O.O.C the total number of olive trees worldwide is about 750 million, and together they cover an area of some 9 million hectares. As already mentioned the Mediterranean basin has no less than 98% of the existing olive trees and produces 95% of world olive-oil production. The main producer countries according to their

regional contribution are: Spain, Italy, Greece, Portugal, Tunisia, Algeria and Morocco. Spain produces nearly one-third of the Mediterranean's production.

Table 1.9 presents olive-oil production by country, and world total between 1950-1988. We may observe that over 1950-1970 the average annual world production was 1,265,428 tons. The lowest production 638,000 tons was recorded in 1950. Between 1970-1988 the average annual world production increased to 1,659,000 tons, a rise of 31%. The highest production was recorded in 1980, and was 2,223,000 tons. European production of olive-oil during the same period increased by 26% and mainly concerned increases in the production of the Mediterranean countries. On the other hand, the increase of olive-oil production in other continents like Africa, America and Asia was much larger than the European one. Some of the reasons for this expansion are firstly, the more intensive cultivation of the olive-tree worldwide, (through denser plantings, and the increasing proportion of irrigated groves) which improved output per hectare. Secondly, the effective fight against olive-tree diseases and better information about all stages of the production process. Thirdly, a noted expansion of the areas of olive cultivation throughout the world.(85) Needless to say that these new area started from a very low base and so naturally would register faster growth rates.

The production of olive-oil and other edible oils is shown in Table 1.10 for the period 1983-1986. We observe that the world production of olive-oil is much less than that of most known vegetable

oils. Therefore there seems scope for expansion providing that proper information about the biological superiority of olive-oil is put effectively across in a marketing sense. Production of olives is about 8-9 million tons annually. Out of that quantity, 400-700 thousand tons are used in the production of edible olives, the remainder is used for olive-oil production. The largest producer of edible olives in the world is Spain followed by Greece and then Italy.

Olive cultivation in Greece covers an area of 0.78 million hectares. According to the Ministry of Agriculture the number of olive trees is estimated at 126,000,000. The vast majority of them (some 103,000,000) are cultivated for olive-oil production, while 23,000,000 are cultivated for edible olives only, (Table 1.11). The area of olive trees destined for olive oil production covers 0.65 million hectares; the groves cover 0.53 million hectares and a further 0.12 million hectares are planted with scattered olive trees. By my calculations therefore, Greece currently accounts for about 8% of the world area covered with olive trees but nearly 16% of the total number of trees. From Table 1.11, it may be seen that Peloponnesos and West Sterea cover about 40% of the cultivated area and 39.5% of the number of trees destined for olive oil production. Crete covers 26.7% of the total area and has 26% of the olive trees, while Atica and the Islands account for 24% and 26% respectively. We deduce that these three regions account for about 90% of area and number of olive trees cultivated for olive-oil production. The introduction of new techniques have improved output per hectare (as previously

mentioned). In Greece, while traditional cultivation produces 2,500-3,000 kgr of olives per hectare, under the "new style" of olive growing, production has increased to 7,000-9,000 kgr per hectare which corresponds to 1,500-1,800kgr of olive-oil per hectare.(86)

The content of the olive-fruit in olive-oil depends on the tree-variety. Table 1.12 shows the different varieties, their content in olive-oil terms and the regions where each variety is cultivated. Coroneiki is the most commonly found variety. The tree reaches a height of between 8-15 metres, and the colour of its fruit is almost black. The content of Coroneiki's fruit in olive-oil can reach a maximum of 27%, and the size of the fruit is the smallest among the Greek varieties. That makes harvesting difficult and costly. Another common variety of olive tree found in Greece is Mastoidis (or Tsunati). Its height ranges between 15-20 metres and the content of its olive fruit in oil is 24-25%.(87)

Table 1.13 presents production of olive-oil in Greece, E.E.C and the World total between 1968-1981. The figures on production are taken from different sources, the F.A.O Production Yearbooks in the first case, (1.13(a)) and the I.O.O.C in the second (1.13(b)). All these figures are expressed in thousands of tonnes. We may observe that there is a discrepancy between the time series data supplied by these two sources. The overall diversity in the recorded production figures for Greece is of the order of 24.5% which is a considerable amount of olive-oil to be missed out in the calculations of the International Olive Oil Council. Moreover, production figures supplied by the Greek

Ministry of Agriculture during the same time period show a 10% higher production than that recorded by the I.O.O.C, yet a 14.6% lower production than that recorded by the F.A.O. It is difficult to explain the obvious and significant differences between the above estimates but it seems most likely that different ways of estimation have been used by the scientific personnel of each organisation.(88)

Table 1.14 presents edible olive production in Greece between 1960-1988 in Greece. The Calamon variety occupies the greatest area under cultivation as far as the production of edible olives is concerned. The varieties Conservolia and Spanish Mauzarilla are cultivated to a lesser extent. The cultivation for edible olive production can be found in all the regions of Greece. Table 1.15 shows the development of edible olive production for selected years between 1970-1985 as well as the number of trees. We may observe that between 1970-1980 there has been a large change in the number of olive trees as well as the area under cultivation (about 71.3%). Between 1980-1982 the increase

Table 1.15: Area and Trees for Edible Olive Production
(In Stremma)[1]

Years	Area[1]	Number of Trees
1970	728,215	12,197,597
1980	1,247,750	20,899,812
1982	1,347,055	22,566,700
1983	1,357,800	22,726,800
1984	1,376,140	23,051,400
1985	1,373,800	23,095,100

Notes: 1. One Stremma = 1/10 Hectares

Source: Ministry of Agriculture, Department of Forestry, 1988

in the number of trees and area was nearly 8%. But between 1982-1985 there has only been a small change in the number of olive trees cultivated (+2.3% in 1985 compared with 1982), while in the area under cultivation there has also been a 2% increase in 1985 on 1982. We can also deduce from the data in Table 1.15 that the expansion in edible olive cultivation has not been combined with denser plantings since the average density remains at 16-17 trees per stremma. In the total edible olive production of Greece, Macedonia contributes 12.2%, Thrace 2%, the Aegean Islands 0.4%, Sterea 41.8%, Peloponnesos 9%, Eptanesos 0.2%, Epirus 4.3% Thessalia 27.1% and Crete 3%. Most edible olives therefore are produced in Thessalia and Sterea, (central Greece) and Macedonia, (north Greece). While most olives for olive-oil production are grown in south Greece, Peloponnesos and the Islands.

We can conclude that the historical concentration of olive-oil production in the Mediterranean region continued between 1950-1988. However, even though there has been a significant increase in olive-oil production the underlying trend is decreasing. The annual compound rates of growth have been calculated and are presented in Table 1.16.

Table 1.16: Annual Compound Rates of Growth[1] of Olive-Oil Production (In percentages)

Years	Greece	Italy	Spain	EEC-12	Mediterranean[2]	World
1950-1974	6.2	3.4	2.6	3.3	3.1	3.4
1976-1988	0.9	2.8	-0.15	1.1	-0.8	0.4
1950-1988	5	2.1	1.8	2.2	2.4	2.3

Notes: 1. Compound Rate of Growth = ι = Antilog $\frac{\text{Log } Y/A}{n}$ - 1

Y = Final Production Value
A = Initial Production Value
n = Number of Years

2. Mediterranean Countries apart from E.E.C member States.

Source: Derived from Table 1.9

Since 1976 olive-oil production is increasing at a very slow rate while for Spain and other Mediterranean countries the rate of annual change is negative. Overall, between 1950-1988, annual growth has been lower in the E.E.C. countries than in the world as a whole - apart from Greece. It is against these global trends in production that we go on to consider the structure of the national industry in Greece.

Conclusions

The production of olive-oil in the Mediterranean region is a combination of two very important aspects of evolving cultivation. Its long historical tradition has meant that olive growing has established deep social and cultural roots in the area, and the second influence has been the play of natural conditions of production which comprise specific environmental factors as well as the physiological characteristics of the trees themselves. As a result world production remains concentrated in the Mediterranean basin. In this Chapter I have argued that although olive-oil production has increased steadily throughout the post-Second World War period, the rate of annual growth has considerably slowed since the 1970's. This trend has occurred despite the parallel evolution of techniques which aimed at restructuring olive cultivation in order to increase output and reduce costs, such as denser planting, improved methods of irrigation and a greater use of mechanical machinery for harvesting. In the Greek case, behind the sluggish annual rate of growth between 1976-1980 lies the fact that the "traditional" aspect of olive cultivation remains strong. The factors contributing to the existence of this state of affairs have been identified as the slow pace of development in the application of the evolving techniques; labour shortages in the rural sector; and also the fact that considerations of economic efficiency must be placed into a wide social context encompassing the olive growers' decision making horizons. In Chapter Two it will be contended that the majority of the olive farms are rather small in comparison with E.E.C-standards, and the effect of a number of socio-economic and political developments has

delayed the restructuring of olive production at the farm-gate level. Of course, one of the determining factors underlying the production trends which have been identified is the market demand for the product. This issue has become quite complex since Greece entered the Common Market in 1981. This is because on the one hand the market for olive-oil has expanded, while on the other it is subjected to supply quotas and competition from an increasing and free market for its substitutes. These issues are discussed in Chapter Eight.

References

1. See R. Standish, The First of Trees. The Story of the Olive (London, 1960).

2. See G Balatsouras, The Olive Tree, (Athens, 1986)+

3. Ibid.

4. See D. Eitam, "Israel's Oil Industry Museum", Olivae, IVth Year, No.19, 1988.

5. See A. Kiritsakis, The Olive-Oil (Thessaloniki, 1988)+

6. See Herodotus, "Travels": in Ancient Greek Writers, (Athens, 1976).+

7. Se M.J. Finley, The Ancient Economy, (London, 1973).

8. See A. Kiritsakis, 1988, op.cit.

9. See Plutarch, "Caesar": in Ancient Greek Writers, (Athens, 1976).+

10. See M. Lenoir and A. Akerraz, "Olive Cultivation in Ancient Morocco", Olivae, No.3 1984.

11. See R. Duncan-Jones, The Economy of the Roman Empire: Quantitative Studies, (Cambridge, 1974).

12. Ibid.

13. See Zaccaria Bembo's report, June 1712, : in N. Karabela, Messeniaka Grammata, (Calamata, 1981). A translation appears in an Appendix to Chapter Three.

14. See M. J. Finley, 1973, op.cit

15. See A. Kiritsakis, 1988, op.cit

16. See G. Balatsouras, 1986, op.cit

17. See H. T. Hartmann and J. Porlingis, "Effect of Different Amounts of Winter Chilling Fruitfulness of several olive varieties", Bot. Gazette, 119:102, 1957.

18. Ibid.

19. Derived from G. Balatsouras, 1986, op.cit, p.36.

20. See E. Sfakiotakis, Lessons in Olive Cultivation, (Thessaloniki, 1987)+

21. Ibid.

22. See G. Balatsouras, 1986, op.cit

23. Ibid.

24. Information was obtained from scientific personnel in the Olive Laboratory of the Highest Agricultural School of Athens.

25. The Institute of Hypotropical Plants and Olive Cultivation, I.H.P.O.C, Reporting Experimental Work on Soil Cultivation and Weeding, (Crete, 1980).

26. Ibid. In both studies the olive trees were eight years old.

27. See M. Poli, "The Olive's Alternating Production Pattern", Olivae, IIIrd Year, No.10, 1986.

28. Quoted by M. Poli, 1986, Ibid.

29. See C. Bould, "Comparative Role of Soil and Leaf Analysis in Crop Nutrition Control" : in C. R. Coll, Controle de la Nutrition Minerale et de la Fertilization des Cultures Mediterraneennes, (Montpellier, 1964).

30. The results of these experiments were obtained from the Ministry of Agriculture, Department of Forestry, 1988.

31. See M. Poli, 1986, op.cit.

32. See J. Le Bourdelles, "Activities of the Sub-Network on water Use in Olive Cultivation Results Obtained New Prospects for Research(1)", Olivae, IInd year, No.6, 1985.

33. See N. G. Michelakis, "Olive Tree Behaviour under various Irrigation Conditions", Unpublished Ph.D Thesis, Submitted to the Highest Agricultural School of Athens, 1986.+

34. See J. Le Bourdelles, 1985, op.cit.

35. Ibid.

36. Ibid.

37. See N. G. Michelakis, 1986, op.cit.

38. See M. Poli, "The Olive's Alternating Production Pattern", Olivae, IIIrd year, No. 12, 1986.

39. Ibid.

40. See E. Sfakiotakis, 1987, op.cit

41. See "Perugia CNR Olive Growing Study Centre", Olivae, IIIrd Year, No.11, 1986.

42. Ibid.

43. See G Giametta, "Mechanization of the Harvest", Olivae, IIIrd Year, No.13, 1986.

44. See G Fontanazza, "The Intensive System", Olivae, Vth Year, No.22, 1988.

45. See G. Giametta, 1986, op.cit.

46. See G. C. Martin, "Olive Harvest in California, United States of America", Olivae, IIIrd Year, No.11, 1986.

47. See G Fontanazza, "New-Style Olive Cultivation is no longer a Mirage", Olivae, Vth year, No.22, 1988.

48. Ibid.

49. See G Fontanazza, "The Intensive System", Olivae, Vth Year No.22, 1988.

50. Ibid.

51. See M. Poli, 1986, op.cit.

52. See G. Giametta, 1986, op.cit.

53. See G. Fontanazza, "The Intensive System", Olivae, Vth Year, No. 22, 1988.

54. I.H.P.O.C, Institute of Hypotropical Plants and Olive Cultivation, "Experimental Work on Olive Groves Lay-Out", Information received through personal contact, 1988.

55. See M. Poli, "The Olive's Alternating Production Pattern", Olivae, IIIrd year, no.12, 1986.

56. Ibid.

57. See M. Poli, 1986, op.cit.

58. See G. C. Martin, 1986, op.cit.

59. See M. Poli, 1986, op.cit.

60. See C. Bould, 1964, op.cit.

61. See G Balatsouras, 1986, op.cit.

62. See A. Kiritsakis, 1988, op.cit.

63. Information received through personal contact with oliver growers in the province of Messenia, Summer 1988.

64. See G. Giametta, 1986, op.cit.

65. See N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949).

66. See A Kiritsakis, The Olive-Oil, (Thessaloniki, 1988).

67. I.H.P.O.C, Information received by personal contact, 1988.

68. See G. Giametta, "Mechanization of the Harvest", Olivae, IIIrd Year, No.13, 1986.

69. Information received from Eleourgiki, Department of Primary Production, 1988.

70. See G. Giametta, 1986, op.cit.

71. Ibid.

72. Information received from the Olive Research Institute of Messenia, Summer 1988.

73. See G. Giametta, "Mechanical Harvesting of Olives in Algeria", Olivae, IInd Year, o.9, 1985.

74. See A. Kiritsakis, 1988, op.cit.

75. See G. Giametta, "Mechanization of the Harvest", Olivae, IIIrd Year, No.13, 1986.

76. Ibid.

77. Ministry of Agriculture, Department of Forestry, information received by personal contact, 1988.

78. See G. C. Martin, 1986, op.cit.

79. Agricultural Bank of Greece, Department of Vegetable Production, 1976.

80. Derived from N.S.S.G, Population Censuses, 1951, 1981.

81. See Official Journal of the European Communities, No. C134/5. These are prices set by the E.E.C in the context of the Common Organisation of the Market for Oils and Fats. The system is discussed in Chapter Two.

82. See M. Tsinisizels, Groups and Agriculture in the European Community, (London, 1990) and T. Shanin (ed), Peasants and Peasant Societies : Selected Readings, (Harmondsworth, 1971).

83. "Representative" is the term actually used by the provincial branches of the Agricultural Bank of Greece. Some of the criteria used in the selection of the sample were: farm size, cooperative membership, and the amount of indebtedness to the Bank. Its not clear to me that the sample is unambiguously representative - but despite this uncertainty, the data is obviously very useful.

84. To make the comparison the costs were deflated by the Retail Price Index, with a value 1974=100, for the respective years 1976, 1984. The Index was derived from the N.S.S.G, Department of Prices.

85. Derived from Olivae, I.O.O.C, various issues.

86. Information received from Eleourgiki, Department of Primary Production, 1988.

87. See G. Balatsouras, 1986, op.cit.

88. For instance, the figures supplied by the I.O.O.C were early estimates as it is not the practice of the latter to publish revised figures when they became available. On the other hand the F.A.O figures it is possible to include annual stocks as they are published towards the end of the marketing year.

Table 1.2: Results of the Study on Untilled Soil, Tilled and Weeding of Dry Olive Groves

I. Study of the Coroneiki Variety (average figures per tree, 1964-1971)

Type of Soil Intervention	Annual Fruit Growth (cm)	Content in Olive-Oil (%)	Olive Production (kg)	Olive-Oil Production (kg)
Tilled	5.9	24.6	26.8	5.9
Untilled	7.4	23.7	30.4	6.6
Weeding (Z1)*	7.4	24.8	31.7	7.4
Weeding (Z2)*	7.2	22.9	33.7	7.2
Weeding (Z3)*	7.2	23.2	34.0	7.3

II. Study of the Mastoidis Variety (average figures per tree, 1964-1971)

Type of Soil Intervention	Annual Fruit Growth (cm)	Content in Olive-Oil (%)	Olive Production (kg)	Olive-Oil Production (kg)
Tilled	5.51	31.5	66.2	21.0
Untilled	6.12	30.7	70.7	21.8
Weeding (Z1)*	6.64	29.4	73.3	23.0
Weeding (Z2)*	6.90	30.4	74.0	21.5
Weeding (Z3)*	6.72	30.4	62.0	17.7

Notes: *Z1 refers to the blend of Atrazine and Simazine

Z2 refers to Gramoxone and Z3 to Roundup.

Source: I.H.P.O.C, Crete, 1973.

Table 1.7 : Production Cost of Olive-Oil, 1975 - 1976

REGIONS (PROVINCES)	PRODUCTION Kg/stremma[1]	"VALUE" OF LABOUR	EXPENDITURE ON MACHINERY	EXPENDITURE ON FERTILISER	INTEREST ON CAPITAL	TOTAL EXPEND. & INTEREST	PRODUCTION COST dr/kg	MONETARY EXPEND.	LABOUR DAYS Total	LABOUR DAYS Harvest
TRADITIONAL CULTIVATION										
CHANIA	100	1,990	774	1,023	2,254	6,011	57.7	43	5.5	4.5
%		34	12	17	37	100			82	
HERAKLION	110	2,769	412	1,079	2,457	6,717	59.6	30	6.4	5.0
%		41	6	16	37	100			78	
LESBOS	71	2,836	195	744	2,471	6,246	88	32	7.6	5.5
%		45	3	12	40	100			72	
KERKERA	135	2,986	344	779	2,721	6,830	50.6	38	10.5	8.0
%		44	5	11	40	100			76	
ZAKENTHOS	110	2,987	293	1,139	2,538	6,957	61.3	43	6.8	4.5
%		43	4	16	37	100			66	
ELIA	55	1,595	36	750	1,237	3,618	65.8	27	5.1	3.0
%		44	1	21	34	100			59	
LAKONIA	52	1,158	240	525	1,592	3,515	66	41	3.1	2.2
%		33	7	15	45	100			71	

Table 1.7 : Production Cost of Olive-Oil, 1975 - 1976 (continued)

REGIONS (PROVINCES)	PRODUCTION Kg/	"VALUE" OF LABOUR	EXPENDITURE ON MACHINERY	EXPENDITURE ON FERTILISER	INTEREST ON CAPITAL	TOTAL EXPEND. & INTEREST	PRODUCTION COST dr/kg	MONETARY EXPEND.	LABOUR DAYS Total	Harv
MESSENIA	75	3,235	464	812	1,612	6,123	78.6	37	6.2	4.0
%		53	8	13	26	100			65	
INTENSIVE CULTIVATION CHANIA	150	1,960	700	1,390	2,981	7,031	44.3	41	5.5	4.2
%		28	10	20	42	100			76	

Notes: 1. One stremma = 1/10 hectare

Source: Ministry of Agriculture, National Survey, 1975 - 1976.

Table 1.8 Production Cost of Olive-Oil, 1984

REGIONS (COUNTIES)	PRODUCTION kg/stemma[3]	GROSS VALUE dr/stemma	AVERAGE PRODUCER Price dr/kgr	LABOUR DAYS Men	LABOUR DAYS Women	VALUE Total Labour Value	VALUE Machinery	VALUE Fertilisers	VALUE Pesticides	Total Expenditure on Labour F & P	Monetary Expenditure	Interest on Capital and Int. on def. Payments	Production Cost dr/kgr
1													
(T)[1] KALAMATA	50	16,500	330	1.7	1.2	6,500	1650	797	110	8,877	2,900 32.7%	6,540	321.7
(T) LESBOS (PARAKILA)	70	15,900	227.1	2.5	2.5	7,000	600	525	290	9,873	1,600 16.2%	7,916	267.5
(T) LESBOS (THERMI)	80	16,600	207.5	2.8	3.0	8,600	700	502	332	11,404	2,700 23.7%	7,528	248.3
(T) CHANIA (KONTOMARI)	110	28,710	261	2.6	3.0	9,700	2,000	502	-	17,312	3,900 24.5%	14,586	304.7
(I)[2] HERACLION (LIYORTINOS)	151	36,360	240	2.6	3.0	12,500	2,400	386	114	15,822	2,400 12.6%	15,015	216.3
(T) KERKERA (PERITHEA)	112.5	27,112	241	3.7	2.3	8,850	600	799	500	14,949	3,600 24.1%	15,105	277.1
(T) KERKERA (SELEFKIA)	132	35,983	272.6	5.7	2.0	15,575	-	1480		20,299	- -	18,041	305.2
(T) SPARTI (GITHIO)	40	11,200	280	1.8	1.0	5,300	500	871	-	7,784	5,800 74.5%	5,551	348.9
TOTAL	746	188,365	-	23.4	18.0	73,575	8,450	5,862	2,665	106,320	-	90,282	-
AVERAGE	93.2	23,545.6	252.6	2.9	2.3		9,196	732.8	331.9	13,290	21.5	11,285	276.8
PERCENTAGE CONTRIBUTION TO TOTAL EXPENDITURE	-	-	-	-	-	35.7	4.1	2.8	1.3	51.5	-	43.8	-

NOTES: 1. (T) Traditional, 2(I) = Intensive cultivation (3) 1 stremma = 1/10 hectare

SOURCE: Ministry of Agriculture, National Survey, 1984

Table 1.9: **Production of Olive-Oil by Country, 1950-88**

Quantities in 1,000 Tons

Year	Italy	France	Greece	Portugal	Spain	Turkey	Cyprus	Tunisia	Algeria	Morocco	Syria	Israel	Europe	EEC-9	World
1950	208	5	42	43	192	52	2	46	18	10	14	1	490	213	638
1951	428	10	160	114	665	39	1	50	26	22	8	-	1377	438	1551
1952	229	6	78	56	342	66	2	40	26	12	5	-	705	235	906
1953	401	11	175	122	380	44	2	92	24	16	6	2	1089	412	1317
1954	329	8	124	52	326	83	1	60	32	27	8	4	839	337	1106
1955	209	5	117	75	282	41	1	25	18	11	7	-	688	214	813
1956	199	1	163	100	436	90	2	103	26	37	17	4	900	200	1231
1957	405	1	188	109	342	43	2	59	19	8	7	1	1045	406	1225
1958	292	2	102	66	346	90	1	136	19	30	15	4	807	294	1147
1959	325	-	180	98	484	66	-	52	20	12	6	2	1087	325	1270
1960	375	1	77	83	456	69	1	123	14	30	10	-	993	376	1414
1961	439	-	294	123	380	120	4	38	19	20	9	3	1242	439	1505
1962	345	2	69	56	333	56	1	52	17	22	20	1	812	347	1000
1963	584	1	251	107	685	102	2	104	17	28	15	3	1642	585	1958
1964	334	1	141	45	116	122	1	108	17	17	21	1	648	335	979
1965	455	1	191	72	323	60	4	60	18	44	14	1	1048	456	1289
1966	357	1	180	38	464	155	3	22	15	17	24	1	1049	358	1317
1967	594	3	224	81	269	80	5	58	22	75	24	1	1182	597	1503
1968	429	2	228	53	492	159	2	63	17	50	22	3	1210	431	1577
1969	521	4	178	78	393	54	2	28	15	21	26	4	1173	525	1367
1970	464	1	190	67	434	118	1	90	13	26	16	-	1161	465	1461
1971	670	3	218	42	380	51	2	167	25	34.8	22	3.2	1239	673	1661
1972	370	1.5	255	54	491	176	3	66	22.8	39	33.4	3	1178	371.5	1568
1973	595	2.3	170	42.3	481	53.3	0.2	141.2	20.1	28	13.7	3.4	1298	597.3	1620
1974	480	1.8	190	48	368	130	1.2	117.0	7.5	20	28	5.3	1095	481.8	1460
1975	600	1.9	200	50	470	90	1.2	160	16.0	40	28	3.5	1329	601.9	1723
1976	325	1	251	40	395	201	3	93	11	41	58	1	1067	327	1518
1977	737	1	254	43	442	86	3	139	21	32	42	1	1434	738	1799

Table 1.9 Continued

Country / Year	Italy	France	Greece	Portugal	Spain	Turkey	Cyprus	Tunisia	Algeria	Morocco	Syria	Israel	Europe	EEC-9	World
1978	496	1	262	33	510	181	2	99	26	36	60	4	1312	1302	1770
1978	511	2	228	67	483	80	5	94	13	39	43	-	1300	1291	1620
1980	730	2	336	39	497	242	7	165	19	28	86	-	1613	1604	2223
1981	566	2	280	33	281	107	7	140	11	38	51	5	1171	1162	1579
1982	462	-	371	91	726	185	6	58	8	44	107	-	1658	1650	2123
1983	670	1	259	20	268	70	2	132	12	25	50	-	1226	1218	1564
1984	370	2	360	57	763	122	4	103	19	30	58	-	1557	1552	1935
1985	690	1	310	42	429	98	3	113	16	31	38	-	1482	1472	1831
1986	430	1	267	46	534	170	4	140	15	35	70	-	1285	1278	1770
1987	708	2	273	42	782	99	1	106	10	45	36	-	1815	1807	2156
1988	468	2	290	22	387	165	2	71	8	35	86	-	1176	1169	1601

Source: F.A.O, Production Yearbook various issues (1963, 1967, 1970, 1975, 1977, 1981, 1985, 1988)

Table 1.10: World Production of Edible-Oils (Quantities in 1,000 Tonnes)

Oils	1982/83	1983/84	1984/85	1985/86
Olive	2160	1444	1580	1480
Soya	13616	13160	13330	13640
Palm	6006	5585	7040	8290
Sunflower	5809	5699	6080	6380
Rapeseed	5365	5104	5630	6250
Cotton	3346	3364	3870	3430
Groundnut	3173	3324	3100	3150
Sufflower	2669	2483	2690	3330
Palm-kernel	731	769	950	1130
Linseed	689	697	690	660
Marine	1300	1196	1280	1330

Source: "U.S. Department of Agriculture. Foreign Agricultural Service oilseeds and products (FOP 6-86)" : in A. Kiritsakis, The Olive Oil, (Thessaloniki, 1988),

Table 1.11: Area and Number of Olive Trees for Olive-Oil Production in Greece (in Stremma[1])

Agriculture Administration	Area under Olives	Number of trees in Olive Groves	Density trees/ strema	Number of scattered trees	Area under scattered trees	Total Area	Total number of olive trees
East Macedonia and Thrace	86,468	1,257,360	14	32,900	2,294	88,762	1,290,260
West & Central Macedonia	9,439	208,319	22	19,010	838	10,277	227,329
Epirus	408,020	5,720,208	14	702,855	52,127	460,147	6,423,063
Thessalia	28,300	477,150	17	121,190	6,991	35,291	598,340
Peloponnesos and West Sterea	2,025,380	32,239,254	16	8,413,626	543,249	2568,629	40,652,880
Attica and Islands	1,251,470	22,132,712	18	4,856,704	322,042	1573,512	26,989,416
Crete	1,520,300	23,451,184	15	3,331,987	209,056	1729,356	26,783,171
Total	5,329,377	85,486,187	16	17478,272	1136,597	6465,974	102,964,459

1. Notes: 1 Strema = 0.1 hectares

Source: Ministry of Agriculture and A.B.G (1985 figures)

Table 1.12 **Varieties of Olive Trees Cultivated in Greece**

Variety	Average Content in Olive-Oil, (%)	Regions of Cultivation
Coroneiki	22	Peloponnesos, Crete, W.Sterea, Ionion
Mastoidis	25	Crete, Lakonia
Valanolia	26	Chios, Lesbos
Adramitini	23	Lesbos, Andros
Lianolia	19.5	Ionian Islands, West Epirus
Thrubolia	23	Crete, Aegean Islands, Attica, Eboea
Megaritiki	19	East Sterea, North-Peloponnesos
Aguromanako	23	Argolida, Korinth, Spetses, Arkadia
Cothreiki	25	Fthiotis, Fokida, Ermioni, Poros

Source: A.B.G, Department of Vegetable Production, 1988

Table 1.13(a): Olive-Oil Production by Country, 1968-1981 (in 1,000 Tonnes): FAO Data

YEAR	GREECE	ITALY	FRANCE	SPAIN	PORTUGAL	EEC-9	EEC-10	EEC-12	WORLD
1968	228	429	1.6	492	53.2	430.6	658.6	1203.8	1585.3
1969	233	520.7	3.8	393	72.5	524.5	699.5	1165	1376.9
1970	181	463.7	0.5	480	67.3	464.2	672.2	1219.5	1604.6
1971	194	670	3.4	330	42.0	673.4	891.4	1263.4	1662.8
1972	222	370	1.1	491	54.0	371.1	660.1	1205.1	1611.4
1973	260	595	2.3	481	42.3	597.3	832.3	1355.6	1688.6
1974	222	475	2	364	53	477	695	1112	1543
1975	294	695	2	509	54	697	927	1490	1928
1976	256	440	2	437	45	442	701	1183	1624
1977	259	739	2	386	33	741	1050	1469	1845
1978	268	454	2	548	47	456	719	1314	1796
1979	233	511	2	483	67	513	741	1291	1620
1980	368	730	2	497	39	732	1068	1604	2223
1981	277	566	2	281	33	568	848	1162	1579

Source: F.A.O, Production Yearbooks, various issues.

Table 1.13(b): Olive-Oil Production by Country, 1968-1981 (in 1000 tonnes): I.O.O.C Data

YEAR	GREECE	ITALY	FRANCE	SPAIN	PORTUGAL	EEC-9	EEC-10	EEC-12	WORLD
1968	150	384.6	2	480	52.9	386.6	536.6	1069.5	1390
1969	140	473.4	3.5	369	72	476.9	616.9	1057.9	1268.4
1970	170	419.9	0.5	479.2	66.9	420.4	590.4	1136.5	1424.1
1971	160	618.1	3	340.3	41.7	621.1	781.1	1163.1	1551.0
1972	190	339.6	1.1	439.7	53.5	340.7	530.7	1023.9	1400.3
1973	170	450	2.5	446.7	42	452.5	622.5	1111.2	1405.5
1974	190	432.7	1.6	308.1	47.8	434.3	624.3	980.2	1393.4
1975	220	430	1.5	471.6	49.1	431.5	651.5	1172.2	1588.5
1976	200	280	2	422.5	35.5	282	482	940	1345.4
1977	220	500	2	361.4	29.8	502	722	1132.2	1397.8
1978	235	350	1.7	499.9	39.9	351.7	586.7	1127.4	1510
1979	203	450	1.5	432.8	56.9	451.5	645.5	1144.2	1410.1
1980	330	500	2	446	32	502	832	1310.0	1767.9
1981	230	606.5	1.4	297.3	22.9	607.9	837.9	1158.1	1419.4

Source: I.O.O.C, Olivae, Various Issues

Table 1.14: Edible Olive Production in Greece, 1960-1988
(Quantities in tonnes)

Years	Quantity	Years	Quantity
1960	25,000	1975	76,000
1961	75,000	1976	55,000
1962	15,000	1977	65,000
1963	45,000	1978	86,000
1964	25,000	1979	35,000
1965	35,000	1980	80,000
1966	45,000	1981	76,000
1967	40,000	1982	97,000
1968	38,000	1983	70,000
1969	40,000	1984	95,000
1970	40,000	1985	80,000
1971	70,000	1986	70,000
1972	50,000	1987	85,000
1973	56,000	1988	100,000
1974	64,000		

Source: A.B.G, Department of Vegetable Production, 1988

CHAPTER TWO

OLIVE CULTIVATION AND CHANGES IN THE AGRARIAN STRUCTURE

Introduction

This chapter has two inter-connected objectives. The first is to examine the specific form of organisation and structure of olive production in contemporary Greece. The second is to identify and discuss those factors which have played an important part in creating this state of affairs within the rural setting. It is argued that the organisation of production in the rural sector in general and olive growing in particular has been shaped decisively by a number of socio-economic and political developments. These have been traced back to the 1827 War of Independence against the Turks, and revolve around the role of the State.

Section One focuses on the Land Reforms which established the pattern of small scale size holding in agriculture. It is argued that despite the low level of the forces of production and the lack of State support towards the olive growers, the post-independence period witnessed a spectacular increase in the number of newly planted trees and a significant rise in olive-oil production. The reasons for this expansion are associated with the break up of the big landowners' property, the distribution of National Lands by the State, and also by the further commercialisation of agriculture. Unfortunately no continuous data for olive-oil production exists covering the long

formative period 1827-1914. There are only sporadic reports which, at times, are contradictory. Nevertheless, a generally rising trend can be observed during that period.

Section Two concentrates on the role played by the merchants in the olive growing regions. It is argued that merchant capital became a constraint upon the further expansion of the sector through the system of debt bondage with respect to the cultivators. Furthermore, the development of the olive cooperative movement - which reflected the struggle of the growers for greater control over their own production, received little or no support from the State at that juncture. In such conditions, the small scale organisation of production became the means by which the olive sector was articulated with the needs of the rising urban population. Apparently, the majority of cultivators were only able to retain earnings just sufficient to reproduce their labour supply and their means of production. One of the main underlying conditions which produced such a state of affairs was the action undertaken by the State.

Section Three examines the role of the State during the inter-war period. In the first part, it is shown that until the early 1950's the main policy of the State towards olive growing was associated with how to extract part of the cultivators' income by heavily taxing the marketed produce. This action posed a further constraint upon the expansion of olive-oil production since the small cultivators were left with little surplus to reinvest in improving their working conditions and methods of production. In the second part, it is argued that the

post Second World War period witnessed a change of direction in that the State came to provide a wide range of support policies to the olive sector. The reasons for this change are connected with the rising demand coming from the urban population, and the rural exodus of younger members of the labour force in the 1960's. Many people migrated as a result of rather poor levels of agricultural income on the one hand, and rising opportunities elsewhere on the other. As a consequence some improvements occurred and olive production per hectare began to rise even in the context of the small scale organisation of production. In the third part of this Section, it is shown that under the E.E.C regime an entirely new dimension has been added to agricultural policy. The E.E.C price support mechanism is discussed and its effect upon the olive growers' incomes is traced.

Section Four focuses on changes in the olive production structure since the 1960's. It is argued that the small size of agricultural landholding, coupled with the process of plot fragmentation, has constituted a constraint upon the development of the sector. The E.E.C regime has induced some restructuring of olive growing in the direction of a more cost effective mode of organisation; but the relatively slow pace of change is due, amongst other factors, to the limitations inherent in the small scale organisational form which continues to characterise olive production.

2.1 Greek Olive Growing and the Evolving Agrarian Structure

2.1.1 Production Relations in Greek Villages, c.1827-1871

Before Greece was declared an independent State in 1830, all land was under the control of Turkish feudal landlords. They had no clear ownership rights over the land but, in exchange for military and administrative services to the empire, were entitled to part of the produce. The cultivators worked the land under a rather heavy tax burden - the duties amounted to some one-third to half of the output.(1) Their lives and that of their families was closely bound up with the often arbitrary fiscal demands of the Turkish officers, the Spahis. It seems that what little produce they were left with after the various exactions was just about sufficient to support a meagre existence.(2) This system of landholding prevailed in the whole country apart from the mountainous areas where free small land ownership was dominant. Quite often the only cultivation in such regions was the olive tree. For some four centuries olive cultivation was one of the few sources of income which sustained these rural dwellers and the only effective means by which they retained their freedom.

During the 1821-1829 uprising against the Turks it seems that a substantial number of olive groves were set on fire in many areas throughout the country.(3) After independence the cultivators had the huge task of replanting such lost tree capacity. Not only did they replace the trees but they also brought new land under olive

cultivation.(4) All this took place on the strong assumption that the newly created Greek State would distribute the land to the cultivators. The total cultivated land size in 1829 was 2,162,777.5 ha. Out of this 551,975.4 ha belonged to the Chiflik holders and 1,610,802 ha made up the National Lands.(5) This was land possessed by the State which then slowly but surely passed into the hands of the big landowners. The reason for this transfer was that contrary to its pledges the State, did not implement land distribution in favour of the landless cultivators who had fought for Greek independence. Instead the Donation Law of 1835 simply gave them the right to purchase small plots of land against annual payments spread over a thirty-six year period.(6) But in most cases small farmers could not meet these payments to the State plus other liabilities. The chief reason was that production had been severely limited as a result of the destructive war (of independence) and, further, the farmers did not receive State support during their first years as independent producers.(7) Moreover, as we have shown in Chapter One, in olive growing the newly planted trees need a seven year period before they start to produce and they usually reach full productive capacity only in the fourteenth or fifteenth year of their life. Therefore, many cultivators were forced to sell their plots and work for the Chiflik holders under sharecropping agreements.(8) No less than nine-tenths of all cultivators were landless. Frederick Teers estimated that in 1835 only 20,000 rural families out of the existing total of 120,000 were property owners. He then proposed a destributional schema for the National Lands and calculated that a donation of three hectares to each landless cultivator was possible.(9) It seems that the cultivator's

material existence was highly dependent upon the particular local landowner.

In such circumstances the rural economy continued to suffer a deep depression. For decades after independence production remained stagnant, and most of it was handled by merchant-usurers who came to dominate the cultivators through a system proximating to what we now call debt bondage.(10) Despite this state of affairs in rural Greece, olive-oil production showed some sign of improvement within the period under examination. In the international meeting on agricultural production in Paris in 1855, it was reported that the number of productive olive trees in Greece was around 3 million, and most of them were of a relatively young age.(11) However, in a report by the Minister on Economic Affairs in 1857, the total number of olive trees (i.e productive and unproductive) was registered as 7.4 million.(12) In 1864 olive-oil production was recorded at 7,434.8 tonnes and the land under olive cultivation at 37,000 hectares.(13) This production corresponds to about 5.7 million trees which suggests that 2.7 million trees were planted just before 1857 or in the period 1850-1857.(14)

Despite the generally poorly developed level of the forces of production, the domination of villages by merchant-usurers, and the lack of State support towards the olive growers, the post-independence period witnessed a spectacular increase in the number of newly planted olive trees and a continuous rise in olive-oil production. Restoration of the country's independence ultimately meant the creation of an

environment more conducive to the restoration of olive-oil production by the cultivators.

2.1.2 The 1871 Land Reform and its Consequences

Increasing agrarian pressure which the cultivators endured in the rural areas resulted in several revolts directed against the large landowners.(15) On each occasion the State and the Chiflik holders promised land reform and the former passed various law decrees through Parliament. But in the literature there is general agreement that little fundamental change was effected. The main reason seems to have been that the struggle by the cultivators was not sustained and had a rather unorganized character. Partly arising from this rural discontent and partly because of growing commercialisation of production and development of the domestic market, the first real concession was made. The government passed a law on 25th March 1871 which was actually implemented. By that law, 265,000 ha were distributed out of the National Lands and the property of closed-down monasteries; this was released for the sum of 590 dr per hectare in annual installments.(16) But most cultivators did not possess sufficient financial resources to pay off the debt to the State so the size of the plots they bought was rarely more than one hectare-while other even poorer cultivators were unable to purchase any land at all.(17) The 1871 distribution established the future pattern of small-scale land ownership. The majority of the cultivators who emerged from this reform were unable to produce for the market in any significant way. It seems that they could only produce sufficient

quantities of bread and olive-oil necessary to meet family consumption.(18)

After the reform production relations within the villages do not appear to have undergone much change. Nevertheless 1871 can be regarded as being an important landmark for the penetration of capitalist relations of production in the rural sector. In Peloponnesos, where the reform was concentrated, the first signs of commercialised production started to appear from that time. The main products of the region were olives and raisins. Slowly, a process of social differentiation in the village communities began to take place.(19)

During the decade 1871-1880 olive production tripled throughout the country and the olive cultivated land expanded to approximately 100,000 ha. The reason behind this expansion was that once they had produced enough to satisfy their own consumption and that of their families, the new small landowners tried increasingly to meet market demand for olive-oil. This largely came from the growing urban centres of the country and abroad. In 1914, 20,700.4 tonnes were exported, valued at 20,215.272 dr (at 1914 prices).(20) At this time the techniques used in olive-oil production were still traditional. More specifically, horse power was used for olive crushing and very few oil-mills were mechanised in the rural sector. Increasing mechanisation only began to occur in the second decade of the twentieth century.(21)

In 1917, the newly established Ministry of Agriculture sent several trained agronomists out to rural areas in an effort to educate

the cultivators and the oil-millers about improving the quality of their produce. But, as might be expected, the process of change was slow and sometimes painful.(22) By 1920, 20,753.7 tonnes of edible olives were produced, 142,500 tonnes of olive-oil and 302,146.6 tonnes of olive residue.(23)

Despite the limited nature of the 1871 land reform commercialised production developed and olive-oil production expanded at quite a fast rate. By the early 1920's other processing units - apart from oil-mills - appeared in the rural sector such as olive residue plants, and certain tobacco and cotton seed processing units.(24) The social division of labour increased in the village setting, and the discontent of the landless cultivators became organised and persistent: they demanded a solution to the problem of greatly unequal landownership. This was especially manifest in Thessaly - which was acquired in 1881.(25) In Magnesia (province) an important edible olive producing centre, conditions appear to have been worse than elsewhere in the country. The reason was that the Chiflik owners had the legal right to expel the olive growers from the land which they cultivated under sharecropping agreements (until the early 1920's) - at the termination of such agreements.(26) This state of affairs prevailed in the countryside when Greece entered the First World War.

2.1.3 The 1922 Land Reform

Greece's entry into the First World War and the defeat in Asia Minor which followed had a number of destructive consequences for the

national economy and especially for the rural sector. For five years continuous army mobilization left the countryside bereft of young men. In the villages, elderly men and women and small children were left with inadequate means to cope.(27) Throughout the War production remained at a low level and several hundred farms were requisitioned by the State. In these conditions many cultivators resorted to borrowing in order to keep their households going. As a consequence they ended up with considerable debts to usurers and also to the banks.(28)

Upon their return to the villages after the First World War, the cultivators naturally found that many of their properties had been run down. They apparently needed to work very hard in order to restore their capacity. In addition to the veteran returnees no less than 1,200,000 refugees from Asia Minor appeared in 1922 as a consequence of the War and most of them settled in rural areas.(29) The farmers and the refugees united in demanding a redistribution of land. One of the ways in which they organised themselves was through cooperatives. The cooperative idea was thought of as a means by which cultivators could obtain the necessary facilities for the production process, and also a means through which they could collectively fight for a redistribution of land. Under this pressure, the 1922 land reform emerged.(30) By 1937 it was complete and it has left its mark upon the structure of landholding to this day. Some 82,917.2 ha owned by Chiflik holders were redistributed to around 130,000 farmers. In total, 181,292.6 hectares were given to 303,127 landless and small land holders.(31)

The majority of Greek economic historians consider the 1922 land redistribution as the effective end of feudalism. From this date labour services were commuted into cash rents throughout the country.(32) The compensation which the new cultivating farmers paid out to the landlords extended over a period of thirty years and was made in annual instalments. It was only with the hyperinflation of 1945 that the cultivators finally managed to clear off their debts once and for all.(33)

Statistics from the Ministry of Agriculture show that the value of olive production in 1929 represented 14.5% of total agricultural production - thus coming in third place after cereals with 32.4%, and crops like tobacco and cotton seeds with 22%. In the 1929 Census the size of the cultivated olive land was put at 150,740 ha representing 1.2% of the total land size (13,019,940 ha) and 2.5% of the productive land (6,002,489 ha).(34) If we take into account the total amount of cultivated land at that time, some 1,721,854 ha, olive cultivation occupied second place amongst all other crops with 8.8%. Cereal cultivation was first with 60.8% and the third place was taken by vineyards with 8%, and tobacco followed with 5.9%.(35) Furthermore, the 1929 Agricultural Census informs us that apart from the olive trees cultivated in the aforementioned area there was also a large number of isolated and scattered olive trees estimated at 11,125,143. Taking the average density of olive trees to be 120 per hectare, it follows that 11,125,143 isolated olive trees occupied 92,700 hectares in 1929.(36) Therefore, the total land size covered by olive trees was

about 243,500 ha. Based on the same average density I estimate the total number of trees to be approximately 29,000,000.

In 1937, when the land reform was completed, the value of olive production had increased to 18.6% of the total agricultural production.(37) Olive cultivation therefore showed a greater expansion compared to other crops. The reasons for this expansion were that first, domestic consumption increased from 60-65,000 tonnes in 1920's to 70,000 tonnes in 1937 - mainly due to the population growth.(38) Secondly, the annual rate of export growth between 1920-1937 was 3.6%. Table 2.1 presents olive-oil production and exports (as well as edible olive production and exports) between 1920-1937. I estimate that the annual rate of growth for olive-oil production was 4.7%, while for edible olive production the figure was 5.4%. Furthermore, to see where and by how much the land reform 1922-1937 affected olive-oil production in the country, the percentage contribution of olive-oil production over the different administrative areas is presented in Table 2.2, before and after the land reform.

Table 2.2 Percentage Contribution of Olive-Oil Production by Administrative Area: 1920, 1937

Areas	1920	1937	% change 1920-1937
Macedonia	1.13	1.2	+ 0.07
Epirus	1.09	19.8	+18.71
Aegean Islands	28.27	62.9	+34.63
Crete	32.65	54.4	+21.75
Thessalia	1.87	13.4	+11.53
Ionian Islands	3.79	52.9	+49.11
Keclades	1.78	25.6	+23.82
Sterea-Eboea	8.14	20.3	+12.16
Peloponnesos	21.23	19.7	- 1.53
Thrace	-	0.1	+ 0.10
Total	100	100	

Source: N.S.S.G Agricultural Production Yearbooks, 1920,1937

We can see that in Peloponnesos, the only area where small land ownership was established after the 1871 reform, the percentage contribution of olive-oil production was actually reduced. In all other areas though, where the 1922 land reform established small landholding, we observe a spectacular increase in the contribution to total olive-oil production. The only exception is Macedonia which, to this day, remains an unimportant olive producing region. However, this impressive increase in olive-oil production after the reform does not necessarily imply that the small farmers were technically superior to the large estates. Rather it was due to the abolition of certain "peculiarities" inherent in the pre-existing system of cultivation. More specifically, the cultivators working on Chiflik properties had little incentive to improve land or labour productivity levels since

they were required to give a third to half of their produce to the landlords. Also, the Chiflik holders had rented out some of their cultivable land as pasture.(39) Once these factors were removed as a result of the reform, the olive growing sector was in a better position to move forward.

In the Agricultural Census of 1939 (and so two years after the completion of the land reform) the total size of cultivated land stood at 3,333,161.6 ha. Of this 304,979 ha were covered by olive groves (i.e 9.1% of the total). The total number of olive trees was now estimated at 49,487,125.(40) However, the Ministry of Agriculture's Department of Planning estimated that the total number of olive trees in 1939 was approximately 64 million, and covered an area of 500,000 ha. Of these 10 million produced only edible olives.(41) Reports from other sources on olive production tended to agree with the latter figures.(42) Table 2.3 shows the total number of olive trees in production and estimates of the number of wild olive trees in 1939 throughout Greece. The figures were collected by village and by county in a survey undertaken by the Ministry of Agriculture which lasted over a number of years. The survey was conducted with the cooperation of the local authorities in each area, with certain public services and with the help of trained agronomists so that it should be reliable. We observe that about 85% of the total number of olive trees could be found in Peloponnesos, Crete, Sterea, the Aegean and Ionian Islands. The main olive producing centres of Peloponnesos were the provinces of Messenia, Lakonia and Korinthos. In Thessaly, they were the province of Magnesia, and in Macedonia the provinces of Halkidiki and Thasos.

In the Aegean Islands, Lesbos was the most important olive producing centre and in the Ionian Islands, Kerkera (Corfu). Moreover, it appears from Table. 2.3 that in 1939 about 15% of the total number of olive trees were wild trees growing in isolated and remote areas without any proper system of cultivation care for the most part. As a result, they yielded only a fraction of their potential productive capacity.

As far as the social structure is concerned Table 2.4 shows that in 1939 339,618 rural families were engaged in olive cultivation. This suggests that approximately one and a half million people were engaged in olive growing. This activity therefore provided a source of income for 72% of the families in rural Greece. If we take into account the area covered by olive trees, it turns out that the structure of small land ownership meant an "average" olive farm size of 1.5 ha per family. Apart from this small size we must also note that many of these plots were dispersed and fragmented.(43) Wage labour existed on a seasonal basis (two or three months a year) usually from November to January. Although there are few official statistics on the numbers employed, olive growing is widely considered to have been a family-engaging activity.(44) The average number of olive trees owned by each cultivator can therefore be estimated at approximately 150-250. The highest average ranged from 200 (in Crete, Lesbos, Samos, Andros and Tenos in the Aegean Islands, Halkidiki in Macedonia and Preveza in Epirus) to 1,700 (in Crete, and Kerkera in the Ionian Islands). The lowest number of trees could be found on the Keklades Islands, especially in Seros (5-20 trees at most) and Kea (15-60 trees at most).

Lesbos shows the highest average olive growing landholding, approaching 4,000 trees. In Lesbos one could come across a few olive plots with 8,000 or 12,000 trees owned by a single farmer. On the other hand, in Kerkera and Ahaia one could exceptionally come across 13,000 and even 15,000 olive trees belonging to a single landlord. On a smaller scale, the largest number of olive trees owned by a single landlord which could be found in the province of Fthiotis in central Greece was 9,000. In Hania (Crete) and Evros (Thrace) 7,000 trees and in the Islands of Thasos and Paxi, 5,000 trees. In the rest of the country the number ranged from 500 in the province of Arta (Epirus) to 4,000 in Eboea. In Sterea the number of olive trees owned by one cultivator ranged from 20-3,000.(45) It therefore appears that although small landholding became dominant in the olive growing sector, some Chiflik holdings scattered throughout the country remained even after the 1922-1937 land reform. This suggests that although the general aims of the State to increase production and accommodate the thousands of landless cultivators through the land reform were accomplished, the programme did not include an equitable distribution regime. So, given the further commercialisation of agriculture which took place over time, there was an intensification of an already well established trend of social differentiation in the olive growing villages, and this led to further inequalities being generated. Various influences were at work including differential income and price elasticities of demand for the product during the process of development and also differential access to credit and other services.(46) Despite these shortcomings the break-up of the Chiflik property structure as a result of the reform, gave a major albeit indirect-boost to the development of rural

capitalism. This occurred principally because agriculture operated as a complement to the urban sector. More specifically, it ensured, in the time honoured way, the supply of foodstuffs so contributing to the cheaper reproduction of the urban based labour force. Furthermore, the agricultural sector operated as a labour reservoir, and this served to reduce pressure on urban wage rates.

2.2 Merchant Capital and the Cooperative Movement

After the 1922 land reform and as the olive-oil trade increased, two conflicting groups emerged from the process of social differentiation in Greek villages: these were the olive producers who strove to sustain a certain standard of consumption, and the oil-millers who came from the ranks of the better-off cultivators.(47) The majority of farmers controlled their own means of production but were often compelled to borrow working capital at times of crop failure.(48) The lenders were usually olive-oil wholesalers, who themselves originated from the rural sector. The wholesalers' strategy was to store olive-oil with a view to creating excess demand which would force prices upward. They were then in a stronger position to earn "super-normal" profits. As late as 1950 a number of wholesalers managed to buy up olive-oil from the producers at 5-8 dr per kg which they then put into storage. Only when the price increased to 20-22 dr per kgr did they release it onto the market.(49) By and large it seems that profits made by wholesalers were reinvested in trade or the tertiary sector - and mainly away from olive cultivation.(50) After harvest olive growers would take the crop to the private oil-mills. There, if

the oil-miller had a monopoly in the village - which seems often to have been the case-commission rights would be levied. These amounted to around 12% of the produce.(51) Furthermore, it was often alleged that in the weighing of the produce oil-millers were grossly fraudulent. Literally following the oil-miller, creditors would wait for the farmer "around the corner" to receive the produce in return for past credit provision and debt repayment.(52) The credit relation was a way of appropriating surplus and of transferring control over the means of production i.e., if the farmers were unable to repay their debts the wholesalers took control of their property.(53)

With the Law Decree 602/1914 by which the formation of cooperatives in the olive sector was permitted, the olive producers started to look for a way out of this situation. The cultivators organised themselves into cooperatives in order to obtain easier credit terms from the State and also, tools and fertilizers required during the olive production process. The State seems to have supported the cooperative movement and the National Bank of Greece as the leader of banking capital, expressed interest in investing in the rural sector.(54) For this reason it encouraged the establishment of credit cooperatives. The composition of agricultural cooperatives in 1931 according to their main function is presented in Table 2.5.

Table 2.5: The Composition of Agricultural Cooperatives in 1931

Categories	Existing Number	%	Actually in Operation	%
Credit	4,482	76.12	2,800	83.6
Supplying Inputs	178	3.02	36	1.1
Selling Outputs	424	7.20	245	7.4
Production	342	5.81	158	4.7
Other	462	7.85	108	3.2
Total	5,888	100	3,347	100

Source: P S Avdelidis, The Agricultural Cooperative Movement in Greece, (Athens, 1986) p.61

We observe that credit cooperatives were the dominant form of agricultural cooperatives - a characteristic of many L.D.C's today. Other categories cover only a small fraction of the total. Moreover, production cooperatives which are potentially useful in serving the needs of such small-scale producers, accounted for only 4.7% of the cooperatives operating in that year. Out of the 342 existing production cooperatives 75 were olive cooperatives, 137 were wine cooperatives, 57 were dairy product cooperatives and the rest were engaged in fruit and rice activities.

The fact that credit cooperatives were the majority is explained by the dependence on foreign capital and the specific form which domestic capital took. The National Bank was responsible for credit policies for the rural sector until 1930, and was mainly interested in lending for short periods of time (where profits were highest).(55) This is why it encouraged the establishment of credit cooperatives where the common responsibility of all members guaranteed the repayment of the loan.(56) Basically the same policy was carried through after 1930 from the A.B.G - which took over the function of financing the rural sector from the National Bank.(57) So instead of becoming a partner with the farmers as was hoped, the Bank became just another source of creditor for the rural producers. Even though cooperatives and their members increased in number, the majority of farmers remained outside. In 1933 only 28% of rural households were members of operating cooperatives and by 1939 this had increased marginally to around 30%.(58)

Looking briefly at the economic activities of the cooperatives from 1923 to 1939 we may observe that even though most of them were mainly credit bodies, they also expanded their activities to cover supply, production and selling. This happened after 1923 as the membership started to increase. More specifically, in 1924 the "United Cooperatives of Corfu" began selling the olive-oil produced by its membership. In Corfu and Lakonia (Peloponnesos) nine mechanised cooperative oil-mills operated.(59) In the 1930's the "Union of Cooperatives of Lesbos", which owned a number of oil-mills, commenced selling large quantities of olive-oil to the members of the Drama

Cooperative (Macedonia). This inter-cooperative exchange helped Lesbos defend itself against the embargo which the oil-traders tried to impose on its oil-mills. The reason for the embargo was that the Lesbos growers asked a higher selling price for the olive-oil produced than was then on offer.(60)

In 1929 there were 47 cooperative oil-mills while by 1939 the number had increased to 132. Some cooperatives expanded their activities by the purchase of land. The cooperative "Nea Agialos" in Thessaly, for instance, bought a farm of 900 ha in 1928 and transformed it into a new olive grove.(61) However, the activities of the agricultural cooperatives during the inter-War period were restricted, and the role of the movement in the rural economy in general and the olive sector in particular was still very modest. The reasons for this are not hard to find. The movement faced strong opposition from a number of different sources. First merchant capital - which was directly affected of course - resented the expansion of cooperative economic activity. Secondly, the National Bank appeared to have simply used the cooperatives in order to facilitate its own credit lines, and therefore did not allow them wider action. After 1930 the policy of the Agricultural Bank was similar and the State itself created a number of quite serious restrictions upon the cooperatives.(62) Later, after 1936, the movement was dealt a severe blow as a result of the arrival of the dictatorship of G. Metaxas (1936-1940). The only input which the State did make was via the creation of rural agricultural centres which employed trained agronomists specialised in combating olive tree disease.(63) The reason for this action by the State was that, Dacus,

one of the most destructive olive tree diseases, was deemed responsible for damaging a large proportion of olive production (up to as much as 50%) during the inter-War and in the early post-War periods.(64) In general the State was not at that time prepared to actively defend the interests of the olive growers vis-a-vis the creditors and wholesalers: the political economy of Greece was still dominated by these powerful lobbies.

It was not until 1949 that substantial moves were made towards creating a stronger cooperative organisation among the olive producers. Representatives of olive cooperative unions from all over Greece met and discussed the difficulties which olive growers faced. A decision was taken to establish an over-arching cooperative aimed at serving olive growers in many important respects.(65) The Central Union of Olive Growers was thus established in 1949 and called Eleourgiki. At the start, Eleourgiki was responsible fighting olive disease, and it managed to produce some excellent results. Following this success it began competing with creditors and wholesalers in the olive growing centres for purchasing olive-oil output. The wholesalers fought back in any way which they could such as by offering price concessions to the olive growers, and by threatening to and then establishing certain counter organisations.(66) In fact between the early 1950's and the late 1970's, there has been a continuous struggle for hegemony; and although the power of the wholesalers was seriously undermined by cooperative action, nonetheless they managed to retain control of key aspects of the industry in most of the important olive producing centres.(67) In 1952-53 the State requested Eleourgiki to gather

40,000 tonnes of olive-oil on its behalf. Later on, its activities were further expanded by the acquisition of three refineries in Crete, Lesbos and Corfu. In the early 1980's a large refinery and packing unit was established by Eleourgiki in Elefsina, on the outskirts of Athens. Apart from expanding production the purpose of this action was to ease the flow of exports.(68) We may conclude that up until the 1970's the struggle for control of the olive industry between the olive producers and merchant capital has been protracted and fierce. The crucial factor was the policy of the State which I will now go on to consider.

2.3 The Role of the State

2.3.1 Inter-War Policy

Once it had completed the distribution of the National Lands the State left the small cultivators very much to themselves. It did little to assist them in terms of educational access, the provision of credit, or provide help with the distribution of fertilizers; certainly it did little to help improve the methods of work and the mode of organisation.(69) Indeed, it continued to implement taxation policy which probably slowed down the process of economic development for the olive sector in general and the small growers in particular. More specifically, and going back in time, the newly created Greek State left the Turkish tax system basically intact.(70) The State continued to receive one-tenth of the output in kind (i.e. in olives) from the cultivators. Later on, the tax was received in olive-oil. Under this

fiscal regime even the expenditure of cultivator, in extracting olive-oil from the olives was taxed.(71) For this reason the tax rate was reduced from 10% to 7% of total output and this arrangement lasted until the early 1930's.(72) This tax system, dekati, was gradually replaced by a Land Tax. This was first introduced in the Ionian Islands, then in Sterea, Crete and the Keklades. The Land tax was paid at the Custom Houses when olive-oil was exported or traded within the country. It was set by decisions in State Council and amounted to 12% of the producer price-which was readjusted every three months.(73) It appears that under this regime self-consumption and olive-oil sold within the olive producing region were exempt.

Both these systems seem to have been weighed against olive cultivators and appear to have had a serious disincentive effect upon the improvement of the olive production process. This was because it may have siphoned off income which might otherwise have been reinvested in the improvement and expansion of olive-oil production. Moreover, under dekati not only gross income was taxed but even the smallest amount produced for the cultivator's self-consumption. Under the Land Tax, on the other hand, gross output was taxed heavily. Although it was implemented only on agricultural production there were great inequalities in the tax burden within the sector. In particular the Land Tax amounted to around 23% of total gross income in olive production while according to the Law it should not have exceeded 3% of the gross income of agricultural crops as a whole.(74) Table 2.6 presents the composition of tax duties upon a kgr of olive-oil in 1930 in Lesbos when oil was traded within Greece.

Table 2.6: Composition of Tax Duties on 1 kgr of Olive-Oil when it was traded within Greece, (Lesbos, 1930)

Duties	Amounts[1] (in dr)
Land Tax on the Producer Price, 12dr x 12%	1.440
Compulsory Loans, 40% of Land Tax	0.576
Local Council Duty, 20% of Land Tax	0.288
Agricultural Bank, 1% of 12dr	0.120
Road Construction Works, 3% of Land Tax	0.043
Agricultural Chamber of Commerce 1% of Land Tax	0.014
Harbour Works, 17% of Land Tax	0.240
Refugee Duty, 7% of Land Tax	0.100
Harbour Machinery Duty, 0.3% of Land Tax	0.005
Total	2.736 dr

Notes: 1 Current 1930 prices

Source: Derived from: The Greek Agricultural Company, Agricultural Bulletin, No. 1930, Vol.23, Part 228.

In 1930 on the prevailing producer price of olive-oil 12 dr per kgr, the Land Tax rate was as high as 22.8% of it.(75) However, the Land Tax for olive-oil destined for export was 2.886 in the same year (the compulsory loan was charged at 48% and there was also an additional charge of 10% of Land Tax to support orphanages).(76) These tax amounts only refer to Lesbos. In other areas additional (but admittedly quite small) charges could be levied which would inflate the final tax bill due from the producers. Under this tax regime Lihnos estimated (for 1930) the average production cost and revenue from one stremma of olive cultivation in Lesbos. Table 2.7 presents a break-down of the composition of expenditure by producers per stremma. The total cost to the cultivator was calculated at 3,410 dr in current 1930

prices. Even if the expenditure upon fertilizers is not taken into account(77), (which amounted to 580 dr every second year), we may deduce the following. One stremma of olive trees with an average production over two years of 500 kgr of olives, (which yielded approximately 108 kgr of olive-oil), cost the producer 3,410 dr. At the prevailing selling price of 12 dr/kgr, the revenue per stremma was only 1,296 dr. As Lihnos puts it "the tragic picture of an olive grower appears who produces at 31.6 dr/kgr and sells at 12 dr/kgr".(78) If these estimates are to be taken at face value then clearly, in this particular place and at that particular time there were few positive market incentives for the growers.

The State usually allowed producer prices to be determined by the market and in effect, these fluctuated in accordance with the rhythm of olive-oil supply. It would only intervene (i.e. set a floor price) in extreme circumstances in order to try to protect producer incomes.(79) It was widely acknowledged that the wholesalers bought olive-oil from the producers at the lowest possible price which, under the prevailing tax system, was considerably facilitated. This was because the tax was imposed only on the marketed product. This tax was extended to the whole of Greece from 1 September, 1936 with the passage of Law Decree 29/1936 (supplemented by Law 209/1936). The tax rate was set at 12.6% of the producer price which, in that year ranged between 24-30 dr/kgr.(80)

It appears that the only way olive growers could continue to produce within such a context of unfavourable conditions was through putting in many hours of hard labour contributed by family members themselves. The fact that the majority remained owners does not of course say very much in the way of mitigation.

2.3.2 Post-War Policy

In the Post-War period the State came to recognise - belatedly- the fact that income disparity between agriculture and the rest of the economy was widening. Income per person actively engaged in agriculture was $471 in 1961 and $832 in 1971. This compared with $1,262 and $2,760, in all other sectors taken together in the same years.(81) As a result, during the 1960's there was a rural exodus of younger members of the labour force to the urban centres of the country and abroad. The State recognised the need to increase olive-oil production in order to meet the rising urban population's demand since, during these decades, olive-oil accounted for 80% of the total consumption(82) of oils and fats.

Post-War policy had two principal objectives. One was to increase productivity (production/stremma) mainly through encouraging a greater use of purchased inputs which the State offered to subsidise- including fertilizers, chemicals for insect and disease control, machinery and equipment for cultivation and harvesting, new plantings and the offer of various types of loans. The other objective was to try and protect producer incomes by interventionist policies including

fixing minimum prices, and through stock maintenance. The purpose was to encourage olive growers continue to produce in rural areas. It appears that the State provided a wide range of support services for the olive producers and to agriculture in general since most of the aforementioned measures covered the whole primary sector.

The most useful production subsidies directed towards transforming the organisation of olive production were those for new olive planting, and for the purchase of suitable machinery for olive cultivation.(83) Between 1960 to 1973 a subsidy was paid to the farmers for new planting of olive trees under the so called "dense and bushy" system.(84) This covered the purchase price of the olive trees and the cost of deep ploughing prior to actual planting. It was usually paid out as a fixed amount per hectare. A similar subsidy was granted to the olive growers up until 1973 for renewing old groves, either by replacing the older trees altogether, or by cutting off their trunks very close to the ground.(85) This subsidy resulted in hundreds of hectares being planted under the "dense and bushy" system - especially in Crete. In these areas production per stremma was nearly doubled. In 1960 a subsidy for the purchase of machinery and other means of production used in olive cultivation was introduced. During the first years of its operation and for some items of machinery, the subsidy amounted to around 70% of the purchase price; later on this was reduced to between 25 and 50% of the equipment's purchase value. By 1974, when this subsidy was abolished, many growers had incorporated some sort of mechanical equipment into the different stages of olive production.(86) This equipment included plastic combs for harvesting, mechanical chain

saws, plastic nets and other less widely diffused types of machinery. All the subsidies were paid directly to the farmers by the regional offices of the Ministry of Agriculture once the formal claim forms and the relevant invoices had been submitted.(87)

Another form of production subsidy was that given for the purchase of fertilizer. Although this measure took effect from 1953 in the olive sector, it was not until 1956 that the subsidy was generalised to include all agricultural crops.(88) Table 2.8 presents fertilizer subsides in Greece between 1956-1975. We observe that the price paid by the producers remained roughly constant while the percentage contribution of the State subsidy increased steadily. Fertilizer subsidy was reduced after Greece's accession into the EEC and eventually stopped in the mid-1980s. The quantity of chemical fertilizers used in agriculture has increased from 40.3 kgr per hectare in 1961, to as much as 165.7 kgr per hectare in 1982.(89) Another chemical subsidy of great importance to olive growing was that given for spraying olive trees against Dacus. Usually this operation has been carried out on a national scale and farmers were paid a small handsome contribution towards meeting the total cost. Table 2.9 shows the cost of spraying against Dacus and the relative contributions by farmers and the State.

Table 2.9: Cost of Olive Spraying in Greece (in 1,000 U.S Dollars)

Production Year	Total Cost	Farmers Share	Subsidy	Subsidy as a % of Total Cost
1973-1974	6,436.6	1,262.0	5,174.6	80
1974-1975	6,511.6	1,288.9	5,222.7	80
1975-1976	7,201.0	1,651.2	5,549.8	77
1976-1977	9,462.3	1,397.0	8,065.3	85

Source: **M. Xekalakis, "Implications for the Greek Olive-Oil Market of Adopting the C.A.P of the European Economic Community". Unpublished Ph.D Thesis, Reading, 1979.**

M. Xekalakis regards this subsidy as a transfer equivalent to a higher guaranteed price of some 32 U.S. dollars per tonne of olive-oil produced between 1973-1976.

Although these subsidies undoubtedly helped the producers between 1950-1974 they do not appear to have been radical enough to rationalise production and place it firmly on capitalist lines. They were not designed to take account of plot fragmentation or to induce the greater use of machinery through a thorough going system of extension, training and research. Rather the subsidies probably set out to increase production and safeguard producers' income at a level sufficient to enable small cultivators to reproduce themselves. When signs of surplus production in the 1970's appeared though in the domestic and the European markets the State abolished subsidies on new planting and

mechanical equipment, so its most ambitious policies were ended in the mid-1970's.(90) In 1977 the average income of a person actively engaged in agriculture was 1,487 U.S dollars while in other sectors it was double at 2,865 U.S. dollars.(91) It appears that the disparity between incomes has narrowed down when compared with 1961 and 1971 but this was largely due to the deregulation of market prices after the collapse of the Junta in 1974.

The provision of credit to agriculture was undertaken solely by the Agricultural Bank of Greece (A.B.G). Table 2.10 shows the provision of credit to agriculture (and, for comparison all other sectors of the economy) between 1948-1983. We may observe that in 1948 loans to agriculture made up 41% of total credit provision. By 1965 this percentage had been reduced to 25.6%, and in 1983 amounted to a mere 12.6% of total A.B.G credit provision. If one also looks at the type of credit provided it appears that short-term credit exceeded by far medium and long-term credit. This is because agricultural supplies - which mainly refer to fertilizers and chemicals marketed by the Bank, were provided to the farmers under the short-term scheme. "Short-term" is usually taken to be a 12 month period and the credit obtained is used for working capital. In olive growing working capital refers mainly to harvesting and pruning, but also includes expenditure on fertilizers and storage. On the other hand, medium term credit (up to 5 years) and long term credit (up to 20 years) are used for the purchase of capital equipment such as tractors, plastic nets and mechanical cultivators. It could also be used for land reclamation, renewal of old trees and small irrigation projects. From 1981 the

interest at which the farmers borrow from the A.B.G is, on average, 3 to 4 percentage points below that offered from the commercial banks.(92) So, we can deduce that provision of credit to agriculture over the thirty-year period ending in 1983 has declined dramatically in relation to other sectors. Furthermore, it mainly concerned working capital or short-term credit rather than overhead investment - a point which seems to reveal the inherent weakness of the small scale mode of organisation and has implications for the expansion potential along genuine modern capitalist lines.

The other arm of State policy in the Post-War period was directly related to the aim of preserving a certain minimum level of income for farmers and took the form of supporting producer prices. From 1962 until Greece's accession into the European Community the State fixed a minimum guaranteed price for olive-oil of between 0^{o} - 10^{o} acidity. The difference in price between the various levels of acidity - which determines the ultimate quality of the produce, ranged over 13% to 20% of the final price.(93) Even though this minimum price increased through the years it has never been significantly greater than the free market price as determined by the interaction of supply and demand.(94) It has therefore had little effect on producers.

Perhaps the most effective of the State's policies with respect to the olive sector has been its market stabilization programme. At the national level this programme has been carried out by Eleourgiki, while on a regional level the various Unions of Agricultural Cooperatives have been given the responsibility.(95) At the beginning of a

marketing period the Ministries of Agriculture and Commerce decided on the maximum amount of olive-oil which could be bought by the intervention agencies at the minimum guaranteed price. So, if there were surplus quantities of olive-oil (i.e quantities left unsold by the end of the stated marketing period) the State would buy; while if there was a shortage, and market prices exceeded certain defined levels, the State would sell from its accumulated intervention stocks. Olive-oil producers or the cooperatives could offer to the intervention agencies any quantity which they produced. Also private or cooperative oil-mills could sell to the State the amount of olive-oil which they had received as commission rights for crushing the olives - usually between 8-10% of the total output. The closing date of intervention buying was determined by the Ministries of Agriculture and Commerce. The cost of collecting and storing the olive-oil was born by the State's budget.(96) Table 2.11 shows the cost of collection and storage of olive-oil over the period 1957/58-1976/77. We may observe that this cost fluctuated between 1-8.5% of the value of the product. If we add to that the interest on the funds used to pay for the olive-oil, the total cost in any one year might well have exceeded 15% of the value of purchased olive-oil. The Ministry of Commerce determined the selling price of this olive-oil and the A.B.G took care of all the financial transactions involved in the purchase of the produce by the intervention agencies. The A.B.G received 1% of the total value of the olive-oil purchased by intervention as their service commission. According to the Ministry of Agriculture, an annual stock of about 30-35 thousand tonnes of olive-oil was necessary to cover variations in production caused by natural conditions. After 1981 the cost of

intervention storage of olive-oil has been born by the European Community's budget.

2.3.3 Policy under the E.E.C Regime

Greece's accession into the E.E.C obviously added a whole new supra-national dimension to agricultural policy. This is because since 1981 all the major policies and support systems for agriculture are decided by the Ministers of Agriculture of the member-States at their annual meetings in Brussels. All decisions are taken in the context of that part of the C.A.P (Common Agricultural Policy) which has been especially developed for the olive-oil sector.(97) So even though the Greek State takes part in the decision-making process, in the final analysis its role is to implement strategy and policies which have been decided on the basis of European-wide considerations such as the Community's perceived need for olive-oil - which has led to directives for a supply quota; and the idea that olive-oil should be a cheap input to the European food industry, which is dominated by multinational concerns. It has been claimed that in the context of the European Social Charter even if the sector were to be drastically contracted growers would be guaranteed jobs elsewhere or granted compensation.(98) My purpose here however is to consider how State policy has been re-shaped by virtue of being within the C.A.P framework.

The evolution of the C.A.P with respect to the olive sector may be divided into two periods. The first is between the establishment of

the Basic Regulation 136/66 in September 1966, and the Council Regulation 1562/1978 which amended the Basic Regulation and put forward a new common organisation. The second period is between 29 June, 1978 and the mid 1980's since the enlargement of the Community when the Greek, Spanish and Portuguese accessions created a new situation. During the first period 1966-1978, France and Italy were the only olive producing members of the Community so the C.A.P was strongly influenced by their individual policies. The Basic Regulation No. 136/1966 adopted three categories of policy measures: free trade within the Community, a set of common prices and a variable import levy to protect domestic production from non-EEC countries.(99) As long as the world market prices were low enough the EEC's C.A.P operated smoothly and the Market Target Price, was close to actual market prices. However, as Production Aid was a fixed subsidy related to the Market Target Price and not a variable deficiency payment, the world price boom of 1972-1974 caused serious problems. The actual market prices, in response to the impulsion of world market prices, rose significantly above the Market Target Price (see Table 2.12). As a consequence producers not only received the very high market prices but the fixed Production Aid as well. Furthermore, high retail prices of olive-oil, combined with the availability of much cheaper vegetable oils, caused a sharp decline in demand for olive-oil. After 1975/76 large quantities accumulated as intervention stocks as a result of the fall off in demand.(100) The 136/66 regime faced two other problems. Delays in the payment of Production Aid to the producers, and certain administrative difficulties (involving distribution and monitoring of the aid) which emerged in Italy. In addition, Greece applied for accession to the

E.E.C. These considerations ultimately led to the amendment of Regulation 136/1966.

The new system of common prices under Council Regulation 1562/1978 was designed with two main objectives in mind: first to stimulate the falling demand by introducing Consumption Aid, and secondly, to restrict the expanding supply. In the Greek case production aid would only be paid for olive-oil coming from trees planted before 1981. Table 2.13 presents the price mechanism under Regulation 1562/1978.

Table 2.13: The E.E.C Price Mechanism for the Olive-Oil Market, Marketing Year 1978/79. (ECU/tonne)

Production Target Price	= 2,315.6
less Production Aid	= 521.2
equals Producer Selling Price	= 1,794.4
(Intervention Price	= 1,706.3)
less Consumption Aid	= 334.2
equals Representative Market Price	= 1,460.2
(Threshold Price	= 1,444.0)
less Variable Import Levy	≈ 310-555
equals Work Market Price	≈ 905.2-1150

Source: **Situation of Agricultural Markets Report, 1979.**

This Regulation provided the following support prices and aid:

a) The Production Target Price - This is a price fixed "at a level which is fair to producers, account being taken of the need to keep Community production at the required level."(101)

b) The Intervention Price This is the price at which olive-oil is bought by the intervention agencies. It is equal to the production target price, less the production aid paid to the producers, plus an allowance which covers market fluctuations and the cost of transporting olive-oil from producing to consuming areas.

c) The Representative Market Price - is fixed at a level which will permit the "normal" marketing of olive-oil produced, account being taken of the prices for competing products and of their probable trend during the marketing year.

d) The Threshold Price is fixed at a level a little less than the Representative Market Price. So imported olive-oil is prevented from entering the market at prices competitive with the community's own olive-oil.

e) The Production Aid is fixed as a first stage adjustment when deriving the Producer Selling Price. This aid is paid for quantities of olive-oil and olive residue oil produced from olive trees planted before 31 October 1978 (in the case of Italy and France), and before 31 December 1980 (in the case of Greece). Production Aid is granted to olive growers belonging to producer groups in respect of the volume of their actual production. The unorganized growers receive the Production Aid as a flat rate with respect to the potential yield of the trees they cultivate.

f) The Producer Selling Price is equal to the Production Target Price reduced by the Production Aid. This price is considered as the determinant of long run olive oil supply.

g) The Consumption Aid is paid when the Production Target Price, less the Production Aid, exceeds the Representative Market Price (which is usually the case in fact). The aid is equal to the excess, and so aims at ensuring disposal of supplies on the Community market irrespective of the price paid to the producer and of the prices of competing products. The aid is paid to the packing units with respect to olive-oil when packaged in containers suitable for the retail trade and placed on the market in the Community.

h) A Variable Import Levy is imposed to make the difference between the fixed Threshold Price and the fluctuating World Market Price. In practice though, concessions are made to a number of Mediterranean countries where these levies are reduced (e.g. Morocco and Tunisia).

Table 2.14 shows olive-oil support prices between 1978/79-1983/84.

Table 2.14: Olive Oil Market Mechanism - Common Prices, 1979-1984
(in ECU/tonne)

	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Production Target Price	2,315.6	2,350.4	2,479.7	2,727.7	3,027.7	3,194.2
Production Aid	521.2	529.0	558.1	600.0	666.0	702.6
Producer Selling Price	1,794.4	1,821.4	1,921.6	2,127.7	2,361.7	2,491.6
Intervention Price	1,706.3	1,731.9	1,801,2	1,963.0	2,179.3	2,299.2
Consumption Aid	334.2	351.4	471.6	677.7	766.7	522.4
Representative Market Price	1,460.2	1,470.0	1,450.0	1,450.0	1,595.0	1,968.7

Source: Official Journal of the European Communities, No C134/48 Vol 28, 3.6.1985

From January to July of each marketing year the Community determines small monthly increases of the Representative Market Price, the Intervention Price and the Threshold Price. This scheme represents a form of compensation paid to the olive producer to cover storage cost and the interest on the funds that would have been received if the olive oil had been sold.(102) The application of Regulation 1562/1978 has faced a number of problems. Some of them I will be taking up in the next section where structural policy in the context of the C.A.P will be considered. Here I propose to examine the effect of the price support policy on the income of Greek olive growers.

The decisions taken in February 1988 - which were reached only after a long series of negotiations in the EC-Summit and Council mark the beginning of a new phase in the C.A.P.(103) For the first time definite budget ceilings for agricultural expenditure, and rules for automatic price reductions have been agreed upon for a medium term period. By this agreement the Council has limited its scope for action on price policy in the coming years. The decisions imply that the prices for non-quota commodities will have to be significantly reduced year-by-year in ECU terms. Table 2.15 shows the EEC price support system for olive-oil with regard to the Greek case.

Looking at the Intervention Price we can see that after 1984 there has been a reduction in ECU terms and this is continuous to 1988. In 1989/90 the Intervention Price as well as the Production Aid returned to their 1986/87 levels. From the last two lines of Table 2.15 it appears that between 1981/82 and 1986/87 the Green drachma was depreciated by as much as 89%. It continued to depreciate until 1990: and the exchange rate since 1.11.1989 has been 1 ECU = 190.998 dr.(104) It seems therefore that the State allowed a continuous depreciation in order to counter-balance the downward trend in the Intervention Price. Obviously this action cannot be sustained indefinitely. Furthermore, the percentage increase in prices after 1983/84 (expressed in drachma) shows a levelling off, and in 1986/87 was even lower than its 1981 level. In 1987/88 and 1988/89 the increase in prices was 15% and 16.8% respectively. This increase in prices which has occurred as a result of the Green drachma's depreciation means that the farmers have already lost part of their income as they subsequently have to pay

higher prices for all imported inputs (such as fertilizers, pesticides, fuel etc). Since the State has cut subsidies to these inputs the farmers have now to incur the whole cost, and this is not balanced by the Green drachma's depreciation. If we look at the olive grower's income now, which includes production aid, it appears that after 1984/85 the percentage increase does not even cover the annual rate of inflation and it gets close to the 1981 level when the olive sector was first incorporated in the C.A.P. This is an important result and obviously has serious implications for the future.

We may conclude that if the olive growers' income was dependent on the EEC price support policy - which came to replace the price intervention system of the Greek State in 1981, they would have been considerably worse off despite the continuous depreciations of the Green drachma. This consequence of the C.A.P has been resisted by the action of the olive cooperative movement which kept the selling producer price of olive-oil in the domestic market, at a level which allowed olive producers' annual income increase to exceed the annual inflation rate. This issue will be discussed further in the next section.

2.4 Changes in the Production Structure in the Olive Sector since the 1960's

The small size of agricultural landholding in Greece, combined with the high incidence of plot fragmentation constitutes a major constraint upon the development of the sector.(105) This is because this system seems to preclude an efficient use of capital, irrigation

and technological innovation. In addressing this weakness after 1953 the Ministry of Agriculture has implemented a special programme of land consolidation. More than 600,000 hectares have currently been rearranged; but because of the inheritance laws dating back to Byzantine times and still in force, re-fragmentation of the farms has taken place because no special countervailing measures were taken.(106) Table 2.16 presents the size distribution of holdings in the olive sector for selected years between 1961-1984. We observe that 88.7% of the total number of holdings in 1961 occupied had less than 3 ha of land, and 54.9% occupied less than 1 ha each. The percentage of olive growers owning more than 5 ha holdings was only 3.65%. This signifies the already well established fact that olive growing has been very much a family activity with no substantial wage labour requirements.(107) Until the late 1970's there was no apparent change in the above structure. We can also observe from Table 2.16 that it was only in the six year period between the two agricultural censuses of 1977/78 and 1984 that some restructuring has been taking place in olive growing. Despite this, the larger part of olive groves (61.2%) remains up to 3 ha, and the bulk of production has originated from the small and medium-size holdings. The number of rural households engaged in olive production, based on the 1984 Census, was approximately 350,000, or around 50% of the country's total rural households. Olive cultivation takes place throughout Greece, but the largest percentage of olive growers can be found in Peloponnesos 23.61%, Crete 21.71%, Thessaly 19.83% and the Islands with 18.48% (see Map I).(108)

The total number of olive trees in 1962 was 83,204 thousand, in 1974 107,734 thousand, and in 1980 118,832 thousand. We observe an increase of 29.5% and 10.3% respectively. Today it is around 123 million olive trees out of which 20 million are grown exclusively for edible olive production.(109) The percentage of isolated olive trees was reduced, while that of trees in olive groves increased throughout this period. This signals a trend towards a greater degree of concentration in the pattern of cultivation.

Of special importance is the distribution of olive groves in the plains, and the mountainous and semi-mountainous areas. In 1968 olive groves in flat areas occupied 195.43 thousand ha; in 1974 220 thousand ha; and in 1980 260.3 thousand ha.(110) The respective percentage increases were 12.6% and 18.2%. The increase over the period 1968-1974 was less than the increase in the total olive cultivated area-including mountainous and semi-mountainous areas - which was 13.6%. But the increase between 1974-1980 was 6% higher than the increase in the total area. This shows that recently, ie., after 1974, there has been a concentration of olive cultivation in flat areas where soil conditions and productivity are comparatively better than elsewhere. In mountainous areas the land size occupied by olive groves increased from 137.42 thousand ha in 1968, to 160.6 thousand ha in 1980, an increase of 17% which is less than the total increase in the olive cultivated area of 27.15% between 1968-1980.(111) This can be explained by the fact that because mountainous areas are infertile cultivation is being diverted towards more suitable soils. In the semi-mountainous areas the land size of olive groves increased from

163,42 thousand ha in 1968, to 210.1 thousand ha in 1980 i.e, 28.6% which was higher than the total area increase of 27.15%.(112) This kind of development occurred because these soils have a very low opportunity cost compared with the plains since no other type of cultivation is suitable. Also, according to N.S.S.G statistics, in 1980 50% of olive production came from flat areas, 19.8% from mountainous and 29.2% from semi-mountainous areas. It appears therefore that production per hectare in flat areas is the highest of these three general categories.

Under EEC policy the need for restructuring the farming units by increasing land size and mechanising cultivation suggests that in the near future small producers, including olive growers, may be found to drop out the arena of marketed production. The reason is simply that the small and fragmented farms are not as viable as the more developed parts of the sector. In the context of this so called process of "modernization" of olive growing, a number of specialist research stations have been financed by the EEC and by national funds. The research undertaken which is largely focused upon improving olive growing techniques and in enchancing the introduction of those modern requirements (such as skilled labour, specialist machinery and chemical inputs) in order to achieve greater yields per hectare. Indeed, in some cases new methods have tripled production per hectare (i.e, 7-9 tonnes of olives per hectare or 1,300-1,500 kg of olive-oil).(113) They have also helped to improve the quality of olive-oil produced, so that about 65% of the total production is now Extra Virgin.(114) This means that the growers incomes have improved given the higher selling

price of these more up-market qualities. The mechanical equipment used and the special care with cultivation required for "modernization" make the advice given to the cultivators more relevant to that small and wealthy minority of the rural population which has sufficient funds to invest in improving their techniques of production. So, when agricultural experts complain about farmers' ignorance and resistance to change, they create a sense of confusion between class position and personal characteristics. The State and the E.E.C have specific requirements for production processes which are dependent upon mechanical, chemical and biological inputs whose technology is ultimately controlled by foreign capital and aim at producing a stream of final produce whose price will be such, that it could be easily absorbed into the industrial food processing chain.

In the context of its restructuring policy, the E.E.C has classified the olive tree as a "maintained crop". According to Regulation 1562/1978, only olive-oil produced in areas planted before a certain date is eligible for Production Aid. This is where the Regulation has faced a number of problems.(115) This constraint is effective only if the number of trees has been accurately compiled. Despite the Commission's suggestions and the percentage of Production Aid which has been deduced in order to finance olive trees registering, this task has not yet been accomplished due to administrative difficulties and high costs. Table 2.17 presents the percentage reductions of Production Aid set aside to cover the costs of compiling the olive cultivation register.

Table 2.17: Percentage Reductions of Production Aid to Cover the Cost of the Olive Cultivation Register

Marketing Year	Italy/France	Greece
1980/81	-	0.96 ECU per 100kgr
1981/82	-	0.96 ECU per 100kgr
1982/83	2.5%	0.96 ECU per 100kgr
1983/84	2.5%	0.96 ECU per 100kgr
1984/85-1989/90	2.5%	2.5%

Source: Official Journal of the European Communities, No. C 134/56, Vol. 28, 3.6 1985

It Italy 15 percent of the area has been registered. Greece however, has no land registration system and suitable cadastral maps simply do not exist.(116) In these circumstances the Greek authorities look upon the olive cultivation register as a long-term project, taking at least 10 years. So, expansion of production through new planting has always been a fear of the Commission. The increase in Greek olive production in the mid 1980's must have taken place because of new planting during the years prior to accession. Another problem of Regulation 1562/1978 is fraud. Even though the Italian government rejects considerable amounts of olive-oil requested for Production Aid each year, there is still a significant gap between these quantities which are qualified for Production Aid and quantities granted with the Consumption Aid. A special investigation undertaken by the Court of Auditors whose results were published in June 1985, points out the need to reform the implementation of the 1562/1978 Regulation of the EEC price support and aid system.

Parallel with those directives limiting olive-oil production, the E.E.C. has encouraged the expansion of seed oils cultivation in the olive producing member-states. In the Greek case, since 13.1.1988 free marketing and production of seed-oils has been allowed in the olive producing regions of the country.(117) Competition with these products - whose average price is currently approximately 1/3 of olive-oil- means that demand patterns are now greatly influenced at local as well as at the national level. In the primary sector, there is an increasing amount of land under seed-oil cultivation - mainly in Macedonia and Thrace but also in areas like Messenia, Heracleon and Lesbos. In 1982 sunflower was cultivated on an area of 4,800 ha; in 1986 it increased to 79,000 ha. and is still rising.(118) Elais, the subsidiary of Unilever, has itself become involved in a project of land diversification in favour of seed-oil cultivation. It rendered financial help and its expertise to large producers.(119) The reason is that Elais needs seed-oils as a raw material in order to facilitate the expansion of its own oil-seed oils production effort. Cotton cultivation has been also expanded from 138,600 ha. in 1982 to 229,600 ha. in 1986, and is also still rising.(120) The significance of these processes under the E.E.C direction reflects the parallel attempt to contract olive production. This has been clearly shown in the context of Regulation 1096/1988 which encourage the farmers in general and olive producers in particular, to opt out. More specifically, cultivators aged between 55-56 years are encouraged to cease farming activities against a monthly compensatory amount of 30,000 dr (£113) paid for a maximum period of ten years (and not above the 70th year of the cultivator's life). The agent for implementing Regulation

1096/1988 in Greece is the A.B.G under the National Regulation 296911/6031/5.4.1989. It is estimated that up to now 66,000 cultivators have opted out of the marketed production arena.(121)

The domestic response of olive growers to both arms of EEC policy, the structural and the price support mechanism, came through the development of the olive cooperative movement. Producers organised themselves into cooperatives in order to obtain prices which would cover costs and leave them with an average profit so that by reinvesting, they could improve production conditions and so better support family income. Producers also aimed to improve the quality of their produce and reduce their cost of production. The vast majority of olive growers are members of Eleourgiki. Table 2.18 shows the effect on olive producers income by Eleourgiki's action between 1981/82 - 1987/88 as a price setter in the domestic market. The olive-oil prices presented refer to Extra Virgin quality. We observe that the activities of Eleourgiki such as price setting and market intervention have managed to earn the olive growers a much higher level of income than that allowed under the E.E.C regime.

Table 2.18: Income of Olive Growers after the Action of Eleourgiki, 1981/82-1987/88, (in dr/Kgr, current prices)

Year	EEC-Price	Increase between Years	Eleourgiki - Price	Increase above that of the EEC-Price
1981/82	136.70	11%	153.70	+12.5%
1982/83	174.95	28%	181.00	+ 5.5%
1983/84	224.76	28%	236.20	+ 5.0%
1984/85	275.51	23%	314.50	+14.2%
1985/86	323.27	17.34%	382.61	+18.4%
1986/87	355.25	9.9%	416.78	+17.6%
1987/88	408.53	15%	450.20	+10.2%

Source: Eleourgiki, No. 18, June 1989

More specifically during the seven year period 1982/88 the olive growers were granted an average increase of 11.7% above the E.E.C price support and aid system. Since 1981 the State has subsidised the internal structural development of olive cooperatives and credit has been provided through the A.B.G at interest rates of between 14-17% p.a.(122) Olive market intervention by Eleourgiki in order to guarantee higher producer incomes and storage of the olive-oil until suitable markets were found, resulted in the creation of huge debts by Eleourgiki to the A.B.G. Furthermore, the modernization process left most cooperatives, especially those involved in olive processing, with debts (also to the A.B.G).(123) The main reason for this state of affairs at least according to the A.B.G., appears to be problems with the quality of cooperative management and high interest on deferred

payments.[124] Because 1989 was an election year, the State has recently written down a large part of the olive cooperatives' debt to the A.B.G. It was hoped that this measure would boost and restore confidence in the cooperative organisation in the olive growing areas.

We can conclude that the E.E.C regime has induced restructing of olive growing-the oldest rural activity in Greece. The relatively slow pace of change has been due to the constraint posed by the small scale organisation of production, which does not seem to allow a more cost effective transformation of the sector to take place.

Conclusions

Chapter Two has focused on the basic features of the organisation and structure of olive production since the establishment of the Greek State. I have attempted to identify those factors responsible for the specific form of evolution taken in the agrarian structure. It has been argued that the organisation of olive production has been shaped by a number of socio-economic and political developments which have delayed restructuring at the farm-gate level. In such development an important role was played by factors within the rural setting as well as outside it. More specifically, from the social differentiation process at work within the olive growing areas, the merchants and a group of oil-millers emerged. The development of oil-milling and its contribution to rural industry is taken up in Chapter Four. In this Chapter, the impact of merchant capital on the organisation and structure of farming has been discussed. The struggle between

cultivators and merchants for control over production, with the domination of the latter for decades in the olive growing areas, posed a serious constraint upon the modernisation and expansion of the olive production processes.

The further development of merchant capital and its connections with the rise of urban processing of olive-oil is dealt with in the Second Part of this Thesis. Outside the rural setting, it has been shown that the action undertaken by the State has decisively influenced organisation and change in olive growing. The impact of these endogenous and exogenous forces on the organisation and structure of farming, together with the natural conditions impinge directly upon the cultivators' decision-making process. As a result, an important traditional element in their decision horizon has been retained, since on the small size farms - which still form the majority in olive farming - there has been little real scope for the application of new and evolving techniques or a more efficient use of capital. This constraint has also been reflected in the fact that annual rate of growth of olive production between 1974-1988 was only 0.6% compared with 6% between 1950-1974, which points to the limitations for improvements in the absence of significant restructuring. This is not to say that profit maximising decisions are not present implicitly in the minds of olive growers, but these are certainly combined with a whole range of social circumstances, technical research effort and political developments which can accelerate or hold back improvements in the production processes. In Chapter Three it will be contended that any attempt to explain the cultivators' decision making process

by modelling production trends alone conceals rather than reveals important structural and social factors at work within the olive growing village setting. In support of this argument, case studies of two villages in the prominent olive growing province of Messenia are presented.

References

1. See P. S Avdelidis, The Agricultural Cooperative Movement in Greece, (Athens, 1986) pp.16-17.+

2. The surplus exacted from the peasants by the State was by means of taxation and the timariots (rent payments in kind or money). See L. S. Stavrianos, The Balkans since 1453, (New York, 1958) p.122fn. See also P. S. Avdelidis, 1986, Ibid, p.13.

3. See N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949) p.44.+

4. Ibid, p.44

5. See P. S. Avdelidis, 1986, op.cit, p.16.

6. See N. Mouzelis, Modern Greece Facets of Underdevelopment, (London, 1978), p.14.

7. See S. Spiliotopoulou, History of the National Bank, (Athens, 1949) p.17.+

8. See A Sideris, The Agricultural Policy of Greece, 1833-1933, (Athens, 1934).+

9. Frederick Teers was a Bavarian historian who in 1835 wrote a book entitled About the Contemporary Situation in Greece and Means for its Regeneration quoted by P. S. Avdelidis, 1986, op.cit, p.16.

10. See A. Sideris, 1934, op.cit, p.91-92.

11. See N. Lihnos, 1949, op.cit, p.45.

12. Ibid, p.45

13. Ibid, p.45

14. I have deduced this from the fact that the olive tree needed a period of seven years before it entered the fruit bearing stage.

15. See P. S. Avdelidis, 1986, op.cit, p.18.

16. Ibid, p.19

17. Ibid.

18. See J. Kordatos, Pages from the Agrarian Movement of Greece, (Athens, 1964).+

19. Peloponnesos at that time formed the largest part of the newly created Greek State. For more details about the commercialisation of agriculture in Peloponnesos see D. Daniilidis, Modern Greek Society and Economy, (Athens, 1934) and also N. Mouzelis, 1978, op.cit, p.19-20.

20. N.S.S.G, Economiki Epetirida, 1914.

21 See J. Kordatos, 1964, op.cit.

22. See N. E. Anagnostopoulos, The Land Reform of 1922 in Greece, (Athens, 1929).+

23. N.S.S.G, Economiki Epetirida, 1920.

24. See P. S. Avdelidis, 1986, op.cit, p.20.

25. See N. Mouzelis, 1978, op.cit, p.19.

26. Ibid, p.19.

27. See J. Kordatos, History of Modern Greece, 5 Vols. (Athens, 1958). Also see N. Psiroukis, The Asia Minor Catastrophe, (Athens, 1974).+

28. According to J. Kordatos, processes of economic concentration due to extensive usurious practices were taking place in Greece after the 1922 Land Reform. See J. Kordatos, Pages from the Agrarian Movement of Greece, (Athens, 1964) p.143.

29. A. Pallis has calculated that the total number of refugees who entered Greece after 1922 (including the Greek refugees from Russia and Bulgaria) was more than 1.5 million. See "Les effets de la querre sur la population de la Grece", in A Andreadis (ed), Les effets economiques et sociaux de la guerre en Grece, (Paris, 1928).

30. See P. S. Avdelidis, The Agricultural Cooperative Movement in Greece, (Athens, 1986) p.57.

31. See A. Klemi, The Agricultural Economy of Greece, (Athens, 1960).+

32. See J. Kordatos, History of Modern Greece, 5 Vols. (Athens, 1958); also his Introduction to the History of Greek Capitalism (Athens, 1930). Also N. Psiroukis, The Asia Minor Catastrophe, (Athens, 1974) and J. Zevgos, Short Study of Modern Greek History, (Athens, 1945).+

33. See J. Kordatos, 1964, op.cit.

34. N.S.S.G, Agricultural Census, 1929.

35. Ibid

36. The assumption 120 trees per hectare appears to be a good approximation to reality. See N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949).

37. N.S.S.G, Economiki Epetirida, 1937

38. N.S.S.G, Economiki Epetirida, 1937, 1938.

39. See P. S. Avdelidis, 1986, op.cit. p.58.

40. N.S.S.G, Agricultural Census, 1939.

41. See N. Lihnos, 1949, op.cit p.50

42. Ibid

43. This can be easily deduced if the total area is divided by the number of olive growing families as per Table 2.4.

44. See A.B.G, Structural and Economic Indicators on Family Farms, (Athens, 1973).+

45. See N. Lihnos, 1949, op.cit, p.51

46. See N. Mouzelis, 1978, op.cit.

47. See N. Karabelas, Messeniaka Grammata, (Calamata, 1981). Also see Chapter Five of this study.

48. See D. Pournaras, History of the Agrarian Case, (Athens, 1960) p.118, 133.+

49. Quoted in: Structural Changes in the Greek Rural Sector, The Centre of Marxist Research, (Athens, 1982).

50. Interview with E. Evagellou, Head of Agro-Industry Department, A.B.G 1988.

51. See N. Lihnos in the Agricultural Bulletin of the Greek Agricultural Company, 1930, Vol. 23, Issue 228.+

52. Ibid.

53. See J. Kordatos, 1964, op.cit, p.143.

54. See S. Spiliotopoulou, 1949, op.cit.

55. Ibid.

56. The National Bank of Greece gave loans to the agricultural sector in 1924 and 1926. Out of the total amount lent, 7.45% (in 1924) and 2.28% (in 1926) went to olive growing. See the Agricultural Bulletin, Vol.23, issue 228, 1930, published by the Greek Agricultural Company.

57. In 1930 the A.B.G. gave loans of 814,473,419.90dr (in current 1930 prices) to 173,465 farmers who were members of cooperatives and 73,689 independent farmers. Olive-growing received only 26,742,130.75 dr. while tobacco, wheat and vines received amounts six times higher. This shows the rather negative attitude of the State towards olive cultivation in the inter-War period, Ibid,.

58. See P. S. Avdelidis, 1986, op.cit, p.63

59. See N. Lihnos, 1949, op.cit

60. See P.S. Avdelidis, 1986, op.cit, p.65.

61. Ibid.

62. In 1930 with Law 4640 no member of a cooperative was allowed to undertake any political activity such as candidacy for member of Parliament or as a Mayor. Also with Law 5289 in 1931 the economic activities of cooperatives were limited and put under control. A number of other Laws were passed between 1930-1932 which similarly restricted the development of cooperatives such as 5277, 5420. See P.S. Avdelidis, 1986, op.cit for further details.

63. See N. Lihnos, 1949, op.cit.

64. Ibid.

65. It would guarantee to buy any unsold quantities of olive-oil from the producers through their local cooperatives. It would attempt to obtain the best terms of credit for olive producers which it could manage to secure. It would also become involved in supplying the cultivators with fertilizers and other necessary inputs during the production process. Personal Interview with Mr. Petraki, Department of Primary Production, Eleourgiki, 1987.

66. Ibid.

67. Personal Interview with Y. Xiloyiannis, PASEGES 1988 and : Personal Interview with G. Bazyioti, Ministry of Agriculture 1989. In the provinces of Messenia and Laconia, in Crete and other olive producing islands, olive merchants have dominated olive growing regions for decades and the majority of them appear to have invested their personal fortunes in the tertiary sector particularly

tourism. In Chapter Three I present specific evidence of the leakage effect drawn from Messenia Province.

68. Information obtained from A. Kiriakoulako, Department of Supplies, Eleourgiki, 1988.

69. See N. Mouzelis, 1978, op.cit. p.23

70. See P. S. Avdelidis, 1986 op.cit, p.17

71. See N. Lihnos in the Agricultural Bulletin of the Greek Agricultural Compny, 1930, Vol.23, issue 228.

72. ibid

73. N.S.S.G, Economiki Epetirida, 1931.

74. See N. Lihnos, 1930, op.cit.

75. N.S.S.G, Economiki Epetirida, 1931.

76. See N. Lihnos, 1930, op.cit.

77. Cultivators could not afford to use fertilizers every year, even if it was really necessary for their particular circumstances, ibid,.

78. Ibid.

79. N.S.S.G, Economiki Epetirida, 1931.

80. N.S.S.G, Economiki Epetirida, 1937.

81. N.S.S.G, Income and Employment Indicators of Greece, 1971.

82. Between 1950-1975, the A.B.G, Department of Vegetable Production, estimated that olive-oil covered about 80% of the total oils and fats consumption in Greece.

83. Ministry of Agriculture and Eleourgiki: Information obtained from the Departments of Primary Production, 1988.

84. Ibid.

85. Ibid.

86. Eleourgiki estimates, Department of Primary Production, 1988.

87. Ministry of Agriculture (YDAGEP), Oral Evidence, 1988.

88. Ibid.

89. A.B.G, Department of Planning and Statistics, 1983.

90. During this period of Post-War Policy the annual growth rate of olive-oil production (estimated in Chapter One) was 6.2% which is about two percentage points above the Inter-War rate.

91. N.S.S.G, Income and Employment Indicators of Greece, 1981.

92. Information received during discussion with E. Evagellou, Head of the Department of Agro-Industry of the A.B.G, Summer, 1988.

93. The difference in price between the various levels of olive-oil acidity since Greece's accession into the E.E.C exceeds 25%. Ministry of Commerce, Price Series, 1987.

94. Ibid

95. Personal information received from YDAGEP, 1989.

96. Ibid

97. See Regulation No. 136/66/EEC, establishing a Common Market Organisation in Oils and Fats dated 22/9/1966.

98. See Eleourgiki, No. 16, December, 1988.

99. See Regulation No. 1562/78/EEC. Amending Regulation No. 136/66/EEC on the establishment of a Common Organisation of the market in Oils and Fats dated 29/6/1978.

100. Ibid.

101. Ibid.

102. See A Kiritsakis, The Olive-Oil, (Thessaloniki, 1988) p.278.+

103. See Monica Hartmann, W. Henrichsmeyer and P.M Schmitz, "Political Economy of the C.A.P. in the European Community" in Congress Proceedings, 9th World Congress, International Economic Association, Athens, 1989.

104. See Eleourgiki, No. 18, June 1989.

105. According to the N.S.S.G, each rural household owns on average 6 plots of cultivated land. In 1980 the average EEC farm-size (inclusive of Greece) was 18 ha. while in Greece it was only approximately 4 ha. Without Greece it is 25 ha. Eurostat, 1980, Yearbook of Agricultural Statistics, Statistical Office of the European Communities, Brussels.

106. See Th. Tsoumas and D. Tasioulas, The State of Ownership and Uses of Agricultural Land in Greece, (Athens 1986).+

107. The importance of labour employed in olive-cultivation, (as mentioned in Chapter One), lies in its seasonal distribution. During the winter months whene demand for labour is low, olive-growing offers the possibility for employment in the rural areas.

108. N.S.S.G, Agricultural Production Yearbook, 1988.

109. Ibid.

110. N.S.S.G, Agricultural Production Yearbooks, 1969, 1979, 1981.

111. Ibid.

112. Ibid.

113. See Eleourgiki, No. 18, June 1989.

114. Ibid.

115. For further details on this issue see Official Journal of the European Communities, C.134, Volume 28, 3 June, 1985.

116. Ibid.

117. Ministry of Agriculture, Department of Information, June, 1988.

118. Information received from the Cotton Organisation, Athens, 1988.

119. Interview with L. Melas, General Director of Elais, March, 1988.

120. Cotton Organisation, Athens, 1988.

121. See Economicos Tahidromos, 15 March 1990, p.21.

122. E.O.M.E.H, "Incentives to Small-Scale Industry and Cooperatives", Internal Publication, 1985.

123. E. Evagellou, Department of Agro-Industry, the A.B.G, 1988.

124. Ibid.

Table 2.1 **Olive-Oil and Edible Olive Production and Exports between 1920-1937 (in tonnes)**

	Production		Exports	
Years	Olive-Oil	Edible Olives	Olive-Oil	Edible Olives
Average 1920-25	81,412	27,545	10,901	13,063
Average 1926-31	85,734	28,396	11,714	11,291
1932	134,320	36,092	23,198	14,374
1933	105,355	24,486	6,870	13,804
1934	122,579	35,834	11,148	15,185
1935	88,186	33,357	8,029	15,195
1936	72,570	13,388	6,730	12,805
1937	187,471	70,797	20,526	14,347

Source: N.S.S.G, Economiki Epeterida, 1938

Table 2.3: **Total Number of Olive Trees in Production the Area of Wild-Olive Trees in Acres and the Number of Wild Olive Trees per Acre, 1939**

Geographical Areas	Provinces	Olive Trees in Production	Area of Wild Olives in Acres	No of Wild Olive trees per acre
	Kerkera	3,247,000	3,153,9	12 - 40
	Paxi	156,100		
Ionian Islands	Lefkas	1,009,400		
	Kefalonia	628,246	6,969,8	4 - 40
	Zakenthos	1,000,000		
	Total	6,040,746	10,123,7	16 - 81
	Samos	1,892,500	3,363,8	40 - 202
Aegean Islands	Ikaria	245,000	3,830,9	24 - 162
	Hios	1,354,100	2,879,4	20 - 121
	Lesbos	7,990,193	8,414,5	20 - 121
	Total	11,481,793	18,488,5	105 - 607
	Naxos	184,150	3,707,5	20 - 809
	Andros	223,200		
Keklades	Anafi	56,730	988,5	202
Islands	Melos	103,000	lowest	
	Kea	6,950		
	Seros	2,645		
	Tenos	106,500		
	Total	683,175	4,696	20 - 1011
	Rethymno	2,668,220	1,730,1	8 - 20
	Hania	3,531,818	2,115,9	4 - 20
Crete	Heraklio	4,800.141		
	Lasethi	2,554,400	5,437,5	4 - 243
	Total	13,554,579	9,284,5	16 - 283
Thessaly	Larissa	4,551,924	7,350,7	40 - 202
	Total	4,551,924	7,350,7	40 - 202
	Ebros	324,500	1,631,2	32 - 101
	Rodopi	151,200	37,123	8
Thrace	Kaballa	923,000	5,526,4	42 - 162
	Total	1,398,700	44,280,7	81 - 271
	Arta	150,000	28,545,2	24 - 81
Epirus	Preveza	1,250,493	151,3	607
	Yannina	10,532	4,127,5	8 - 81
	Thesprotia	612,210		
	Total	2,023,705	32,824,3	32 - 769

	Euboea	2,667,595	28,372,5	61 - 121
Sterea	Atolia	719,520	19,127,5	32 - 81
	Attica	1,847,015	18,969,3	8 - 81
	Fthiotida	1,882,850	25,914,5	81 - 121
	Total	7,116,980	92,383,8	182 - 405
	Ahaia	682,245	16,145	20 - 162
Peloponnese	Lakonia	4,170,810		
	Arkadia	1,279,230	9,181,9	20 - 121
	Elia	968,089		
	Messenia	4,456,864	3,601	61 - 162
	Korinthos	2,394,660	36,039,5	61 - 121
	Total	13,921,898	64,967,6	162 - 566
	Halkidiki	492,250	68,919,9	101 - 243
Macedonia	Agio-Oros	180,750		
	Salonica	45,180		
	Total	718,180	68,919,9	101 - 243
	TOTAL	**61,491,688**	**353,320**	

Source: N.S.S.G, Agricultural Census, 1939

Table 2.4: **Number of Olive Growing Families, Number of Rural Families and the Population of Greece by Province in 1939**

Geographical Areas	Provinces	Number of People	Number of Rural Families	Number of Olive Growing Families
Ionian Islands	Kerkera	120,765	24,408	17,882
	Lefkas	26,673	22,217	22,217
	Kefalonia	75,473	13,250	12,346
	Zakenthos	34,690		
	Total	157.601	59,875	52,445
Aegean Islands	Samos	65,214	12,117	9,022
	Ikaria	17,324	3,179	2,848
	Hios	77,466	19,220	13,566
	Lesbos	142,193	22,741	20,448
	Total	302,197	57,257	45,884
Keklades Islands	Naxos	31,900	5,264	3,849
	Andros	17,890	2,857	3,087
	Seros	32,250	1,755	254
	Tanos	11,286	1,765	1,750
	Melos	28,388	5,428	4,798
	Total	121,714	17,069	13,738
Crete	Rethymno	78,174	15,696	14,707
	Hania	134,867	21,486	20,221
	Lasethi	62,466	13,370	12,432
	Heraklio	126,361	24,960	24,960
	Total	401,866	75,512	72,320
Thrace	Ebros	10,632	2,046	1,554
	Rodopi	1,720	420	180
	Kaballa	11,573	195	3,500
	Total	23,925	2,661	5,234
Macedonia	Halkidiki	24,587	4,486	4,757
	Macedonia	24,587	4,486	4,757
	Total	49,174	8,972	9,514
Epirus	Arta	10,549	1,983	1,320
	Preveza	22,589	2,954	2,193
	Yannina	12,150	2,013	1,016
	Thesprotia	39,660	13,388	5,572
	Total	84,948	20,338	10,101
Thessaly	Larissa	96,647	20,647	9,746
	Total	96,647	20,647	9,746

	Korinthos	117,829	22,089	14,771
Peloponnese	Messenia	162,387	68,493	33,684
	Elia	143,560	19,897	15,112
	Arkadia	48,630	9,598	5,701
	Lakonia	13,279	2,869	2,824
	Ahaia	176,478	18,022	15,129
	Total	662,163	140,968	87,221
	Euboea	74,898	18,226	14,149
Sterea	Atolia	138,352	24,079	8,825
	Attica	109,207	17,044	14,646
	Fthiotida	78,505	11,974	10,552
	Total	400,962	71,363	38,172
	TOTAL	**2,276,610**	**470,176**	**339,618**[1]

Notes: 1. 339.618 families ≃ 1,500,000 people

Source: N.S.S.G, Agricultural Census, 1939

Table 2.7: Olive-Oil Production in Lesbos : the Composition of Producer Expenditure per Stremma, 1930
(Average two-year olive production in current prices)

Cultivation Cost : First Year of Cultivation

3 units of Daily Wages for Pruning,	80 dr a day	= 240 dr
4 units of Daily Wages for Digging,	45 dr a day	= 180 dr
1 units of Daily Wage for Land Levelling,	45 dr a day	= 45 dr
1 unit of Daily Wage for Construction Work	50 dr a day	= 50 dr
Total		= 515 dr

Cultivation Cost : Second Year of Cultivation

4 units of Daily Wages for Digging,	45 dr a day	= 180 dr
1 unit of Daily Wage for Land Levelling,	45 dr a day	= 45 dr
1 unit of Daily Wage for Construction Work	50 dr a day	= 50 dr
Total		275 dr

Harvesting of 500 kgrs of Olives

2 units of Daily Wages for Ground Cleaning	45 dr a day	= 90 dr
12 units of Daily Wages for Olive Picking	30 dr a day	= 360 dr
3 units of Daily Wages for Harvesting,	70 dr a day	= 210 dr
5 units of Transfer of Olives to the Mill	30 dr each	= 150 dr
20 Baskets for Carrying the Olives		= 20 dr
Total		830 dr

Production of Olive-Oil at the Mill

Processing of 500 kgrs of Olives	= 150 dr
Farm - Tax for Services of the Local Police	= 40 dr
Total	190 dr

Cost of Land = 8,000 dr. at 10% for two years = 1,600 dr

Total Production cost of Olive-Oil = 3,410 dr.

Source: N. Lihnos in the Agricultural Bulletin, the Greek Agricultural Company, Vol. 28, 1930.

Table 2.8 : **Fertilizer Subsidies in Greece, 1956 - 1975**
(in dr/tonne, current prices)

	Nitrate of Ammonium			Phosphate 16%			Sulphate of Potash		
Year	Cost	Farmers Price	Subsidy %	Cost	Farmers Price	Subsidy %	Cost	Farmers Price	Subsidy %
1956	3,305	2,797	15	1,117	1,130	-	2062	1,876	9
1960	2,440	2,600	-	961	892	7	2053	1,700	17
1965	2,500	2,100	16	1,236	900	3.5	2054	1,700	17
1970	2,214	2,100	5	1,257	900	28	2236	1,700	24
1973	2,461	2,100	15	1,336	900	33	2618	1,700	35
1975	4,654	2,800	40	3,576	1,300	63	5579	2,400	57

Source : Derived from A.B.G. The Role of State Intervention in Fruit Production, (under the authorship of N. Baltas, 1977).

Table 2.10 : Credit Provision to Agriculture and the Other Sectors of the Economy, 1948-1983.
(In million dr, current prices)

AGRICULTURE

Years	Short-Term Credit	Agricultural Supplies	Medium and Long Term Credit	Total	The Other Sectors
1948	582	111	70	763	1,852
1949	897	196	133	1,266	3,066
1950	1,095	208	155	1,458	4,569
1951	1,638	221	279	2,138	6,304
1952	1,864	277	352	2,493	6,367
1953	1,699	381	361	2,441	7,961
1954	2,155	650	377	3,182	10,172
1955	2,600	695	435	3,730	11,139
1956	3,219	560	583	4,362	13,908
1957	3,701	761	845	5,307	17,453
1958	4,309	681	1,307	6,297	20,530
1959	4,370	965	1,937	7,272	22,727
1960	4,577	741	2,515	7,833	26,133
1961	5,042	588	3,062	8,692	28,990
1962	5,027	702	3,168	8,897	33,414
1963	6,009	666	3,420	10,095	39,762
1964	6,238	976	4,144	11,358	45,416
1965	6,636	1,399	4,702	12,737	49,776
1966	6,537	2,247	5,030	13,814	56,643
1967	7,203	2,017	6,028	15,248	67,492
1968	7,113	1,480	4,896	13,489	76,039

continued...../

continued...../2.10

AGRICULTURE

Years	Short-Term Credit	Agricultural Supplies	Medium and Long Term Credit	Total	The Other Sectors
1969	7,258	1,538	6,229	15,025	92,424
1970	8,444	1,170	8,130	17,744	113,325
1971	9,795	1,247	10,380	21,422	138,503
1972	11,539	1,269	13,576	26,384	171,657
1973	14,870	1,092	17,755	33,717	202,600
1974	20,381	3,321	20,821	44,523	243,230
1975	23,748	6,945	24,568	55,261	302,823
1976	29,408	8,550	28,579	66,537	379,336
1977	38,949	14,101	37,110	90,160	475,824
1978	49,034	12,737	48,424	110,195	585,048
1979	52,347	13,259	60,194	125,800	691,777
1980	62,531	14,129	65,209	141,869	828,071
1981	73,284	14,317	74,081	161,682	1,040,114
1982	86,883	17,794	94,873	199,552	1,277,908
1983	118,264	22,272	99,319	239,855	1,902,020

Source : The National Bank of Greece, Monthly Statistical Bulletin, various years.

Table 2.11 Quantities of Olive-Oil Collected by the State and the Storage[1] Cost between 1957/58 - 1976/77

(in current prices, thousand dr. and tonnes).

Years	Quantity	Storage Cost	Intervention Price dr/kgr	Cost of Storage as a Proportion of Total Sales value
1957/58	6,471	8,992.4	16.3	8.5
1958/59	-		-	-
1959/60	974	-	16.8	-
1960/61	-	-	17.1	-
1961/62	33,125	-	17.1	-
1962/63	124	-	17.1	-
1963/64	44,019	52,787.7	19.2	6.2
1964/65	6,902	9,410.8	19.7	1.1
1965/66	33,301	34,698.9	20.6	5.1
1966/67	34,183	42,834.2	22	6.4
1967/88	41,983	48,055.0	22.5	5.1
1968/69	6,238	-	22.5	-
1969/70	507	293.8	22.5	2.6
1970/71	13,384	-	26.7	-
1971/72	14,204	21,218.4	36.6	4.1
1972/73	33,450	77,260.8	41.6	5.5
1973/74	1,574	4,488.2	51	5.6
1974/75	9.860	27,481.2	53	5.2
1975/76	56,474	201,194.5	57	6.2
1976/77	58,421	145,091.6	65.5	3.8

Notes: 1. Including commissions for Eleourgiki and the A.B.G, transport, and maintaining the oil-banks.

Source: Data obtained from the Ministry of Agriculture and the A.B.G.

Table 2.12: Common Prices Fixed at the Beginning of the Market Year for Semi-Fine Olive-Oil 3° under the EEC's CAP and World Prices, 1966/67 to 1977/78, Prices in ECU/tonne

Production Year	Producer Target Price	Market Target Price	Production Aid	Threshold Price	Intervention Price	World Price
1966/67	1,150	800	350	798	730	654
67/68	1,125	802.5	350	792	730	698
68/69	1,152	721	431	707	648	666
69/70	1,152	721	431	707	648	719
70/71	1,152	721	431	707	648	743
71/72	1,187	756	431	742	683	775
72/73	1,247	796	451	782	723	997.6
73/74	1,371	950	421.7	930	877	1425.2
74/75	1,440	1,018	421.7	998.6	946	1278.8
75/76	1,850	1,499.6	350.4	1469.6	1427	895.7
76/77	1,850	1,448.9	401.1	1418.9	1376.4	n.a.
77/78	1,877.8	1,419.1	458.7	1389.1	1346.1	n.a.[1]

Notes: 1. Not available

Source : M.Xekalakis, "Implications for the Greek Olive-Oil Market of Adopting the Common Agricultural Policy of the European Economic Community", Unpublished Ph.D Thesis, University of Reading, Reading, 1979.

Table 2.15: EEC Price Support System on Olive Oil, 1980/81-1986/87 (in ECU/100kgr dr/100kgr)

		1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Intervention Price(1)								
Greek = EEC	Ecu	170.8	186.97	217.93	229.92	227.62	227.62	216.24
Acidity 3°	dr	10,494.88	12,126.81	14,503.8	17,760,88	20,606	23,296	25.229
Production aid (2)	Ecu	11,16	12	25.65	40.50	55.04	69.56	70.95
1985/86 equalization of Greek & EEC-9	dr	666.45	737.34	1,707.0	3,130.09	4,983	7,119	8,278
Producer's income	Ecu	181.96	198,97	243.58	270.44	282.66	297.18	287.19
(1) + (2)	dr	11,161.33	12,864.15	16,210.8	20,890.97	25,589	30,415	33,507
Consumption aid	ECU/100kgr		13.55	29.33	36.98	43.39	53.04	84.94
Acidity 3o	dr/100kgr		832,59	1,951.99	2,856.63	3,928	5,426	9,910
% change in producers' income			15.25	26	28.8	22.4	18.8	10.16
% change in intervention price in ECU			16.17	30.96	11.99	-2.3	0	-11.38
% change in intervention price in drachmas			15.5	19.6	22.4	16	13	8.2
Inflation[1]			24.9	21	20.5	18.5	25	25
Exchange rate ECU = dr			61.4445	66.5526	77.2479	90.5281	102.3	116,0
% Depreciation of "Green" dr			2.9	8.3	16.1	17.2	13.0	13.4

Notes: 1. The figures for inflation should be taken with caution
Source: Extracted from figures supplied by Ministry of Agriculture, Eleourgiki and Commission (86)

Table 2.16 : The Size Distribution of Holdings in the Olive Sector, 1961-1984. (in hectares)

	1961		1971	
Size	No.of Farms	%	No. of Farms	%
0.1-0.9	310,982	54.9	275,030	54.2
1-2.9	191,696	33.8	172,944	34.1
3-4.9	43,002	7.6	38,783	7.6
5-9.9	18,138	3.2	17,256	3.4
10-19.9	2,412	0.42	2,651	0.5
>20	195	0.03	253	0.04
	566,425	100	506,917	100

	1977 - 78		1984	
Size	No.of Farms	%	No. of Farms	%
0.1-0.9	268,570	56.6	94,440	22.70
1-2.9	152,570	32.2	160,360	38.52
3-4.9	33,680	7.1	78,040	18.75
5-9.9	15,850	3.3	62,980	15.13
10-19.9	2,990	0.63	17,260	4.15
>20	370	0.08	3,120	0.75
	474,030	100	416,200	100

Source: Derived from the National Statistical Service, Agricultural Censuses of 1975, 1984.

MAP I


GREECE
Aetolia
Eboea
Attica
Messenia
CRETE
Olive producing areas
0 km 100

CHAPTER THREE

DETERMINANT FACTORS IN THE SUPPLY OF OLIVE-OIL : A CASE STUDY OF TWO VILLAGES IN MESSENIA PROVINCE

Introduction

I have argued that the natural conditions of olive growing (discussed in Chapter One) combined with the weight of tradition reflected in the social organization of production (discussed in Chapter Two), have directly impinged upon the olive growers' decision making process. In this chapter it is contended that the supply of olive-oil is determined not only by conventional economic variables in association with natural conditions, but is also greatly influenced by a complex amalgam of past and present social and institutional factors related to the character of the rural sector in general, and to olive cultivation in particular. In order to obtain some direct "grass-roots" insight into the cultivators' behaviour and their decision making process, the largest part of this Chapter concentrates on the experience of two olive producing villages situated in Messenia province.

Section One attempts to identify the major determinants of olive-oil production by modelling the supply function. The difficulties in quantifying and specifying the most important supply factors in order to capture the correct data-generating process are discussed. It is shown that the diversity of published estimates relating to the

response of olive-oil production to price changes is mainly due to data discrepancies - an issue briefly alluded to in Chapter One.

In Section Two an estimation of the Greek olive-oil supply function is undertaken. It is established that producer price is not the most important determinant of production; rather the capital stock as represented by the number of trees planted is found to be decisive. In this respect I contend that modelling the supply function may be seen as being a first step towards explaining the cultivators' decision making process. This is because any formulation which does not manage to include social processes and institutional change tends to conceal rather more than it reveals about key aspects of producers' behaviour.

I proceed therefore in Section Three to discuss the experience of two selected olive producing villages, Avia and Coryfasi. The discussion of current events is based on purposive sampling undertaken in each village between July and October, 1988. Examination of the evolution of social organization of olive growing at the local level permits us to draw some instructive inferences about the nature of the problems experienced by olive growers in the past and how these may have influenced their decision-making process. In this respect I try to draw out the major contrasts between the two. In Avia, restructuring has been very slow, and relatively small farmers - who are market oriented - combine to produce their output streams through the medium of the cooperatives; while Coryfasi presents an instance of the case where intensive competition between the private and cooperative sectors has produced larger scale farms, an enhanced level

of cooperative organization, and the continuation of a strongly entrenched role for merchant capital. The reason behind these developments are then explored.

3.1 Estimation of an Olive-Oil Supply Function

The main purpose of estimating the supply response of olive growers to changes in circumstances through time is to explain the behaviour of producers within the context of the specific socio-economic environment in which they operate. This is done by quantifying the main factors which determine the supply of the product and by specifying a functional form. Estimating a supply function has always been a particularly difficult research area, especially for agricultural products where considerable time lags in production need to be specifically taken into account. The difficulty arises because existing models provide very little information about what type of lag model to introduce. Because standard theory offers little assistance the issue is usually resolved through statistical means.

Estimating the response of olive-oil production to price changes has been the main focus of research interest.(1) The importance of supply elasticity relative to price has been connected with attempts to assess the effects of the CAP on the income of farmers and the supply of olive-oil on to the market.(2)

Two studies of Greek olive-oil production have used aggregate time series as a method of analysing supply. The variables used to explain the supply response were quite similar but the results obtained

differed significantly.(3) In Table 3.1 the price elasticity coefficients as estimated by M.Xekalakis for the period from 1950 up to Greece's accession to EEC, are presented. In the other study, carried out by D. Miliakos and published by the ABG, the short-run price elasticity of supply was found to be as low as between 0.38 to 0.43 for the period 1957-1975.

Table 3.1: **Estimates of Price Elasticity of the Greek Olive-Oil Supply Function, 1950-1975**

	Price Elasticity	Best Estimation
Medium to Long-Run	0.7 to 1.8	0.7 to 1.4
Short-Run	0.1 TO 1.3	0.6 to 0.7

Source: **M. Xekalakis, Unpublished Ph.D Thesis, 1979**

Before proceeding to formulate any model of olive-oil production my first concern was to try and explain why there was so much diversity between the two published estimates. The literature offers a number of potential explanations for the main differences. After lengthy consideration I chose to examine the following possibilities:

(i) choice of data series;

(ii) other data transformations;

(iii) functional forms;

(iv) lag structures;

(v) estimation methods;

(vi) diagnostic statistics.(4)

When attempting to standardise the models on a common basis for (i) to (iii) above it was found that the major differences between them did not persist. More specifically, equation (1) is similar to that estimated by D. Miliakos (1980). The data period was 1950-1988.

$$LY_t = \underset{(-2.37)}{-12.43} + \underset{(1.35)}{0.47LP_t} + \underset{(0.34)}{0.03U} + \underset{(3.66)}{1.6LK_t} \qquad (1)$$

$R^2 = 0.59$, D.W = 2.79, F = 17.049

All the variables were used in their logarithmic form LP_t is the annual producer price of olive-oil, LK_t shows the number of olive-trees between 1950-1988, and U is used in order to take account of the biennial nature of the crop.(5) Estimation by O.L.S gave the results presented in equation (1). The D.W. statistic shows the presence of serial correlation and LP_t, as well as U, are found to be insignificant as shown by the t-statistics presented in parentheses.

Next, three versions of M. Xekalakis's (1979) model were estimated. The results are presented in equations (2), (3) and (4).

$$LY_t = \underset{(-0.56)}{-5.18} + \underset{(0.96)}{0.36LP_t} + \underset{(0.95)}{0.03U} + \underset{(0.32)}{0.67LK_t} + \underset{(0.64)}{0.59LF_t}$$

$R^2 = 0.60$, D.W = 3, F = 12.99 (2)

$$LY_t = \underset{(-0.82)}{-5.4} + \underset{(1.02)}{0.33LP_t} + \underset{(1.9)}{0.16U} + \underset{(0.91)}{0.72LK_{t-4}} + \underset{(1.07)}{0.53LF_t}$$

$R^2 = 0.65$, D.W = 3.2, F = 13.79 (3)

and

$$LY_t = \underset{(-0.76)}{-5.2} + \underset{(0.99)}{0.33LP_t} + \underset{(1.03)}{0.71LK_{t-4}} + \underset{(0.86)}{0.53LF_t}$$

$R^2 = 0.60$, D.W = 3.3, F = 15.88 (4)

The variable LF_t added to the supply function was used by M Xekalakis to show past production capacity and is calculated by a four-year moving average of Y_t (annual olive-oil production). Also, LK_{t-4} is the four year lagged value of LK_t (the number of olive trees). Equation (2) shows collinearity problems between LF_t and LK_{t-4} - which has rendered the constant term insignificant. In equation (4) the U variable was dropped but the results did not change as collinearity problems persisted. Overall though, between the four equations the estimates for price elasticity of olive-oil supply are quite similar. I concluded therefore, that the main factor responsible for the diversity of their estimates was the choice of data series. On the one hand, D Miliakos (1980) used olive-oil supply figures (production + stock) provided by the Ministry of Agriculture as the endogenous variable. On the other, M Xekalakis used production figures estimated by the F.A.O. The discrepancies in the time series data for olive-oil production data, published by different sources have already been mentioned in Chapter One. A simple comparison of the data series on production raises serious questions about the reliability of any estimates received.(6) This is because econometric modelling has been defined as an attempt to match the hypothetical data generation process postulated by economic theory with the main properties of the observed data.(7)

I then developed an econometric relationship of aggregate olive-oil supply response to certain quantifiable variables. The problem was to identify and quantify the most important supply factors. These included economic, institutional and technological influences as well

as natural conditions. In analysing the olive growers pattern of behaviour I thought it best to assume that individual motivation is not strictly "economic" in the sense of profit maximization. In reality olive growing is a way of life governed by the existence of a complex webb of social relations between farmers, the land, the olive produce and the immediate environment.

In modelling the supply function the volume of output is not the only relevant dependent variable; the quality of this output is also important. Quality is usually reflected in the selling price of the produce.(8) The analysis has been based on aggregate time series data for the whole country during the period 1950-1988. This is clearly a disadvantage since there are geographical areas where any change in the capacity of the olive industry is limited by land or other environmental factors, and there are other areas where this change can take place as a result of variations in factors determining the relative size of the industry within the agricultural sector. Regional output, at administrative and provincial levels, responds differently to changes in factor and product prices - but as there is lack of sufficient continuous disaggregated data it can only be depicted for a relatively short-time period. Specifically, with respect to olive-oil output in Peloponnesos and Messenia, continuous data was only available between 1963-1984. A comparison between national, administrative and provincial levels of olive-oil production is made in Figure 3.1. Table 3.2 presents the number of trees and annual olive-oil production at national, administrative and provincial levels during 1963-1984. We may observe from Figure 3.1 that the pattern of output irregularity

between the three levels does not occur at the same frequency. This means that local, provincial or even administrative output fluctuations are not captured in the national figures - which points to the importance of using disaggregated data, not least for policy making purposes.

When considering the short-term supply of olive-oil as compared to other agricultural crops, I adopted the following reasoning. The olive grower remains in production so long as his revenue exceeds the variable costs - of which labour forms the major part. The farmer calculates the value of the time spent by himself and his family not only in terms of the level of prevailing agricultural wages , but also in terms of his opportunity cost (i.e. the existing alternative choices for employment). Evidence from different olive producing regions of the country confirms that this is a reasonable assumption.(9) Specifically, on some Greek islands (e.g. Keklades and Lesbos) farmers can easily withdraw their labour and seek out employment opportunities in the expanding tourist industry or even as sailors. At the same time, growers who live in remote and disadvantaged areas, still continue in olive-oil production as it is their only source of cash income. In this case, migration is the only real alternative. It appears therefore that the short-term supply function is not simply inelastic. It is more inelastic with respect to falling than to rising prices of olive-oil. Even though prices may be falling, the olive tree will continue to yield some fruit and the olive grower will presumably wish to continue to collect it.

Other variable inputs in the short-run include fertilizers, pesticides and insecticides. As labour cost is the largest single component of total production cost and migration has resulted in increased wages, it is rather improbable that high olive-oil prices can stimulate intensive harvesting and consequently increase the amount of olive-oil supplied.(10) What tends to happen when there is a shortage of labour or when labour costs are "too" high, is that the cultivator assisted by his family will collect the produce himself. This will involve a longer time period which directly affects the quality of the produce (i.e. the olive-oil produced will be of an inferior quality). Given the usual seven year period which intervenes between planting the olive trees and the start of their fruit-bearing age, time is a very important variable between the potential output over the long-run, and the actual output in the short-run. The actual output is dependent on a mix of factors some under the farmer's control such as the variable inputs, and some factors beyond the farmer's control like weather and crop disease. The short-run is here taken to be a period of between one to seven years. On the other hand, potential output is dependent on factors such as the number of trees planted, the state of technology, structural conditions and institutional changes.

The number of trees is a major factor behind long-run output and is related to the relative profitability of the olive tree compared with other crops (especially fruits and seed-oils). Although such alternatives might be more profitable than olive trees the psychological attachment of the olive growers to olive cultivation means that the number of olive trees is unlikely to be reduced (they

will not grub them out). What will be affected is future planting. During the 1950's - after the Second World War and the Civil War, a considerable number of trees were planted.(11) These trees came into production during the 1960's and this explains the fact that the greater rate of increase in olive-oil production occurred then.(12) Table 3.3 presents the number of newly planted trees in Greece between 1972-1987.

Table 3.3 **Number of Newly Planted Olive Trees, 1972-1987**

Year	Number	Year	Number
1972	1,522,355	1980	563,317
1973	1,187,036	1981	565,000
1974	1,285,000	1982	335,000
1975	1,311,060	1983	550,000
1976	1,092,160	1984	360,000
1977	718,000	1985	410,000
1978	591,450	1986	600,000
1979	675,500	1987	200,000

Source: **Ministry of Agriculture and N.S.S.G, 1988**

We can observe from Table 3.3 that the number of newly planted trees has been in decline since 1976. Furthermore, during the 1980's decade fires in the summer months have destroyed hundreds of hectares planted with olive-trees.(13) These trees have not been replanted as yet, so in future the annual rate of change of olive-oil production will actually be negative, which coincidently complies with EEC directives concerning the restriction of olive-oil production in the member-States.(14) On the other hand, the productivity of the olive trees as measured by yield per tree is another important long-run

variable. Yields are directly related to the alternate bearing cycle of the olive-tree and, as explained in Chapter One, are dependent upon certain environmental and soil conditions. These conditions can, of course, be influenced by the utilization of fertilizers, irrigation projects, the deployment of new olive-tree varieties and pruning which extends the productive life of the crop.

Another important long-run variable is technology which basically encompasses the mechanization of harvesting and pruning in order to reduce labour requirements (and therefore costs) during the production process. Technology also refers to insect control and new methods of olive-oil extraction from the olive fruit. The new techniques introduced in olive growing aim to increase the quantities of olive-oil produced and so improve quality. If replanting of olive groves was allowed on a nationwide basis then, given the new techniques, larger size and more productive (i.e more irrigated) groves would be favoured. In fact I consider the size of olive farms to be a long-run structural factor which is affected by policy measures such as the availability of non-farm employment, the possibility of acquiring loans, and the provision of information (technical or economic) through the olive research institutes and the media. After trying to take these factors into account I undertook an estimation of the Greek olive-oil supply function for the period 1950-88.

3.2 An Estimation of the Greek Olive-Oil Supply Function, 1950-1988

3.2.1 The Data

Y_t denotes the annual production of olive-oil over 1950-1988. The series has been extracted from the F.A.O data using various years of publication to ensure smoothing and continuity. Figure 3.2 shows the time series of Y_t for the period 1950-1988. We may observe a strong trend line from the data and marked irregularity in the production of olive-oil. This, of course, is only to be expected given the alternating production pattern of the crop as well as weather vicissitude and other natural conditions which influence agricultural production. A similar picture emerges when, in Figure 3.3 the logarithmic form of Y_t is graphed against time. Figures 3.4 and 3.5 graph the average annual real price of olive-oil and the graph of the logarithm. As expected the two equivalent graphs present us with similar patterns.

Next, in order to find the annual growth of olive-oil production for the period an O.L.S estimation was performed. The first estimation gave:

$$Y_t = \underset{(6.3)}{96.4} + \underset{(8.3)}{5.5}\ TIME \qquad (5)$$

$$R^2 = 0.65,\ D.W. = 2.84$$

Re-estimation by the Cochrane-Orcutt procedure to take care of first order auto correlation produced the following:(15)

$$Y_t = \underset{(10.57)}{100.7} + \underset{(12.9)}{5.3\ TIME} \qquad (6)$$

D.W. = 1.7

The compound rate of growth of olive-oil production during the same time period was calculated at 5%.(16) So olive-oil production increased on average by approximately 5,300 tonnes a year. Table 3.4(a) presents the data used in estimating the Greek olive-oil supply function, 1950-1988.

3.2.2 Specification of the Model and of the Variables Used

All variables were used in their logarithmic form. It is assumed that olive-oil production in year t, is a function of producer price, LP_t capital stock, LK_t, and production of the previous year LY_{t-1}. In detail the variables used were:

$$LY_t = f\ (C,\ LK_t,\ LK_{t-a},\ LP_t,\ LP_{t-1},\ LY_{t-1},\ U,\ TIME)$$

(a) Production of olive-Oil, LY_t, on an annual year-by-year basis for 1950-1988 was given in thousands of tons. The data source was the F.A.O. As actual production was used, an extra explanatory variable was added to the model, LY_{t-1}, to allow for annual fluctuations.(17)

(b) Producer price for olive-oil, LP_t, during 1950-1988. We had a choice between two price series here. We could have used the average weighted price received by the farmer during the marketing year and estimated by the Ministry of Agriculture. In this estimation, the producer prices prevailing in the main producing centres of Greece were taken into account. Also, the quantities of olive-oil produced in each area were used as weights.(18) On the other hand, we could have used the intervention price of olive-oil as fixed by the Government each year - just before the beginning of the production period - for a certain quality of olive-oil. This institutional price is the minimum price the farmer can obtain for his product.

After reflection I decided to use the average weighted price as estimated by the Ministry of Agriculture for 1950-1980.(19) After then, the price fixed by the Government and Eleourgiki has been used; this exceeds the intervention price set by the EEC and theoretically, is the minimum price received by the farmer for the sale of the product.(20) Furthermore, the relative producer price has been used i.e. the producer price deflated by the Retail Price Index, with a base of 1974 = 100. The price of the previous period LP_{t-1} was also deployed as an explanatory variable in the sense that the cultivator would probably take extra care implying that more time and effort is devoted to the crop for this year's production if the price of the previous year was considered favourable.

(c) Capital stock, LK_{t-1}. For the capital stock the number of olive trees recorded by the NSSG for olive-oil production is used. Several lagged forms of LK_t are used given the gestation period of the olive tree. From the time of planting until the yield, there is usually a period of 7 years. Of course, recently - but not to a great extent - this period has been reduced to 4 or even 3 years.(21) So various lagged values, LK_{t-3}, LK_{t-4} and LK_{t-7} have been used.

(d) A constant term, C, has been used, since part of the production is self-consumed (by the producers themselves).(22)

(e) The variable LY_{t-1} was used to take care of the biennial bearing cycle of the olive-tree which is, of course, related to its physiology. Also, a dummy variable U, was used for the same purpose taking the values 1 for the "bad" years and 0 for "good" years. U proved insignificant however and was soon dropped.

(f) TIME was used to take account of technological improvements (described in Chapter One).

3.2.3 The Results

The estimation of the model was by the Ordinary Least Square (O.L.S) method. In Table 3.4(b) the results are presented. The first equation, where all variables are present, gave a set of badly determined estimates which indicated the presence of collinearity.

This problem can be solved by reducing the dimensionality of the parameter space. Even though it is not always valid to assume that a group of badly determined estimates indicates the present of collinearity (rather than an omitted variable bias), here this is indeed the case.[23] The second equation, where TIME is dropped exhibits a large change in the constant term (self consumption) and an increase in the t-statistic; this suggests that there was a severe collinearity problem between TIME and other trend variables such as LK_{t-1}. The coefficients of the other parameters remained insignificant apart form LY_{t-1}, while the coefficient of LK_t had the wrong sign. Next, various forms were tried in order to establish the lag structure of the model. Equation seven gave a reasonable fit (ie. $R^2 = 0.72$), but the price coefficients were still insignificant indicating some collinearity among them.

We can also observe from Table 3.4(b) that different lags of LK_t were introduced and, as a result, the sample size was contracted by up to seven observations. Equations twelve and fourteen seem to perform best; the fit of equation fourteen is a little better ($R^2 = 0.688$) of the two. Also, the F-test of equation fourteen is $F(3,28) = 20.6$ compared with 19.6 in equation twelve. So, the following equation was selected for describing the best data-generation process.

$$\begin{array}{lccccc} LY_t = & -18.6 & + & 0.55LP_t & + & 2.4LK_{t-7} \quad -0.53LY_{t-1} \\ & (-4.4) & & (1.9) & & (6.0) \qquad (-3.5) \end{array}$$

$$D.W = 1.65,\ F(3,28) = 20.6,\ R^2 = 0.688 \qquad (7)$$

As a lagged dependent variable is present, the Durbin-Watson test is not valid for detecting the presence of first-order autocorrelation. The Durbin's h-test was calculated instead.

$$h = \hat{p}\sqrt{\frac{n}{(1-n)\ \hat{V}(\hat{a}_1)}}$$

where $\hat{p}$ is the least squares estimate of p based on the O.L.S residuals from the fitted regression, and

$$\hat{p} = \frac{\sum_{t=2}^{n} e_t e_{t-1}}{\sum_{t=2}^{n} e^2_{t-1}}$$

$V(a_1)$ is the estimated variance of the O.L.S estimate of a_1, which, in this case, is -0.53. The value of h is found to be 2.56. If we use a 1% test against the one-sided alternative of positive autocorrelation, the acceptance region for the null hypothesis is $h<1.96$. So, in our case, the hypothesis of no autocorrelation has to be rejected. Next, equation (7) is re-estimated by the Cochrane Orcutt iterative technique for 1st order serial correlation. Thus, the final form of equation (7) is given below:

$$\underset{}{LY_t} = \underset{(-4.9)}{-23.76} + \underset{(2.16)}{0.69LP_t} + \underset{(6.8)}{3.0LK_{t-7}} - \underset{(-6.47)}{0.73LY_{t-1}}$$

$$D.W = 1.99,\ F(3,27) = 26.25,\ R^2 = 0.688 \qquad (8)$$

The short-run elasticity of olive-oil supply was found to range between 0.36 - 0.69. This means that a 10% increase in producer price will cause, on average, a 5% increase in olive-oil supply. Therefore

the short-run price elasticity of supply turns out to be - as expected - inelastic.

The long-run price elasticity of olive-oil supply on the other hand, ranged between 0.24 - 0.39. A 10% increase in producer price will cause a long-run increase, ceteris paribus, of 2.4-3.9% of olive-oil output. So, while in the short-run output is more sensitive to factors beyond the farmer's control (such as crop disease or natural destruction) than price change, in the long-run the supply of olive-oil is highly price inelastic. Furthermore, according to the results which I have obtained, the most decisive factor in determining olive-oil output turns out to be the number of trees. What equation (8) shows is that a 10% increase in the number of trees seven years ago will cause a 30% increase in olive-oil output. This is precisely the reason why the task of olive-tree registration has been undertaken in the context of the C.A.P, so as to control better the expansion of olive-oil production.(24)

It therefore seems that the natural conditions and the historical development of olive cultivation have decisively shaped the organization of olive production in relation to the socio-economic environment in which the production process takes place, and seem the most effective constraints. But on the other hand, if restructuring results in the domination of large scale, more cost-conscious cultivation patterns, and olive growing ceases to be a monoculture in several remote rural areas, then farmers will turn to the cultivation of more profitable crops in the absence of any future EEC price support

mechanism and under constant demand conditions. As a result, olive growing will be limited to the larger plantations under permanent irrigation schemes and deploying a more mechanized mode of operation.

We may conclude that this modelling exercise shows that the producer price is not a major determinant of olive-oil supply. It is the capital stock in the shape of the number of trees which is the more decisive influence. In this respect the supply function may be considered to be a first step on the road towards explaining the decision making process of cultivators. Clearly their behaviour is not determined solely by purely economic variables but is also greatly affected by past and present social and institutional factors. Furthermore, these factors tend to be concealed in that they will not readily show up in the standard forms of expression. After taking this into account I decided to investigate how such factors have interacted over time through a case study of two olive producing villages situated in a major agricultural province of Greece, that of Messenia.

3.3 The Province of Messenia

Peloponnesos is a large administrative unit which contributes around a quarter of the country's total olive-oil production. In 1987-1988 olive-oil production touched 67,800 tonnes which is some 28% of the national total. Cooperatives accounted for 40,800 tonnes, (or 61%), indicating that the movement is strongly represented. Peloponnesos is divided into seven provinces. The province of Messenia is the most important as far as the volume and sales value of olive-oil

production are concerned.(25) In 1988 production was estimated at 25,000 tonnes. The sub-regional distribution of production is presented in Table 3.5.

Table 3.5 **Sub-Regional Distribution of Olive-Oil Production in Messenia, 1988 (in tonnes)**

Counties	Amount	%
Trifylia	11,000	44
Calamata	4,500	18
Pylia	2,500	10
Messeni	7,000	28
Provincial Total	25,000	100

Source: Agricultural Institute of the Province of Messenia, 1988

Messenia is one of the oldest olive growing regions in the country. The olive-tree and its cultivation have been the main source of income for its inhabitants for many centuries. A report by Zaccaria Bembo, the local governor of Messenia in 1712, gives some interesting information of olive-oil production and marketing in a period when the province was occupied by Venice. His report illustrates aspects of the agricultural policy and trade between the Venitians and their Greek colonies.(26)

Between 1204-1797 A.D. the Venitians occupied various parts of Greece and gave special attention to olive growing and to vines. The olive-oil produced in the Greek colonies formed an important element of

trade, manufacturing and consumption in the life of metropolitan Venice. The province of Messenia had been a Venetian colony between 1206-1500 A.D. When the Venetians occupied Peloponnesos for the second time, 1685-1688, by defeating the Turks, they replanted olive trees throughout Messenia, in 1693.(27) Towards the end of their- thirty year occupation, in 1712, the local and provincial governors estimated the average annual olive-oil production of the province according to the orders received from the centre. The reports can be found in the collection "Proveditori Sopra Olii" in the Archives of the Venetian State.(28)

In his report, Bembo, estimated olive-oil production for 1711-1712 at 7,000 barrels.(29) It is not clear how he arrived at this number as he does not state the exact amount for 1712 or 1713. It appears however, that he expected a larger production for 1713. So, he added the two years together and divided by two. That was a common estimation method, also used by Vicenso Palta, the Governor of the province of Lakonia. Palta wrote: "300 barrels were produced in 1711-1712 and 5,800 in 1712-1713, so the average production is 3,050 barrels of olive-oil".(30) Apart from production figures Bembo reminds us of the monopoly position and colonial behaviour of the Venetian State towards their Messenian province. Out of the 7,000 barrels produced, 5,000 were destined for export to the metropolis: there olive-oil was used for re-export, consumption and certain industrial uses (in the soap and wool industries). The Messenian farmers were able to keep only 600 barrels for self-consumption, that is less than 1/10 of the produce. The report also mentions that between 1693-1697, the olive

trees suffered frost damage which continued to affect production two decades later. Bembo was, of course, aware of the biennial nature of the crop. Evidence on how strongly this phenomenon could affect production is supplied in the production figures given by Palta for 1711-1712 and 1712-1713. There is also reference to the importance of the merchant ship "Marciliana" for the Venetian trade in the Adriatica, Ionion and Aegean Seas. That ship specialised in the olive-oil trade. Names like "Cottoni", "Foresti" and "Giatro", show that Greek merchants also took part in the trade of olive-oil between Messenia and Venice. Indeed, Greek merchants gradually came to play a very important role, especially in the sea and over-land trade. For instance, by the end of the eighteenth century, Greek merchants were the important middle-men in the exports of oil, corn and other agricultural produce, while they had virtually monopolised the illegal wheat trade of the western part of the Ottoman Empire.(31) Bembo also mentioned an increase in price between October 1711 and June 1712 from 5 reals to 6.1/2 reals. He points out that in 1712, the amount exported to the metropolis would exceed 5,000 barrels because of the price increase. He expected people would buy olive-oil from the surrounding areas and sell it to the merchant ships bound for Venice. There was only a cash payment, incurred for storage payable prior to the olive-oil being boarded and an export tariff of 4% on the current price of the produce. The significance of this report lies in the fact that the natural constraints and historical conditions (merchant capital domination) referred to, have been factors directly impinging on the economic development of olive growing to this day.

In 1821 the War of Independence against the Turks started from the province of Messenia. It lasted for six years, during which most of the agricultural production was apparently destroyed.(32) After the War, Peloponnesos was the only area of the newly created State where small landholdings prevailed from relatively early on.(33) This happened as most of the territory after the Turkish had left was declared "National Land" and was cultivated by the peasants. The low level of productive forces, the lack of State support and the dominance of merchant capital in the rural regions constrained the development of olive growing in the province.(34) Despite these unfavourable circumstances, Messenia retained its position as one of the major olive producing regions of the country.(35) In recent years, it comes third in importance in olive-oil production at the national level behind Lesbos with 10.9 million olive trees, and Crete with 8.7 million trees. In Messenia 10.1% of the country's olive groves and 8% of the total number of olive trees are located. Olive groves make up 97.8% of all rural farm cultivation and the number of olive trees accounts for 83.4% of the total number of fruit trees. In 1982, employment in fruit tree cultivation in the province stood at 35,316. This labour was distributed in the different zonal regions as follows:(36)

- The Plains : 18,963 or 53.7%;
- Semi - mountainous areas : 10,686 or 30.3%;
- Mountainous areas : 5,667 or 16%.

According to the 1981/82 Census the total amount of labour in agriculture was 47,600 people. They were distributed as follows:

- Urban areas : 1,720 or 3.6%;
- Semi-urban areas : 5,280 or 11%%;
- Rural areas : 40,660 or 85.4%.

The total active population engaged in agriculture in the province is 55.6% which is well above the country average of 26%.(37) These figures clearly show the dependence of the area on the rural sector. Production of olive-oil in Messenia can be seen in Table 3.2. It ranged from 24,612.6 tonnes in 1963 to 31,035.2 tonnes in 1984. The highest and lowest limits were achieved in the crop years 1983 (47,026.6 tonnes) and 1969 (19,236.6 tonnes) respectively. These fluctuations in production reflect the biennial cycle of the crop and also natural destruction (by fires or by frost). Furthermore, variations in olive-oil production occur at totally different frequencies between local, provincial and national levels. In this respect, the study of a particular locality combines unique features with more general socio-economic conditions prevailing through time.

3.3.1 The Village of Avia

Avia can be described as lying in a geographically transitional zone between the plains of Messenia and the mountains. Its most important agricultural characteristic is its total lack of irrigation capacity - thus making olive cultivation a monocultural activity. The village itself is located some 30 km southwest of Calamata, the capital of the province. Administratively it is one of sixty villages belonging to the county of Calamata. The average production of olive-

oil in the county totals some 4,500 tonnes.(38) The village is sited along the coast and during the summer season becomes something of a tourist resort (See Map II). Tourism started to flourish in the area from the mid-1970's and concerns Greek as well as foreign visitors. Some of the village's five hundred inhabitants therefore engage in seasonal jobs generated by tourism. In these cases, agriculture is only a supplementary source of income.(39)

Two hundred and four households engage in olive cultivation. They are all members of the village cooperative which exclusively serves members olive growers and operates an oil-mill and a packing unit for the produce. The cooperative is also responsible for marketing and distributing the olive-oil of family-managed olive farms.(40)

The main distinctive feature of this village lies in the fact that the "old" and the "new" combine together in a complex way. On the one hand, we can observe traditional olive growing activity which not only survives but has been strengthened through the cooperation of the olive growers in the village. On the other hand there is a limited- but nevertheless dynamic - expansion of tourism which has began to transform the village's outlook and has created a class of local businessmen quite separate from the farmers; it is they who form a growing part of demand for locally produced and packaged olive-oil in order to satisfy the consumption requirement of their customers.

3.3.1a Demography and Land Tenure

In the 1963 Census four hundred and thirty-six people were counted as inhabitants of the village. By 1974 the population had been reduced to 324. However, migration from Avia was not simply a phenomenon of the 1960's alone. Already at the beginning of the twentieth century many villagers had moved away - mainly to the United States. It has not been possible to establish the exact numbers of emigrants as records are not kept at the Kinotita.(41) After 1915 the Greek towns were the main attraction, more especially (and to an increasing degree) Athens itself. The difference in average living conditions between Athens and Avia was obviously very considerable. Until the early 1970's, the village was not connected up to electricity, waterworks or even a radio wavelength.(42) The migrants appear usually to have attained relatively good jobs in Athens. They became policemen, merchants or found work in offices. Most could afford to spend a few weeks of their holiday in their former home at Avia. This success has sometimes been portrayed as forming a distinctive trait of the "typical" Greek farmer. Above all they are characterised as being "survivors". However, the rather frequent occurence of job opportunities for villagers in the urban centres can be explained through their involvement with patronage politics.(43) Indeed, from very early on, a belief was implanted within the village community - by political figures trying to win votes - that the securing of a political "protector" was a necessity for survival and advancement. To this day there exist deep political divisions within

villagers originating from as far back as the Second World War and the subsequent Civil War of 1948.

Until the mid 1970's the oldest of the farmers estimated that about one-third of the total acreage suitable for cultivation had been abandoned. This can be explained by looking at the farming unit in relation to the available labour force. Most agricultural units in the village were originally based on two corner-stones: olive growing and fishing. When the market economy began to penetrate from around the beginning of this century, the poorest of the cultivators reacted by migration: the younger generation especially moved away as working conditions in the village were hard and offered few prospects of a better life.(44) As the migration process persisted its consequences began to be felt. The older generation passed the land to their heirs - many of whom lived away, either in Athens or abroad, and they had little interest in continuing to cultivate. Land was neglected and left to fallow - which was virtually costless given the absence of a land tax. Further, the process of the concentration of land into large holdings was slow. The migrants were not able to easily sell off their holdings because in the village itself there were few young families prepared to take on extra land; for the rest most of the farmers could not afford to increase their acreage given their limited ability to accumulate funds in a rural environment dominated by merchant capital, and with regard to the heavy handed role of the State at the time.(45)

The size of the holding was primarily determined by the amount of labour available. There was also the possibility that the owner of the land did not wish to sell because he hoped to return to the village at some point later on in life. Things were obviously different for those owners who had not moved away and were in direct touch with the local economy. They leased out their land to the few families who had access to wage labour.(46)

After 1974 the population trend has been reversed. The fall of the Colonels' junta and the rejuvenation of democracy in Greece contributed to the repatriation of many migrants. Also, older people from the urban centres started to return. One of the main reasons which contributed to this process was that since the end of the 1970's financial support was given to the farmers by the State - in the shape of releasing credit on favourable terms. By the summer of 1988 the population of Avia had reached five hundred.(47) Out of those farmer sampled, 15 (36%) had a history of migration - either abroad or in Athens. Production of olive-oil increased from 120 in 1973 to 420 tonnes in 1988. The number of olive trees, both old and newly planted, was counted at 52,694.(48)

In my sample survey, 42 farmers were drawn from the Cooperative list of 204. Criteria for representativeness of the sample were based on land size of the olive farms, and on methods and techniques of production i.e. to what extent the cultivators had adopted or experimented with new techniques of pruning and harvesting. Another criterion for selecting this sample was whether olive growing provided

the main source of income for the cultivators. My choice of these criteria was influenced by the belief that they underlie important socio-economic processes which have brought about the current state of affairs.

As far as the fragmentation of the land is concerned Avia proved to be no exception to the national situation.(49) Sixteen of the holdings consist of seven separate strips of land - most of which are less than one acre each and situated at quite some distance from each other. A simple comparison of land structure between the sample survey, provincial figures and national averages is presented in Table 3.6. We can observe that there has been some concentration of land such that the percentage of landholdings of more than six hectares is higher than the corresponding figure for either the province or the national average. A similar result is obtained for the category of landholdings between 3-6 hectares. Also, the small landholdings i.e., those below 2.9 hectares, lie considerably below that of the province and the national average. The main difference between the three levels though is that in Avia the middle range land-size is predominant as shown up in the sample. As already mentioned the sample was chosen in order to portray the land structure of the village's olive farms, so in that respect it is representative. However, we can also observe that the middle range size of holding is quite close to the lower range at the provincial level. Given that these figures are derived from a 1982 survey, it seems to me that under the restructuring which has taken place in recent years, 1982-1989 - and in the context of the EEC

directive about early retirement - the middle range of olive farms will by now have become predominant at the provincial level.(50)

3.3.1b Mechanization and the Labour Process

The lack of irrigation in the village permits only dry groves to be cultivated and this means lower production per hectare compared with areas under irrigation.(51) Out of the nine olive producing groups of Kinotites in the province the M. Mandinies Kinotita (to which Avia belongs), produces 18 kgr of olives per tree and comes third in order of productivity with a group of Kinotites from Trifilia County first (at 35 kgr of olives per tree) and a group of Kinotites from Pylia County second (at 26kgr of olves per tree). The two counties with higher olive production per tree are generally under irrigation.(52) Despite this, the natural fertility of Avia's soil, the altitude and the favourable climatic conditions (very low risk of a frost damage) combine to obtain a good performance from the trees. The extraction ratio is one kgr of olive-oil from every five kgrs of olives, which is above the national average and the best of the province of Messenia. On a national scale, only the province of Lesbos with an extraction ratio one kgr of olive-oil from every 3.6 kgr of olives, and Crete with 1:4 or 1:3.6 olive-oil extraction ratios, exceed Avia's level of productivity.(53) The setting of the olive groves in the village is on average 8x8m or 8x9 m spacing and the slope of the soil (at 15-16%, on average) permits the use of machinery at the different stages of production.

In the years prior to the Second World War, the basic all-purpose tool in olive growing was the short-handled hoe used to weed the fields. In addition, a digging stick was used for planting new trees. Since the 1960's, a small plastic rake could be used for harvesting, but for the most part, harvesting has continued to be done by hand. Transport to the mill was either by donkey for small amounts and short distances, or by horse for large amounts and longer distances.(54)

Although first introduced in the 1930's, tractors did not become widespread in Messenia until after the Second World War, and they did not dominate field preparation in Avia until the late 1960's.(55) In July 1988, there were one hundred tractors with an average capacity of 65 hp. The equipment accompanying the tractors is fairly standard. The tractors are rubber-wheeled with hydraulic lifts, and ploughing is done with an adjustable chisel plough. A four-wheeled wagon can be added to transport fertilizers and pesticides to the fields. Most farmers own their own tractors; in the sample survey 33 did so. Others, with smaller holdings rent them from the olive-oil cooperative for only a modest rental payment.(56)

Greek agriculture nowadays relies on chemical fertilizers such as Nitrogenous, Potassium and Phosphorate: in 1983 2,033.2 thousand tonnes were used. Until the 1960's home-produced animal manure was used for this purpose.(57) In Avia, 90% of the 42 farmers surveyed said they used chemical fertilizers for their olive growing. They interchange between NH_4 fertilizer in one year and Potassium or Phosphorate in the next - on the advice of the Olive Research Institute of the province.

On average, and for an optimum crop, 10 kgr per tree is needed and these products are generally applied by hand.(58)

Two of the largest olive growers in the sample have experimented with mechanized harvesting. They used small mechanical devices called portable vibrating hooks, which can produce double the output of manual work. As these devices shake the branches of the tree the ripe olives fall and are caught by ground nets. The farmers said that the results were not satisfactory at that stage because the hooks leave a fair number of olives still on the tree. Also, since the olives hit the ground nets and remain there until picked, the quality can deteriorate (through a lack of humidity) and, as a consequence the acidity of olive-oil increases. This method of mechanizing the harvest is used to some extent in Crete because the most appropriate tree shape for such tools is the bushy type, which is often found on this island. These tools are usually applied in large fields as their use saves on labour. They are also designed and produced in Greece.(59)

As mentioned, not all households derive their main source of income from olive growing. In the 1988 sample, 26 (i.e. 62%) had olive growing as their main income source; 5 (i.e. 12%) were engaged in government jobs; and 9 (i.e. 22%) were involved with crafts and trade. Furthermore, 16 out of the 26 olive growers who had farming as their main profession relied on a State pension or on daily wage labour outside agriculture to supplement their income (such as: waiters, builders, fishermen and taxi-owners).

In a sample of 42 farmers, 38 mostly used hired labour - which, in turn formed the largest part of the cost of olive production. In my sample, labour costs constituted 55-57% of total production cost per stremma of olive cultivation. Seventy percent of that was accounted for by harvest labour. This is because most labour time is spent on harvesting since it is an activity still done by hand. Harvesting by hand is necessary in this area given the type of olive trees (non-irrigated) - which means that the olive fruit must be handled with special care in order to preserve quality. Expenditure on fertilizers formed about 15% of total production cost, while machinery consumed 9% of total cost. In 1988 the commission right of the oil-cooperative for processing the olives, was set at 10%, and this naturally must be added on to the production cost of olive-oil per stremma. Gross profit margins presented by the farmers, 8-14%, were small but this is consonant with the lack of irrigation in the area so that olive growing provides the only source of agricultural income for the villagers.

3.3.1c Marketing

The origins of the village oil-cooperative, called the "Olive-oil Cooperative of Avia", dates back to 1926, when 12 individuals decided to establish and operate an oil-mill. Within three years the cooperative had grown to 20 working members and, as a consequence, the private oil-mill which existed in the village had been forced to close down. During this early period olive-oil production in the village barely reached 23 tonnes.(60) With the development of improved methods of extraction and processing production steadily increased and quality

improved. In 1958 the oil-cooperative even managed to win a gold medal in a national competition for olive-oil quality; and indeed it is worth noting that for this competition samples were taken from all over the country.(61)

The members of the oil-cooperative manage their own farm affairs, but they jointly own the assets of the enterprise. To the outside world the cooperative is an independent legal entity managed through the standard principles of membership control. Each member has a right to vote and all fundamental questions of management are decided upon at meetings of the members. The "executives", who are olive growers themselves, are entrusted by the members to act on their behalf for a number of years and are fully responsible to the membership.(62) The distinctive feature of membership control is that decisions made by a collective body must be executed under the control of a single person who is responsible for running the day-to-day affairs of the cooperative. The management of the cooperative's routine daily operations is entrusted to its president who is chosen for a 5 year term by secret ballot at a members meeting. Presidential tasks include directing and administering the cooperative's production activity and maintaining all the financial records. The president deals on a daily basis with all the problems of production covering questions of loans, contracts and development plans. He also represents the cooperative in meetings with the State and with other outside authorities as and when needed.(63)

In 1983 the oil-cooperative commenced an upgrading and modernization programme by obtaining a part grant, part loan of 28 million dr (£103,700 at prevailing exchange rates) from the E.A.G.G.F via the Agricultural Bank of Greece. Fifty percent of this amount was given in the form of a subsidy under the terms of the C.A.P regulation concerning Greece's incorporation into the EEC. The remaining sum is to be paid back at a fixed rate of 14.5% p.a. Given the biennial nature of the crop, olive-oil production every second year has not been sufficient to cover the annual interest payments of the cooperative. In fact, interest on deferred payments rose to 22% by the A.B.G. Because of this, the commission right for olive-oil extraction which the cooperative charged its members since 1988 was 10% compared to 7-8% - which is the normal current charge in other oil-cooperatives. In the oil-mill eight people are employed for three months each year. Part of the loan was spent on building oil-banks with a total capacity of 320-350 tonnes. The members deposit their produce in the mill until a suitable buyer can be found - usually through the good offices of the cooperative.(64)

Production of olive-oil in 1988 in Avia was 420 tonnes, but in 1987 it was less than half this amount due to the alternate bearing cycle of the olive tree. In 1988 15.5% of the amount produced went into direct consumption by the farmers themselves. To be able to operate its packaging unit and receive Consumption Aid from the EEC - which was 104 dr/kgr in 1988 - the oil-cooperative has to package at least 60 tonnes of its produce in plastic bottles of 1 lt and 5 lt capacity.

Other channels of distribution include the "Second-Order Cooperative" situated at Calamata, which bought 126 tonnes in 1988 with the intention of exporting it to Italy. Another 230 tonnes were sold by auction to merchants - who act as mediators on behalf of the packers located mainly in the province. The olive residue which is left during the extraction process, some 970 tonnes, was sold to a private refinery at 4.01 dr/kgr - which was the State intervention price in 1988. The olive-oil was sold unpackaged at 340 dr/kgr, and in plastic bottles the price received was 362.5 dr/lt or 1,500 dr/5lt.(65)

We may conclude that Avia Village presents a case of development of Greek olive growing where relatively small market-oriented farmers produce through cooperation. Restructuring is taking place only very slowly due to entrenched socio-economic and cultural factors which impinge upon the decision making process of the farmers. This suggests that Avia Village represents with some accuracy the state of affairs in an important part of the olive growing sector on a national level.

3.3.2 The Village of Coryfasi

Coryfasi is rather atypical of Messenian villages in that it is relatively large and has many powerful landowners. However many of the village's agricultural problems may resonably be thought as being representative of Greece as a whole. It shares with other olive growing villages a familiar pattern of basic household structures; problems of adaptation relating to the introduction of mechanization; of trying to cope with the effects of changing government policy; and

possesses an important range of alternatives for the agricultural labour force. The feature which makes Coryfasi a representative case of olive cultivation in the province and the country is the big private element involved in olive production particularly and agricultural production in general.

Coryfasi is located on the Messenian plain some 70 km from the urban centre of Pylos - which in fact is the capital of Pylia County (See Map II). The County is divided administratively into 63 villages and in 1988 its total olive-oil production was 2,500 tonnes. The village is built on a hill, 70 m above sea level, and its population in 1988 was around 860 people.(66)

Coryfasi grows currants, vines and certain vegetables especially tomatoes and potatoes, but its main source of income is derived from olive growing. The area under olive cultivation is 550 ha, and the particular variety of the tree cultivated, Coroneiki, means that virtually all production is geared towards oil extraction. There is a further 3 hectares under olive cultivation where only edible olives are produced. In the context of the five year EEC plan for 1985-1990, in the last three years Coryfasians have ceased to cultivate currants on 50 hectares - in return for which the villagers received 40 million dr. compensation. The reason for this action has been the substantial reduction in the amount of Greek currants imported by Britain-as Cyprus, Morroco and Turkey have invaded the market and are able to supply a similar quality at lower prices.(67) In the whole county 420 hectares previously under currant cultivation have been diverted to

vegetables or have simply been left fallow. These events, together with the appearance of 3 hectares under oil-seed cultivation in another village of the county, Pisaskion, have begun to exert an ecological and even a political impact.

3.3.2a Demography

In 1940 1008 people were counted as inhabitants of Coryfasi.[68] By the time of the 1963 Population Census however, this had declined to 560 people and was clearly linked to out-migration by males. After 1974 this demographic trend was reversed and population has started to rise again. Today the figure is 860 people.[69] Although the direction of causality cannot be easily determined from these numbers, the reversal of the declining population trend coincided with a marked increase in the productive forces of the village. Specifically, by the late 1960's, nearly every family owned a tractor. Five private oil-mills operated in the village and greater competition may have spurred an improvement in the quality of the produce. Larger amounts of fertilizers and more appropriate methods of pruning and cropping were used which also helped to increase production. There was also the opening of a new road so that travel in and out was made far easier than before. As a result farmers could themselves sell their products in the nearby urban centres of Pylos and Calamata. These changes increased the demand for labour in the village and cut back the out-migration of men to the urban centres. But we must note that a number of very poor families continued to migrate. Education also contributed to the migration process.[70] In Coryfasi 6% of the

households sampled had a history of migration abroad or to the urban centres of Greece. If this is extended to the population as a whole, it suggests that there were 50-55 Coryfasians working abroad or in urban centres of the country during the summer of 1988.

3.3.2b Olive Growing and Land Tenure

In 1900 the land cultivated by olives occupied 150 hectares and the number of olive trees was counted at 30,000. Average production amounted to 72 tonnes of olive-oil. Proper outside marketing of the produce began around 1880 when the mill operating in the village started to employ horse power for the extraction of oil. In this way, larger quantities of olives could be processed and the small amount retained after self-consumption by the villagers, was also traded. In 1900, 90 ha out of the 150 ha belonged to four large landowners. More specifically, in 1900 olive groves occupied 150 hectares in the village corresponding to 30,000 olive trees with average annual production of 60 tonnes of olive-oil. Table 3.7 presents land distribution and the olive-oil produced by the four richest olive producers in the village.

Table 3.7: Land Distribution and Olive-Oil Produced in 1900; in Avia Village

Farmers	Area (ha)	Olive-Trees	Output (Kgr)	dr/Kgr	Revenue
Kalogeropoulos Dimitris	50	6,500	19,500	0.75	14,625
Panagis Elias	30	3,900	11,700	0.75	8,775
Vourlas Nikos	7	910	2,730	0.75	2,047
Kagelarios Dimitris	3	390	1,170	0.75	877.5

Source: Records kept at the Town Hall of Pylos, 1988

The average holding for the remainding 97 families of the village was 1.6 ha with 195 olive-trees and 600 kgr average olive-oil production. Their total revenues, about 450 dr, were a little more than half of Dimitris Kagelarios's gross revenues and he was the smallest landowner of the four.(71) The land owned by the big landlords was later passed on through inheritance to their sons and daughters; these transfers caused some degree of fragmentation and re-division of the larger plots into smaller units.(72)

Between 1900 and 1970 olive cultivation was expanded to 380 ha planted with 85,000 productive olive trees. Production increased to 200 tonnes.(73) Today olive-oil production in the village is 830 tonnes and occupies 550 ha. As may be observed from Table 3.8, Coryfasi has more large-holders and fewer small-holders than either the national average or the province of Messenia (on the results of the

1982 suvrey). This can be explained by looking at the process of social differentiation in the village when the market economy began to penetrate.

Coryfasi was - and still remains - one of the richest villages in Pylia County. The natural fertility of its soil, combined with irrigation, has greatly contributed towards the development of the productive forces in the village. As the market economy started to penetrate in the late 19th century, a significant degree property inequality inherited from the Ottoman era was already present. Four households (as mentioned) owned more than 50% of the land and the rest was divided among 97 families.(74) This was the starting point of a whole process of development of social-economic relations amongst the farmers. It appears that the smaller farmers could barely cover their maintenance even in the best years of production. In the majority of cases these farmers could not make ends meet without resorting to loans and seeking other types of employment. Every crop failure, as well as the implications arising from the alternate bearing of the olive tree, would hit the smaller farmers hard and, as commercialisation of production progressed, a large proportion were apparently unable to cope with the conditions created in the village; they therefore resorted to out-migration. Most of the migrants sold their land if-they had not already lost it to the merchant of the village who, in turn, sold it to the richer farmers. An ex-magistrate who was based in the area in the 1930's, informed me that at least 3 cases a month were taken to him by the merchant of the village who thus became responsible for creating a situation of landlessness. Such people had little

alternative than to migrate to the urban centres.(75) In this way the process of differentiation was further enchanced and a greater degree of concentration of production was achieved.

3.3.2c The Household and the Labour Process in Olive Growing

The household is a central institution in understanding the labour process of a Greek village. Usually the household is the organiser of labour among its own members. It also hires-in workers when needed and in turn often seeks off-farm or other farm employment to supplement the direct income gained from agriculture. Not all households are entirely dependent upon agriculture. In my sample 17% derived their income from crafts or trade, 70% from olive growing and 13% from currant cultivation and vines. Some people combine agriculture with other jobs, so the phenomenon of the worker-farmer is not unusual.(76) Women work in the olive farm alongside the men-just as they usually do throughout rural Greece. Olives are harvested from November to February and this is the season when most hired labour is required.

Ploughing and pruning take place later on in the year. The head of the household plays a key managerial role. He is responsible for purchasing the inputs - usually through the local cooperative, arranging for the hiring-in of labour and for the machinery used. The majority of households own a tractor for ploughing. Depending on the size of the crop and household labour force the household itself may supply labour for many of these tasks. Since only one-third or so of

the households have more than two adult people available for agricultural labour, every household hires in labour once in a while, and some rely on it.(77)

In a sample of 30 farmers, 22 (73%) used hired labour, while 8 (27%) used mostly or exclusively family labour. It became evident that when the farmers prepare crop budgets they automatically include the cost of labour even if they really use unpaid family labour.(78) It is hard therefore to judge just how "profitable" olive growing really is. Most figures supplied by farmers show very small profit margins. Overall, about 40-50% of the cost of olive growing (expressed in terms of money) goes to labour, 17% to fertilizers and other material inputs, 10% to machinery use and 25% to fund interest on loans, and tax.

Income depends chiefly on yields, which are highly variable because of the biennial nature of the crop, and also on the realised market price. Net income from a hectare was about 270 thousand dr. (in 1988 prices). With workers earning 4,800 dr for a day's work they are certainly better off than small farmers.(79) Because of the labour costs involved farmers nowadays do not perceive olive cultivation as being a very profitable pursuit.

3.3.2d Marketing

Coryfasian farmers grow olives for both direct consumption as well as for sale. Both the cooperative network and private merchants are

important for marketing. In the village there are four private oil-mills and one cooperative. The private mills produced 480 tonnes out of a total of 830 in 1988. The rest, some 350 tonnes, was produced by the oil cooperative. The private mills are owned by wealthy olive farmers while the cooperative started operating the oil-mill in 1984 with 68 small-farmer members.(80) Today it has 130 members and it processes olives for non-members as well. Farmers on the whole prefer, to take their produce to the cooperative because of the lower commission right they pay, (7%), compared with that charged by the private mills, (10%).(81)

In 1988 795 tonnes were marketed. Home consumption was 35 tonnes or 4% of the total, while approximately 64 tonnes of olive-oil were sold to friends and relatives of the farmers predominantly living in nearby urban centres. This amount then escaped the market route and so didn't enjoy Consumption Aid. Out of the remainder, 160 tonnes or 19% was marketed through the second-order cooperative based in the capital of the province, Calamata. The other 635 tonnes or 76% was sold to the private sector. Most of it was marketed through the local merchant.(82)

The village merchant has operated in this area since the 1950's. Before him, his father established the business in the 1920's. He accumulated capital by buying olive-oil from the village and the surrounding areas in order to be able to resell it later at a higher price. As farmers became dependent on him for loans for production and consumption, a tie or bond was formed and the merchant secured a

regular supply of olive-oil. Similar evidence has been found in Asia and Latin America.(83) The village merchant gained the upper-hand in the process of exchange of olive-oil for money in terms of the prices paid to the farmers. That was because small cultivators could find no other ready source to supply cash fertilizers, and tools. So the farmers had very little bargaining power in this exchange process. They were compelled to sell their produce soon after the harvest to the merchant - when prices were generally at their lowest level. In this manner they had little access to free markets and could not accumulate much cash even though the commercialisation of agriculture was well under way by this time. In many cases indebted farmers lost their property to the merchant, but instead of a proletarianization process taking place, the farmers preferred to migrate abroad, or go off to the urban centres especially to Athens.(84)

Today, even though cooperative organisation in the village is growing, most of the olive-oil production is still being marketed through the private wholesaler. Part of the reason is the close relationship which has been built up with some of the farmers over the years, and partly because of the involvement of the Agricultural Bank of Greece in any transaction which takes place through the cooperative network. The cooperatives pay the farmer by cheque which can only be encashed at the local branch of the A.B.G. The Bank calculates the farmer's indebtedness for inputs and services and deducts that from the value of the olive-oil.(85) So, transacting through the cooperative sector adds to the cost of the indebted farmer. In my sample, 8 farmers or 27% had a short or mid-term loan with the A.B.G. This is

one very good reason why farmers prefer the merchant who pays them promptly.

In an interview with the wholesaler it was established that he usually buys on account of a packer or a multinational (either Elais or Minerva). He is given a certain price range at which he can buy plus a 2-3% commission. The Agricultural Institutes' Officials situated in the province, suspect that it is a common practice among the merchants and the packers to state higher amounts of olive-oil purchased on the relevant documents than what they actually buy up. In this way, when the documents are submitted to the Agricultural Institute, the packers are paid higher Consumption Aid which they share with the merchants. This particular merchant however, (P. Tsaglis), has never been subject to check so no direct evidence can be found to substantiate these alleged malpractices.(86)

The oil-mills, the cooperative or the private owner, on the other hand, are expected to submit service receipts to the Agricultural Institute for each farmer. These state the exact amount of olive-oil produced so that the farmer can, in turn, claim Production Aid from the EEC through the Ministry of Agriculture (Y.D.A.G.E.P). In 1988 Production Aid amounted to 1/4 of the product's market value. The olive residue, which is retained by the oil-miller, is sold to the two refineries based in the province.(87)

In 1988, the refineries throughout Greece formed a cartel and fixed the price at half of what they paid in 1987. The reason for this was that the EEC imposed export quotas which created surpluses in the domestic market as most refiners found it unprofitable to export at a higher cost.(88) So the oil-millers were faced with a reduction in their revenues which they tried to pass on to the farmers by increasing commission rights as far as possible. This issue will be discussed further in Chapters Four and Seven of this Study.

3.3.3 Comparisons between the Two Villages

Olive growing plays a central role in each of the two villages. It is the single-most important cultivation in terms of area planted and value of sales.

Within each village the larger farmers tend to own a higher proportion of the better-quality land. For example, 55% of the land owned by the small farmers in Avia is not of the best quality as far as the natural fertility of the soil is concerned, and nor is the slope suitable for mechanization to be effectively applied; the corresponding figure for the larger farmers is only 25%. Likewise, in Coryfasi, 70% of the land of the large farmers is irrigated - which is of course the best quality land, whereas only 30% of the land of the small farmers is irrigated, and this naturally means lower production per hectare. Seven out of the fourteen larger farmers in Coryfasi have replanted their groves at distances of 6 x 8 which, in itself, allows for greater production per hectare of land. Only three out of the sixteen

smaller ones have been able to replant their groves at closer spacings than 8 x 9 m or 8 x 8 m - the norm for the area. In Avia only three out of the eleven have replanted their olive groves while none of the smaller farmers in the sample survey have managed to do this.

Traditional techniques of olive cultivation are broadly similar across the two villages. The only difference lies in harvesting where in Avia they pick the olives by hand because the groves are dry-cultivated and therefore more sensitive to handling, while in Coryfasi they beat the branches with wooden sticks so that the olives fall on to ground nets. This method (cudgelling) makes harvesting faster. Olive growing has witnessed the introduction of new techniques in harvesting, pruning, irrigation and the application of appropriate fertilizers. But such equipment is relatively expensive and since the State has cut subsidies on purchased inputs, farmers now have to incur the full cost. Therefore only the richest olive growers are able to follow the technical advice given to them by the Research Institute. There are in fact only two olive growers in Avia and six in Coryfasi which apply some of the new techniques.

Table 3.9 shows the number of olive growers in my sample, and their different sources of income in each village.

Table 3.9: **Number of Olive Growers and their General Sources of Income in Avia and Coryfasi**

	Main Income Source Derived from Olive Growing		Olive Growers who Earn Supplementary Income		Main Income Derived from Non-Farm Employment	
	Number	%	Number	%	Number	%
Avia	16	61	26	62	14	34
Coryfasi	12	57	21	70	5	17

Notes: **The sample in Avia Village consisted of 42 farmers while in Coryfasi Village, 30 farmers were considered.**

Source: **Sample Survey, Summer 1988.**

Unfortunately the figures presented cannot be compared with similar ones at the provincial and the national levels since no such surveys have been undertaken by the Official Services. Neither can I claim that they are fully representative of the two villages as a whole. Nevertheless, they confirm what is already known: a still substantial percentage of non-farmers (respectively 34 and 17 in the sample survey) derive income from agriculture and income from olive growing in particular. What this means is that during the development process non-farm employment opportunities have risen which has resulted in olive growing assuming the role of a supplementary income activity. It seems to me that this state of affairs poses a constraint upon the restructing of olive cultivation as those producers' decision making process only partially reflects the importance of economic variables (such as cost and prices) in the determination of their livelihood. We

can also observe from Table 3.9 that in both villages the number of olive growers who need to supplement their income by either off-farm or some other agricultural activity is relatively high, (62% and 70% respectively). This means that as olive growing, by its nature, is an activity which occupies the producers only a few months of each year, other activities can be also undertaken. On the other hand, this phenomenon impinges indirectly upon the profitability of the crop.

As far as marketing of the produce is concerned the cooperative form of organisation has surely deeper roots in Avia, where it recently started operating a packing unit as well as its oil-mill. But even though productive forces have developed, managerial skills seem to have lagged behind and in the summer of 1988, the cooperative was, in considerable debt to the A.B.G. However, in Coryfasi there is intensive competition between the cooperative (which is steadily gaining ground), and private capital as represented by the merchants who have dominated the marketing of the produce in the area from the beginning of this century. The cooperatives in both villages are mainly interested in marketing olive-oil and do not undertake the introducion of new methods of olive-growing through team cultivation which could, lower production costs. This is because even though the farmers realize that improved marketing would yield higher revenue, the majority have yet to be convinced that team cultivation - which mainly refers to mechanisation of harvesting and pruning - will retain the quality of the produce. Therefore, although they admit that the current level of labour costs result in smaller gross profit margins than might otherwise be the case, and agree that there is a need for

greater mechanisation, an active new agent is required - say the Olive Research Institute, to take up the implementation of more cost effective methods of production through the cooperative. This attitude of the olive growers can be partly explained by the fact that even though they expect a reasonable gross profit margin to be made from olive cultivation, they do not seek profit-maximization.

The two village cases presented here indicate two of the alternative lines of development in Greek olive growing. On the one hand, development can be attained through accumulation by larger farmers who are seeking to mechanize production (thus reducing their dependence on wage labour) while sustaining - as far as possible- quality the high of the produce. On the other hand, capitalist development can be attained by small market-oriented farmers through cooperation.

Conclusions

In this Chapter it has been argued that in the Post-War period price has not been the most important determinant of olive producers behaviour as a result of the influence of certain social, structural and institutional factors. It appears that recent tendencies which aim to transform olive growing in the direction of a more dynamic form of cultivation are bound to have a marked influence on the producers. This happens as cultivators will be increasingly impelled to adopt new and more cost effective methods involving mechanization in order to better market their produce in a free trade environment. Furthermore,

the absence of any national or CAP price support scheme will intensify competition and force many small growers to produce for self-consumption. One of the main reasons for this transformation is that olive-oil is used as an input by the Community's food processing industry. It is therefore important to keep its price as low as possible in order to satisfy the requirements of this industry. Furthermore, as will be contended in Chapter Seven, input cost is a determining factor for the survival of the processing part of the Greek olive industry.

The developments identified in our discussion of the experience of Avia and Coryfasi should not be seen as isolated phenomena, but rather as a microcosm of wider trends affecting the whole olive industry. However, the process of larger scale operation, the stronger presence of the cooperative organisation, and the adoption of modern techniques in olive-oil production, become clearer in the oil-milling part of the industry. Indeed as will be shown in Chapter Four the rurally based oil-milling has been revolutionized and has managed to double the output of olive-oil per hour of machine time.

REFERENCES

1. See, for example D Miliakos, The Olive Cultivation in Greece, EEC (Italy) and other countries on the Verge of Accession to the EEC, (Athens, 1980), and N. Leventi and M Sakelli, "Size, Fragmentation and Effectivity of Agricultural Plots", in Studies for the Agricultural Economy, No.6 (Athens, 1978).+

2. See M. Xekalakis, "Implications for the Greek Olive-Oil Market of adopting the C.A.P of European Economic Community", Unpublished Ph.D Thesis, University of Reading, 1979.

3. Cf D. Miliakos, 1980, op.cit and M Xekalakis, ibid.

4. See J. E. Davidson et al, "Econometric Modelling of the Aggregate Time Series Relationship between Consumers' Expenditure and Income in the United Kingdom", The Economic Journal, 88, 1978, pp.661-692.

5. The P_t series is obtained from the Ministry of Agriculture and Eleourgiki, the K_t series is obtained from the N.S.S.G, and the Y_t series from the F.A.O. The variable U is given the value 1 for "bad" production years and 0 for "good" production years.

6. Se Chapter One, Section 1.7 and Figure 1.13(a) and 1.13(b).

7. See J.E. Davidson, et al, 1978, op.cit

8. Different prices are attached to olive-oil according to its acidity level ie., the percentage of fatty acids per 100 gr of olive-oil. Up to 3^{o} of acidity the olive-oil is edible, above that it needs to be refined before it is suitable for human consumption.

9. Information obtained from E. Evagellou, Head of Department, Agricultural Bank of Greece, Department of Agro-Industry, Athens, 1988.

10. See Chapter One, Section 1.6 and Tables 1.7 and 1.8, where it is shown that labour cost is the highest input cost in olive cultivation.

11. N.S.S.G, Agricultural Production, 1950-1963, See also Table 3.4(a).

12. Ibid.

13. Information obtained from Ministry of Agriculture, Department of Forestry, 1988.

14. See "Restoring Equibilbrium on the Agricultural Markets", Green Europe, Commission of the European Communities, 1/88 p.10.

15. See D. Cochrane and G. Orcutt, "Application of Least Squares Regression to Relationships containing Autocorrelation Error Terms", Journal of the American Statistical Association, Vol. 44, 1949.

16. The compound rate of growth was estimated by:

$$Y = A\ e^{rt}$$

or $\log_e Y = \log A + rt$

where r is the compound rate, t is the number of years over which it is calculated, Y is the final year's value and A is the initial year's value.

17. These fluctuations reflect the biennial nature of the crop and LY_{t-1} was introduced in order to capture this.

18. Ministry of Agriculture, Department of Prices, 1988.

19. The average weighted price was closer to the market price which the farmers theoretically received for the sale of their produce. The intervention price was set for most of the Post-War period, below market price so the farmers would not sell to intervention unless they had to. So, their supply decision was not made on the basis of this price.

20. See Chapter Two, Section 2.3.

21. See G. Giametta, "Mechanization of the Harvest" Olivae, IIIrd Year, No. 13, 1986. Also see Chapter One, Section 1.4.

22. Self-consumed olive-oil is estimated at about 65,000 tonnes annually according to the Ministry of Agriculture which in 1988, (and according to the same source), represented 24% of olive-oil production.

23. When further variables were added to the model, like lagged values of P_t or k_t the collinearity problems persisted. See J.E. Davidson et al op.cit, for a detailed treatment of the problem.

24. See Commission Regulation (EEC) No. 586/88 of 2 March 1988, "Ammending Regulation (EEC) No. 2276/79 Laying Down Detailed Rules for the Drawing up of a Register of Olive Cultivation in the Member States Producing Olive-Oil", Official Journal of the European Communities, No. L.57/18, 3.3.1988.

25. N.S.S.G, Agricultural Production, Various Issues.

26. See Zaccaria Bembo's report, June 1912, in the Appendix to this Chapter.

27. Ibid.

28. See P. Topping, "The Production of Olive-Oil in the Venitian Messenia" in: N. Karabela, Messeniaka Grammata, (Calamata, 1981) pp33-35.+

29. One barrel of olive-oil is equal to 64.38 lt.

30. See P Topping, in N Karabela, 1981, op.cit. p.34.

31. See N. Mouzelis, Modern Greece : Facets of Underdevelopment, (London 1978) pp.9-10.

32. See N. Lihnos, The Olive Tree and its Cultivation+ (Athens, 1949).

33. See N. Mouzelis, 1978, op.cit. p.19.

34. This issue has been discussed in Chapter Two.

35. N.S.S.G, Agricultural Production, Various issues.

36. Derived from an I.C.A.P study on the province of Messenia in 1980.

37. N.S.S.G, Agriculture and Employment, 1987,.

38. Information received from the Agricultural Institute of the Province of Messenia, situated in Calamata, 1988.

39. Information obtained through discussion with the President of the village, Summer 1988.

40. Ibid.

41. Kinotita is the Greek word corresponding to an English parish.

42. Information obtained through discussion with the President of the Kinotita.

43. See N. Mouzelis, 1978, op.cit p.99. See also T. Shanin., (ed), Peasants and Peasant Society, (Harmondsworth, 1971).

44. Information obtained during fieldwork, 1988.

45. See Chapter 2, Section 2.3, on this point.

46. Information obtained through discussion with older farmers of Avia Village, Summer 1988.

47. Information obtained from records kept at the Kinotita, 1988.

48. Information obtained from the Agricultural Institute in Calamata, 1988.

49. See N. Leventi and M Sakelli, 1978, op.cit. It is also estimated by the N.S.S.G that each farmer owns on average 6 plots of agricultural land.

50. As mentioned in Chapter Two, until early 1990, about 66,000 farmers have taken early retirement, and a large percentage of them (well above 60%) are olive growers, Ministry of Agriculture, Department of Information, 1990.

51. See Chapter One, Section 1.3.

52. Information obtained from the Agricultural Institute of Messenia, 1988.

53. See Commission Regulation (EEC) No. 2304/88 of 26 July 1988, "Fixing the Yields of Olives and Olive-Oil in France and Greece for 1987/88 Marketing Year", in Official Journal of European Communities, No. L201/46, 27.7.1988.

54. Information obtained during fieldwork discussions, Summer 1988.

55. Information obtained from the Agricultural Institute of Messenia, 1988.

56. Information obtained from the President of the Oil-Cooperative of Avia, 1988.

57. Information obtained from the Agricultural Institute of Messenia, 1988.

58. Ibid.

59. Information obtained from the Ministry of Agriculture and Eleourgiki which has recently (1988) established a manufacturing firm in Heracleo, Crete, in order to supply olive growers with these and other devices for olive cultivation as well as equipment used in oil-milling. Eleourgiki : Department of Primary Production and Investment, 1989.

60. Information obtained from the President of the Village. Records for the exact production figures for the beginning of the century are not kept any longer.

61. Ibid.

62. Constitution of the "Olive-Oil cooperative of Avia", Avia, 1988.+

63. Ibid.

64. Information obtained from the President of the "Olive-Oil Cooperative of Avia", 1988.

65. From Records kept at the "Olive-Oil Cooperative of Avia", 1988.

66. Information obtained from the Agricultural Institute of Pylos, 1988.

67. Information obtained from the village Kinotita and the Agricultural Institute of Pylos, Summer, 1988.

68. Information obtained from records kept at the Town Hall of Pylos, Summer, 1988.

69. Town Hall of Pylos and Kinotita of Coryfasi, 1988.

70. Young people left the village to study in the urban centres and they did not return to the village as they settled in the cities (mainly Athens).

71. Table 3.7 was constructed from information obtained through Records kept at the Town Hall of Pylos. This is because Coryfasi, the largest village in the area, during 1900-1940 had been given the status of a "town" at the beginning of the century, so records were kept. Of course these Records are not continuous even though they are very detailed.

72. Information obtained through discussion with the President of the Village Coryfasi, 1988.

73. Information obtained from records kept at the Kinotita of the Village and Town Hall of Pylos, 1988.

74. Ibid.

75. The cases taken to the magistrate could involve minor debts totalling a few kgrs of olive-oil or a few hundred drs. Despite this modest sum merchants would press as hard as possible to obtain the loan back. So, quite often the farmers had to seel their property in order to repay only a very small amount of debt.

76. For a discussion of this phenomenon see S. V. Frauendorfer "Part-Time Farming : A Review of World Literature", World Agricultural Economics and Rural Sociology Abstracts, Vol 8, Part I, 1966.

77. Information obtained from the Kinotita of Coryfasi Village, 1988.

78. Farmers calculate their own labour using the agricultural wage rate they would earn if they worked elsewhere during this period (i.e. the opportunity cost).

79. These figures are calculated on the 1988 value of olive-oil production and wages (in current prices).

80. Information obtained from the "Olive-Oil Cooperative of Coryfasi", Records, 1988.

81. Even though the commission right of the cooperative is lower than that of the private ones, not all olive-growers extract their olive-oil there. The reason for this is that the members of the cooperative are served first and there are also capacity limitations as to how many more olives could be processed by the cooperative oil-mill.

82. Information obtained from the "Olive-Oil Cooperative of Coryfasi", Records, 1988.

83. See M. J. Rao "Interest rates in backward agriculture", Cambridge Journal of Economics 1980, Vol. 7, 159-167.

84. Information obtained through discussion with the President of the "Olive-Oil Cooperative of Coryfasi", 1988, and also from Records kept at the Kinotita and Town Hall of Pylos, 1988.

85. Information obtained through discussion with the local manager, Agricultural Bank of Greece, Calamata Branch, 1988.

86. Information obtained from the President of the "Olive-Oil Cooperative of Coryfasi", 1988.

87. Ibid.

88. Information obtained from C. Linardakis, the largest olive residue refiner in the province, situated in Calamata, 1988.

Table 3.2: Number of Trees and Annual Olive-Oil Production on National, Administrative and Provincial Levels, 1963-1984.

	Number of Trees (in thousand)			Amount of Olive-Oil[2]		
	Greece[1]	Peloponnesos	Messenia	Greece	Peloponnesos	Messenia
1963	74,500	25,081.2	7,005.9	69,000	66,927.5	24,612.6
1964	74,548	25,829.6	7,250.2	251,000	58,986.8	22,163.7
1965	75,378	26,633.6	7,581.1	141,000	60,204.8	19,255.2
1966	75,511	27,313.6	7,785.6	191,000	85,081.8	27,812.8
1967	76,287	27,880.0	8,119.2	180,000	61,746.6	21,564.2
1968	77,400	29,772.3	9,593.0	224,000	71,194.7	24,912.3
1969	79,119	29,101.5	8,697.0	228.000	43,071.7	19,236.6
1970	80,225	29,531.8	8,613.2	178,000	80,233.8	23,827.6
1971	81,024	30,314.3	8,961.7	190,000	59,565.0	24,781.4
1972	82,574	31,348.9	9,393.4	218,000	88,619.0	29,776.0
1973	83,545	31,439.6	9,311.6	255,000	77,990.2	28,843.2
1974	85,311	32,160.0	9,346.7	218,000	94,852.4	31,781.8
1975	86,159	32,419.6	9,602.0	288,000	92,377.2	38,495.0
1976	88,700	32,983.5	9,350.6	251,000	96,126.4	36,864.0
1977	91,300	33,468.0	10,264.3	254,000	97,917.4	32,944.8
1978	92,000	34,102.3	10,228.4	263,000	82,312.0	28,863.6
1979	92,700	34,833.2	10,402.1	228,000	98,841.0	34,819.8
1980	95,300	35,875.7	10,591.2	361,000	103,775.8	32,892.6
1981	95,865	36,859.5	11,160.2	272,000	120,753.4	43,530.8
1982	96,200	36,824.7	11,098.6	351,000	98,809.6	30,728.8
1983	96,750	37,549.8	11,286.4	317,000	121,117.0	47,026.6
1984	97,110	39,848.7	11,321.3	233,000	77,975.8	31,035.2

Notes:

1. The number of trees for Greece, refer to trees only for olive-oil production while for Peloponnesos and Messenia the total number of olive-trees is given.

2. The amount of olive-oil produced on national level is expressed in th.tons and is extracted from F.A.O data series. Production of Peloponnesos and Messenia is expressed in th.tonnes and is extracted from N.S.S.G. data series.

Sources: N.S.S.G, Agricultural Production, 1963-1984 and F.A.O

Table 3.4(a) Data used for the estimation of the Greek Olive Oil supply function (1950-1988)

	Y_t(in thousand tons)	P_t(dr)	R_t(dr)	K_t(th.trees)
1950	42	7.4	30.9	58100
1951	160	7.9	33.4	59000
1952	78	8.7	36.8	59500
1953	175	9.6	38.4	58655
1954	124	10.8	44.0	59506
1955	117	13.9	46.9	63753
1956	163	17.4	48.4	64123
1957	183	15.2	49.5	64493
1958	111	13.6	50.4	66492
1959	101	13.8	51.4	68141
1960	180	14.3	51.7	69183
1961	89	14.9	52.7	71032
1962	257	19.1	52.5	73063
1963	69	19.2	54.0	74500
1964	251	19.5	54.5	74548
1965	141	20.1	56.2	75378
1966	191	20.9	59.0	75511
1967	180	21.4	60.0	76287
1968	224	24.7	60.2	77400
1969	228	25.3	61.7	79119
1970	178	28.5	63.5	80225
1971	190	27.0	65.4	81024
1972	218	29.7	68.2	82574
1973	255	37.6	78.8	83545
1974	218	47.8	100.0	85311
1975	288	54.7	113.4	86159
1976	251	56.0	128.5	88700
1977	254	61.9	144.1	91300
1978	263	73.4	162.2	92000
1979	228	81.9	193.0	92700
1980	361	97.8	241.0	95300
1981	272	112.1	300.0	95865
1982	351	130.8	362.9	96200
1983	317	165.4	437.3	96750
1984	233	215.1	517.8	97110
1985	290	264.3	617.7	97520
1986	247	310.0	759.8	98120
1987	273	303.7	884.4	98320
1988	290	310.0	1003.8	103000

Notes: Y_t = annual production of Olive-Oil
P_t = annual average weighted price of olive-oil
R_t = Retail price index in constant 1974 prices, which has been used as the deflator for P_t.

Sources: Y_t series from F.A.O
P_t series from the Ministry of Agriculture and ELEOURGIKI
R_t series from the Ministry of Agriculture
K_t series from the National Statistical Service

Table 3.4(b): Results of the Greek Olive-Oil Supply Function 1950-1988

Dependent Variable: LY_t

	C	Lk_t	LK_{t-1}	LP_t	LP_{t-1}	LY_{t-1}	U	TIME	R^2
1.	20.6	-2.9	1.7	0.6	0.02	-0.51	0.06	0.05	0.75
	(0.84)*	(-0.99)	(0.6)	(1.28)	(0.04)	(-4.08)	(0.76)	(1.64)	
2.	-19.3	-1.3	3.74	0.39	0.009	-0.5	0.06		0.73
	(-4.05)	(-0.46)	(1.33)	(0.86)	(0.02)	(-3.81)	(0.78)		
3.	12.3		-0.4	0.49	0.1	-0.5	0.06	0.04	0.74
	(0.53)		(-0.19)	(1.09)	(0.2)	(-4.19)	(0.81)	(1.4)	
4.	12.2	-2.1	1.69		0.53	-0.53	0.07	0.04	0.74
	(0.5)	(-0.72)	(0.56)		(1.65)	(-4.2)	(0.99)	(1.34)	
5.	-19.4		2.45	0.36	0.05	-0.49	0.06		0.73
	(-4.14)		(5.84)	(0.81)	(0.01)	(-3.96)	(0.81)		
6.	-19.4	-0.95	3.41		0.37	-0.5	0.07		0.72
	(-4.09)	(-0.34)	(1.23)		(1.23)	(-4.03)	(0.95)		
7.	-19.8		2.49	0.42	-0.03	-0.49			0.72
	(-4.27)		(5.99)	(0.97)	(-0.05)	(-4.0)			

* The numbers in parentheses are t-statistics

Table 3.4(b): Results of the Greek Olive Oil Supply Function 1951-1988 (continued)

Dependent variable: LY_t

	C	LP_t	LP_{t-1}	Lk_{t-1}	LK_{t-3}	LK_{t-4}	LK_{t-7}	LY_{t-1}	R^2
8.	-19.8	0.42	-0.03	2.5				-0.49	0.72
	(-4.3)[1]	(0.96)	(-0.05)	(5.9)				(-4.0)	
9.	-19.7	0.4		2.48				-0.5	0.72
	(-4.68)	(1.57)		(6.39)				(-4.2)	
10.	-17.9	0.44			2.34			-0.5	0.68
	(-4.31)	(1.67)			(5.9)			(-3.6)	
11.	-17.4	0.48				2.28		-0.46	0.69
	(-4.31)	(1.8)				(5.92)		(-3.24)	
12.	-17.8		0.44			2.35		-0.55	0.67
	(-4.0)		(1.47)			(5.7)		(-3.71)	
13.	-17.2		0.48			2.29		-0.51	0.69
	(-4.0)		(1.64)			(5.8)		(-3.46)	
14.	-18.6	0.55					2.43	-0.53	0.68
	(-4.4)	(1.93)					(6.0)	(-3.56)	
15.	-18.6		0.57				2.46	-0.58	0.68
	(-4.3)		(1.75)				(6.0)	(-3.7)	

[1]The numbers in parentheses are t-statistics.

Table 3.6: **Landholding in Avia in the 1980's compared with Messenia and with the national average**

Number of Holders in each category

Holding Size (ha)	Sample (1988) No.	%	Messenia(1982) No.	%	Greece (1984) No.	%
<2.9	9	21.6	18000	45	254,800	61
3 - 6	22	52.3	16000	40	81,360	20
>6	11	26.1	6000	15	80,040	19

Sources:

Messenia: Statistical Office 1982 Survey

National: Ministry of Agriculture, 1984

Sample: Field work in the Summer of 1988

Table 3.8: **Landholding in Coryfasi in the 1980's compared with Messenia and with the national average**

Number of Holders in each Category

Holding Size (ha)	Co-op Members (1988)		Sample (1988)		Messenia (1982)		Greece (1984)	
	No.	%	No.	%	No.	%	No.	%
<2.9	26	20	6	20	18000	45	254,800	61
3 - 6	43	33	10	33	16000	40	81,360	20
>6	61	47	14	47	6000	15	80,040	19

Sources:

Coryfasi: Cooperative list of landholders (1988)

Messenia: Statistical Office, 1982 survey

National: Ministry of Agriculture, 1984

Sample: Field work in the Summer of 1988

Figure 3.1: Olive-Oil Production in Greece, Peloponnesos and Messenia

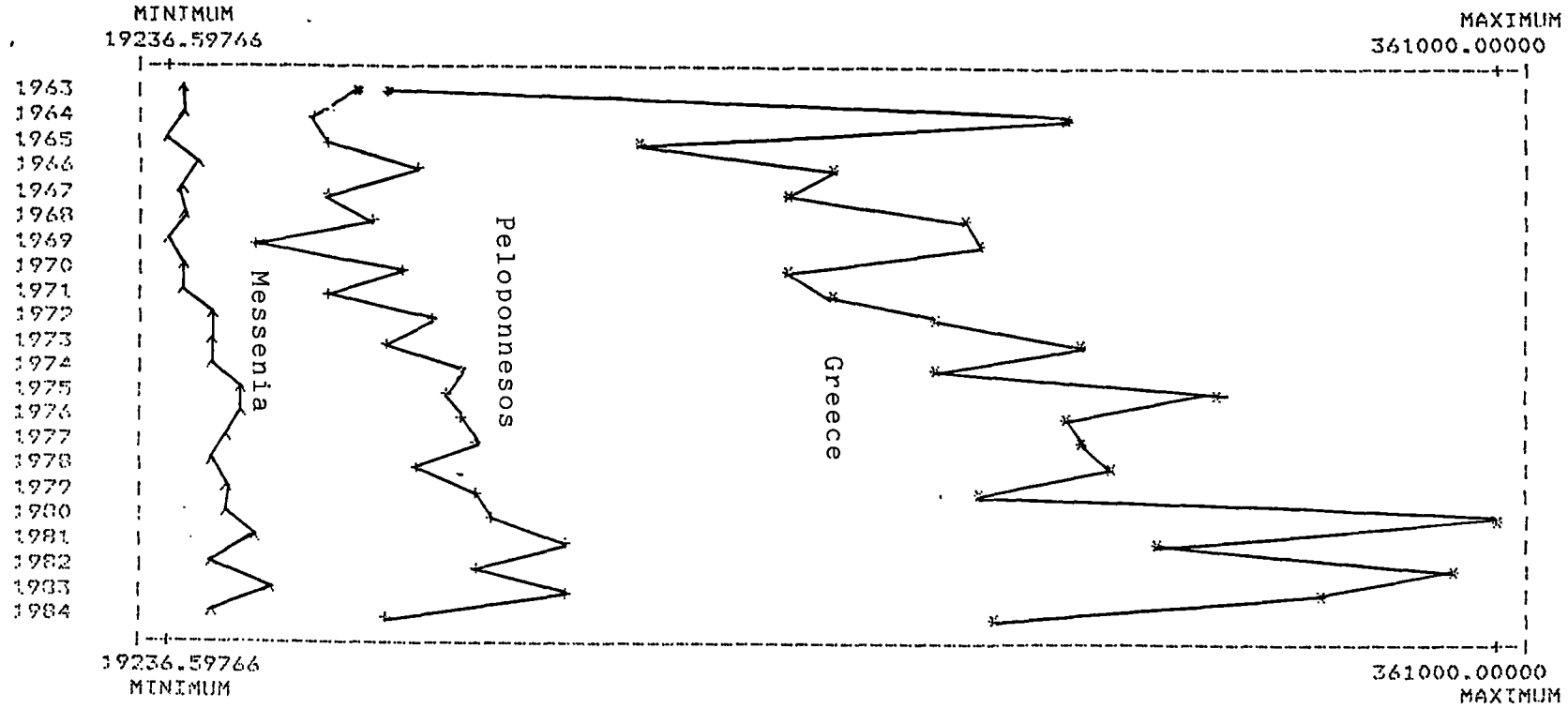


Figure 3.2: Greek Olive-Oil Production, Y_t Plotted for 1950-1988

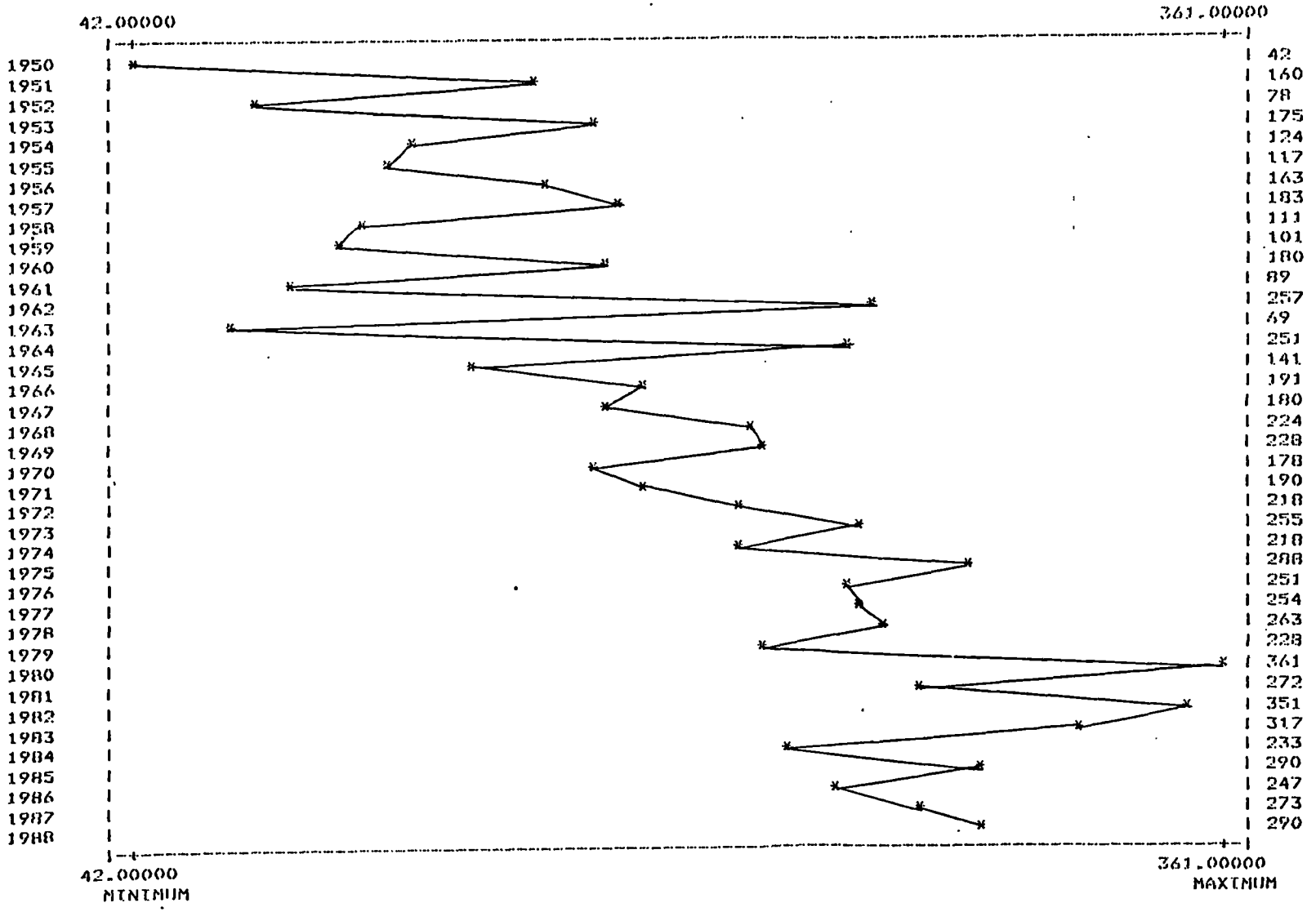


Figure 3.3: The Logarithm of the Greek Olive-Oil Production LY_t, Plotted for 1950-1988

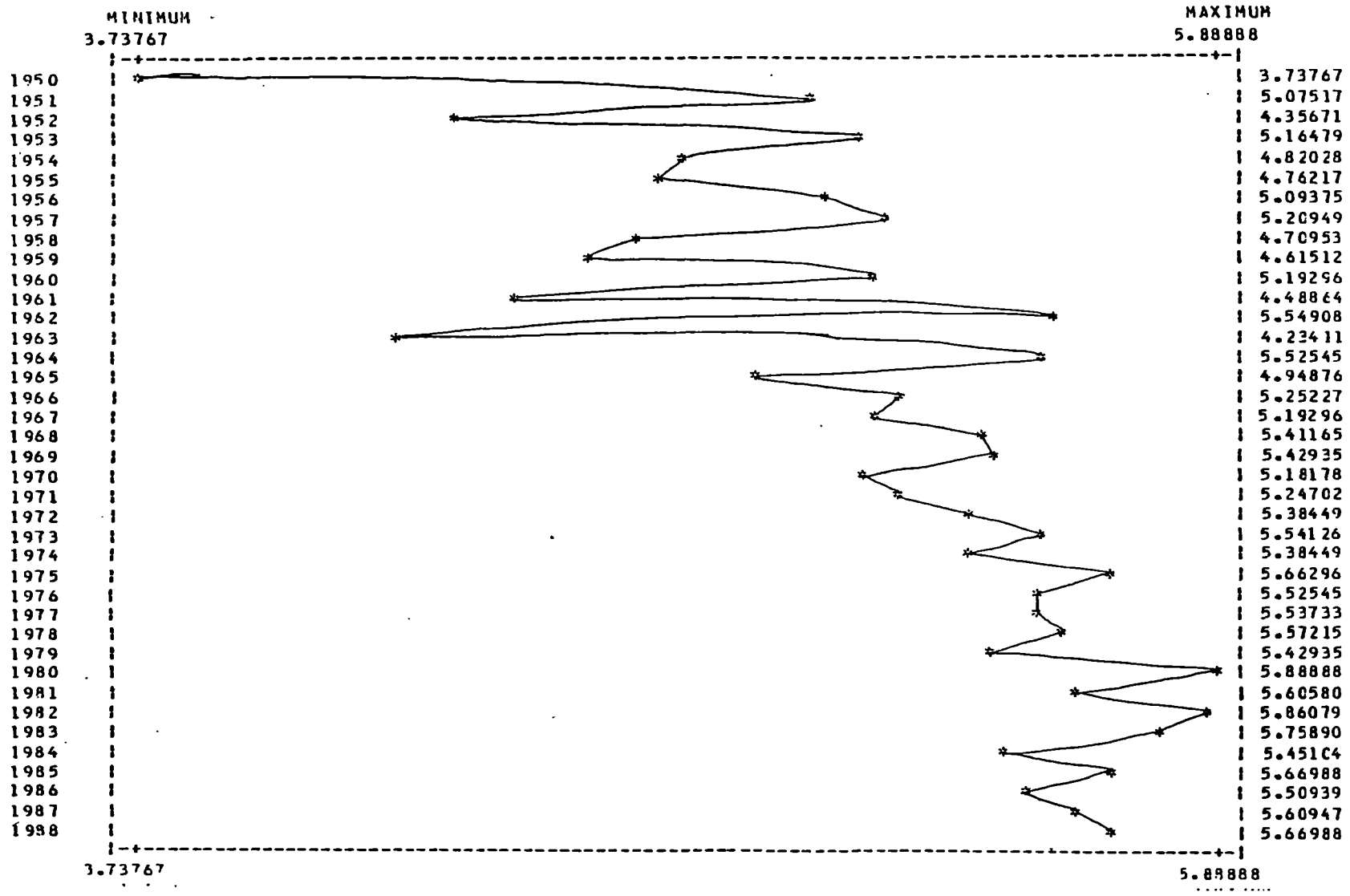


Figure 3.4 Real Olive-Oil Producer Price R_t Plotted for 1950-1988

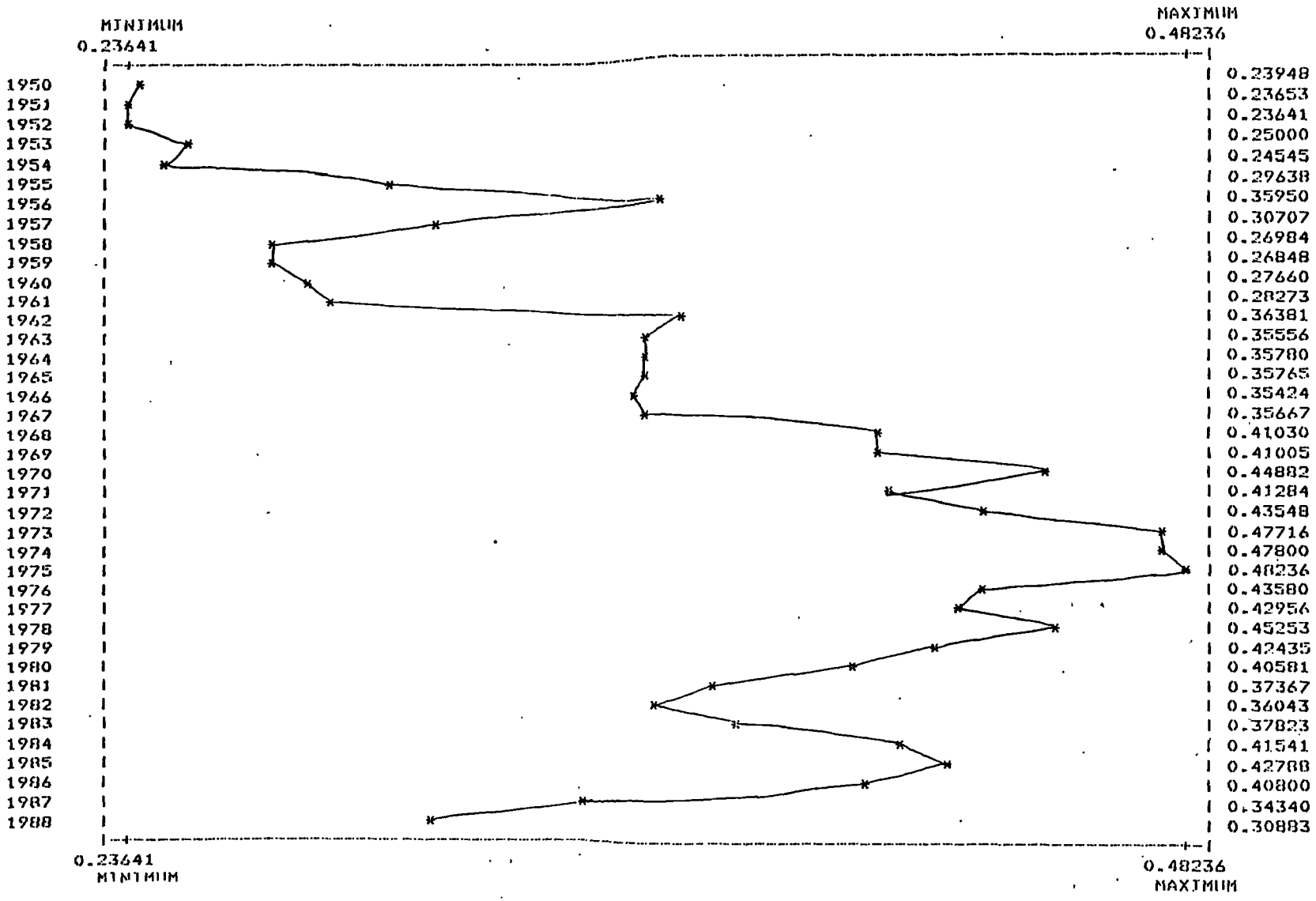
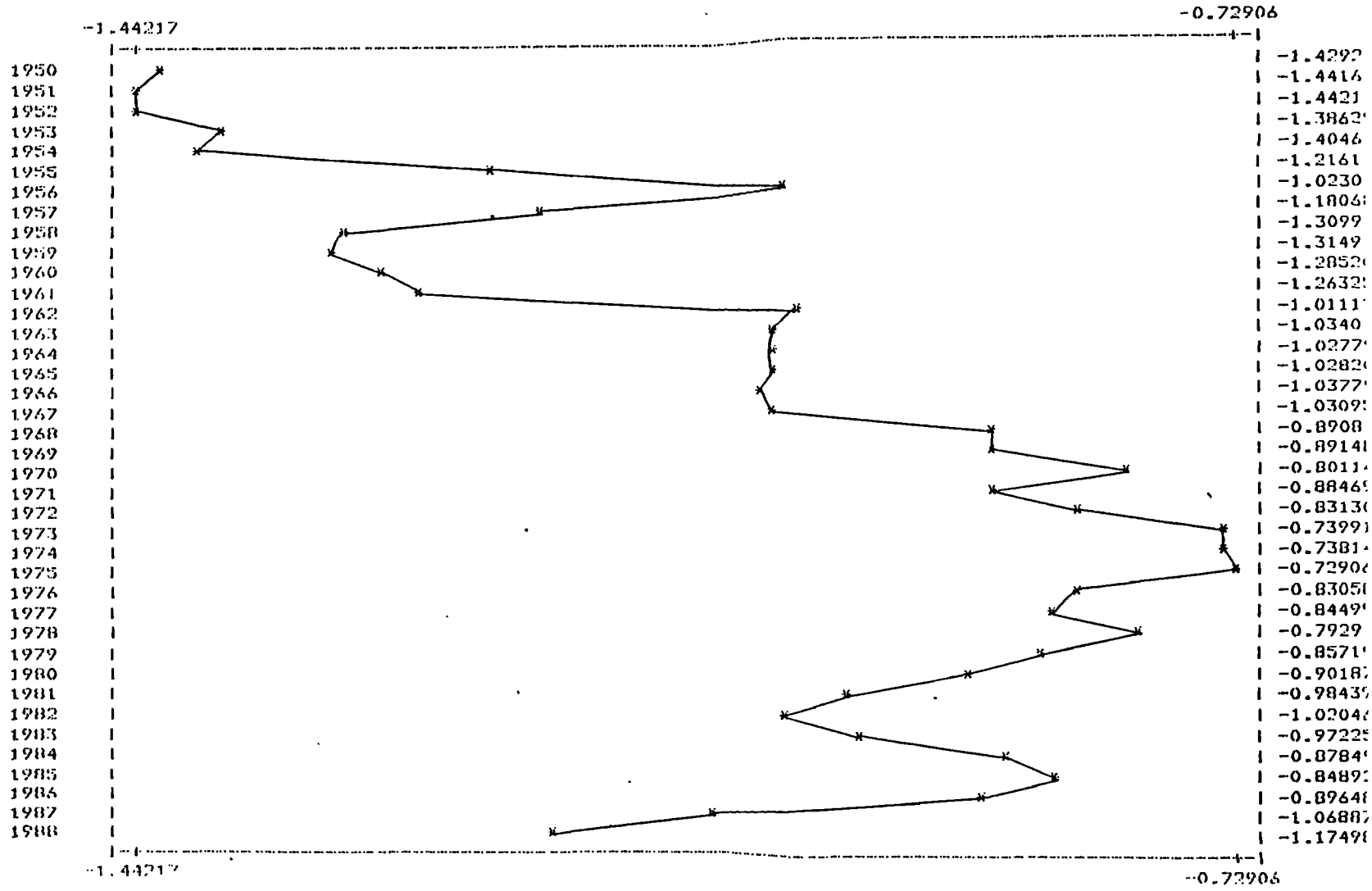
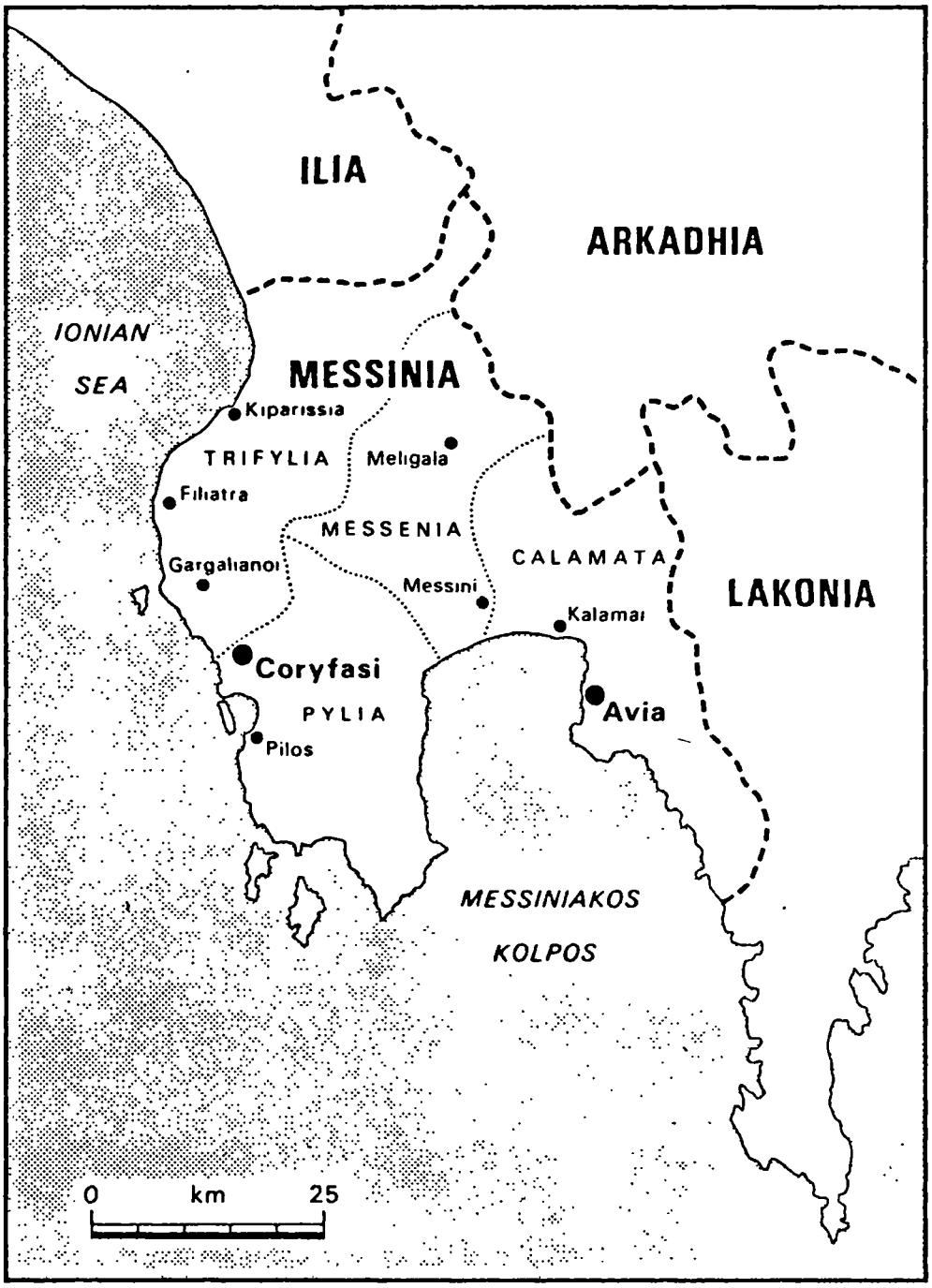


Figure 3.5: The Logarithm of the Real Olive-Oil Producer Price, LP_t, Plotted for 1950-1988



MAP II


ILIA
ARKADHIA
IONIAN
SEA
MESSINIA
Kiparissia
TRIFYLIA
Meligala
Filiatra
MESSENIA
CALAMATA
Gargalianoi
Messini
LAKONIA
Kalamai
Coryfasi
PYLIA
Avia
Pilos
MESSINIAKOS
KOLPOS
0
km
25

CHAPTER FOUR

THE DEVELOPMENT OF OIL MILLING

Introduction

The production of olive-oil can be divided into two basic categories: oils which are edible immediately after pressing, and oils which must be refined. The industry is likewise split into two corresponding groups of firms: those who are primarily involved in pressing and those who are refiners and packers. The sub-sector concerned with pressing is highly fragmented and is mostly located in the olive growing areas themselves, whereas refining and packing is concentrated and controlled by a limited number of large urban-based firms.

The purpose of this Chapter is to study the changing structure of the rural processing units and at the same time explore the dynamics and the forces behind the changes manifest in the olive producing areas of Greece. The particular focus will be upon the province of Messenia. It is argued that the growth of oil-milling has been accompanied by a reduction in the number of mills brought about by technical improvements in the methods of production. Furthermore, the recent trend of rapid technological modernization of the mills is combined with the development of an alternative mode of organization in the rural areas - that of cooperatives.

Section One discusses the extraction of olive-oil from the olive fruit. It is shown that through time the basic stages of olive-oil extraction have remained the same while the technical processes involved in them have altered dramatically. This has happened in order to facilitate production, increase productivity (in terms of achieving greater output per hour) and improve the quality of the produce.

In Section Two the expansion and concentration of oil-milling from the beginning of the century is discussed, and a case study illustrating the rise and initial stages of development of the sector is presented. It is argued that structural change has been brought about by technical improvements and has been combined with the evolution of the cooperative form of organization.

In Section Three it is shown that oil-milling cannot be viewed as a main source of alternative employment in the development of the rural areas. Furthermore, recent technological modernization in the mills has not only further reduced the amount of labour required but, at the same time, has limited its use to secondary tasks within the mill-such as carrying the produce and supervising the operation of the machinery.

Section Four focuses on the technological progress of oil-milling. New production processes are identified and the issue of imported technology, costs, and the links between domestic and foreign suppliers are discussed. It is shown that the ratio of modern to "classical" or traditional types of oil-mills has been steadily on the

rise since the early 1980's, and has been accompanied by greater cooperative ownership. The pace of change, particularly in Messenia province, has been rapid.

Section Five examines the role of cooperative organization within the village environment. The contribution of the olive cooperatives towards improving the relations between producers and merchants as well as the changing power structure in the olive producing areas is then highlighted.

Finally, Section Six discusses State policy with respect to oil-milling. It is argued that since Greece's accession into the EEC the role of the State in oil-milling has been twofold. First, under the aegis of the CAP, it has provided financial support to the sector and this, in turn, has enabled technological modernization to take place at a faster rate than it would probably otherwise have done. Second, the strengthening and development of the cooperative movement has been one of the main policy objectives of the State. Finally, in the context of the CAP the State has also been responsible for the implementation of the Production Aid scheme.

4.1 Extraction of Olive-Oil from the Olive Fruit

Whatever the precise method of extraction which is chosen, the main stages involved are quite similar. These are the pressing of the olive fruit and the pressing of the olive paste. The rest of the

extraction process differs depending on the type of technology used in the oil-mill.[1]

The pressing of the paste is considered to be important to the whole process of the olive-oil extraction. The way in which it is performed, as well as the type of technology used, strongly influence the amount and quality of the olive-oil received.[2] The various steps involved in the extraction process start with the delivery of the olive fruit to the mill. Olives are carried and placed in large sacks, in most cases provided by the oil-mill, weighed, and then placed in a queue for the extraction process to commence. Then, the olives are placed in a large container from which they are led through a ribbon to the machine where the olive leaves are removed. This is a necessary step because the presence of leaves during the extraction process adversely influences the taste of the produce (the greater the amount of leaves the bitterer becomes the final output), and it also affects the quality by increasing the quantity of chlorophyll contained in the olive-oil.[3] Washing follows next and this directly affects the quality of olive-oil because it clears off any substances carried with the fruit, such as dust and soil residue. Washing takes place in a separate container. At an experimental stage, washing powder has been used in the temperature range of 30^{o} - $40^{o}C$ for the washing of the olive fruit.[4]

After washing, the olives are carried through another ribbon to the olive mill or braker. The crushing of the olives represents the key step in the extraction of olive-oil. In the "classical" type of

establishment which typically operated until 1975, crushing took place in brakers which consisted of 1-3 huge cylinder or conic stone rollers, made of granite, rotating around a wooden or metallic axis on a stable basis. The olive fruit was fed underneath the stone rollers by means of a wooden or metallic attachment. The speed of rotation was very slow, so that the olive paste could be formed. In the modern type of mill whether "centrifugal", "mixed" or "improved classical" types, metal crushers are used, consisting of reversely rotated disks. They are quite small in size and operate with many rotations per minute. These crushers have rapidly gained ground in oil-milling technology because of their small size, greater productivity and lower cost. One disadvantage though of the metallic crushers is that whilst rotating they tend to fill the olive paste with metal traces coming off their surface.(5)

The next stage in the olive-oil extraction process is the pressing of the olive paste. This is the most important stage in the process of oil extraction with any type of technology used, classical or modern. Pressing takes place in a special container whose capacity depends on the type of technology used. Usually, the side walls of the container are made of two layers so that warm water runs between them for the heating of the paste. The temperature should be no higher than 25°C. The mixing of the paste is done by a rotated spiral which has a few small wings and which moves very slowly. The mean velocity is 18-20 rotations per minute. The pressing of the olive batch is completed in twenty to thirty minutes. Throughout the extraction process, contact of the paste with atmospheric air needs to be avoided as far as

possible. If not, rancidity might be caused in the olive-oil. The perpendicularly positioned pressing containers seem to perform much better at this task than the horizontally positioned ones.(6)

The final phase is the separation of the olive-oil from the paste. For that purpose, pressing has been practiced since the very start of olive growing. In the very old mills the crushing of the olives as well as pressing for the extraction of olive-oil was performed by the same worker or by horses attached to suitably manufactured devices.(7) The introduction of hydraulic presses in the 1930's, revolutionized the operation of old oil-mills and are used to this day in the improved classical oil-mill type. After pressing, the paste is spread onto loosely woven hemp mats which are stacked, interspersed with metal disks, in a hydraulic press. The mats only once undergo hundreds of tonnes of pressure to extract the liquid contained in the paste which includes the fruit's own water. The oil part of this liquid is allowed to surface thus separating itself from the water.

Apart from pressing, another way to separate olive-oil from the paste is by centrifugal separation, which constitutes a relatively modern method. This is based on the difference in the specific gravity between the substances of the olive paste i.e. olive-oil, water and solids. The paste goes through centrifugal separation in a Decanter after it is mixed with sufficient water.(8) Another method of separation is by contiguity. The container inside which contiguity is applied for the extraction of olive-oil is called a "Sinolea". This consists of some 6,000 metallic discs made of a special metallic

amalgam which processes a high degree of olive-oil contiguity.(9) Because of this, when the paste comes into contact with the discs, large quantities of olive-oil are retained and collected in a special container. Vegetable liquids and the part of the olive-oil which was not kept by the discs remains with the paste. The resulting quantity of olive-oil is separated in a centrifuge Decanter.

Finally, olive-oil goes through cleaning inside a filtering piece of equipment and then it is stored in large containers or oil-tanks, ready for marketing or household consumption. Among the factors which influence the final cleaning of the produced olive-oil we can mention two of the most important: specific gravity (the greater the difference in the specific gravity between the substances of the liquid the easier their separation), and temperature (the higher the temperature the easier the separation).(10)

It appears therefore that through time even though the basic stages of olive-oil extraction have remained the same, the technical processes involved have changed. The implications of this change for the oil-milling sector will be discussed in Section 4.4.3 below.

4.3 Growth and Concentration of the Milling Sector

In the 1931 Industrial Census the number of oil-mills in Greece amounted at 9,200. Only 642 or 6.9% operated with some form of mechanical power, the rest operated with horse power.(11) From Table 4.1 we can see that the Provinces of Lesbos and Messenia accounted for

some 34% of the mechanized oil-mills of the country. The same Census counts the number of cooperative oil-mills at 112 - obviously an insignificant number compared with that of the private sector. No further breakdown of information is given concerning the number of mechanized cooperative oil-mills.(12)

By 1939 the number of oil-mills had expanded to 9,536 and the mechanized units were counted at 1,986. The geographical location and concentration trends did not significantly change after 1931. During the same period 1931-1939 production of olive-oil increased from 94,770 tonnes in 1931 to 102,805 tonnes in 1939. Exports increased from 7,342 tonnes to 28,949 tonnes respectively. It therefore appears that higher export demand intensified production and contributed to the expansion of the industry.(13)

The 1951 Industrial Census shows a reduction in the number of oil-mills to 8,743. Production though remained at an average of 100,000 tonnes which indicates that production per establishment had increased. Indeed, by 1951, 2,472 mills operated with mechanical power which contributed to the increased capacity of the mills. The labour force employed as a whole, in the milling sub-sector was 26,228 people.(14) Table 4.2 shows part of the oil-mill workers (divided into male and female) throughout Greece. It can be seen that over 90% of the oil-mills were concentrated in the villages of the country - which further confirms the rural nature of this activity.

In 1951, the food industry employed 10% or 45,000 persons in the industrial labour force. Oil-milling employed 58% of that amount i.e. 26,228 people which was 5.8% of the total industrial labour force.(15) This implies that oil-milling constituted the largest source of employment within the Food Industry in the early post Second-World War period. The numerical contraction of the mills continued in the sixties. By 1970 there had been a further decrease of 39% - to 5,305 mills. Production of olive-oil though increased from 100,000 tonnes, on average in 1951, to 155,600 tonnes in 1970. So, even though 3,438 oil-mills closed down over the twenty year period 1951-1970, capacity increased - due primarily to technical improvements in production methods.(16)

Technical progress in olive oil extraction included quality improvements as well as larger quantities per hour. By increasing the number of washing machines, separators and special containers for the removal of oil leaves during the production process, the olive-oil which was produced acquired a better taste, brighter colour and lighter odor which, all together, comprised its essential "organoleptic" characteristics and constitutes its quality criteria.(17) On the other hand, the introduction and operation of hydraulic presses working with the use of electrical power contributed, to larger output per hour being achieved. In 1975, 3,515 oil-mills were counted in Greece which meant a reduction of 33.7% since 1970. Table 4.3 shows that 86% of them operated with electrical power, 13.5% with mechanical and now only 0.5% with horse power. This trend can be explained by the electrification of all parts of the country which assisted in the

easier and faster adaptation of the new production methods. The number of washing machines in the oil-mills rose to 1,488. The containers for olive leaf removal were counted at 1,714 and the separators at 4,702 of which 1,171 were automatic.(18)

Since 1975, a new and revolutionary technology has been applied to the extraction process in the oil-milling industry throughout the world. After a long period of research Italian manufacturers introduced horizontal centrifugal systems called Decanters.(19) These substituted for the hydraulic presses and contributed to producing larger amounts of olive-oil from the same quantities of olives processed - and at only a fraction of the time previously needed. Initially the Greek oil-millers imported the new technology from Italy. Since 1975 a few Greek manufacturers have set up domestic lines of production; but a large percentage of this equipment is still imported.(20)

By March 1988, the number of oil-mills in the country incurred a further reduction of 15% to stand at 2,979.(21) Table 4.4 shows the regional distribution and capacity of cooperative and private oil-mills. We observe that cooperative mills now make up 17.2% of the total number, and 26.2% of total capacity (expressed in kgr per hour). The private mills make up 82.8% of the total number of mills and 73.8% of total capacity. Also, 44.6% of the units are found in Peloponnesos and represent 39.7% of total capacity. In Crete, 16% of the units are found representing 25% of total capacity, while in Epirus and Kerkera there are 11.6% of the units which make up 6.5% of total capacity. By

1988 30% of the oil-mills (i.e. 299 cooperative and 589 private) operated the new Decanter technology. The investment cost involved in the installation of Decanters was about 25 million dr (in 1988 current prices). Up to 70% of this was covered through loans issued by the commercial banks to the private sector. For the cooperatives up to 75% of the expenditure was subsidised by the Law Decree 355/77 concerning technological modernization.(22) The number of cooperative mills increased from 464 in 1975 to 513 in 1988 which represents a rise of 9.5%.

In addition to the capacity expansion of the sector (i.e fewer units with larger production) during 1931-1988, one point which attracts the attention of a researcher is the regional concentration of the mills. More specifically, in the pre-Second World War period, there was a high concentration of mills in the provinces of Lesbos and Messenia. In 1931, Lesbos accounted for 22.6% of the total number of mills, 22.5% of the number of mechanized mills, 26% of the total mechanical power (H.P) and 18% of the labour force employed in the sector. The corresponding figures for Messenia were 11.7%, 11%, 9.4% and 8.8%. The reason for this geographical concentration during the early stages of oil-milling development, was that both provinces had a long tradition as olive producing and exporting regions.(23) This implied that social differentiation between the producers had been taking place for a long time previously - perhaps even over centuries. From this situation the oil-millers and the merchants who specialised in the olive-oil trade emerged from very early on.

It appears that the State took little interest in the industrial development of the rural areas where the mills were established, so there was no public assistance for capital formation.(24) The necessary capital and entrepreneurs were found in the rural areas themselves. The richest of the olive producers set-up oil-mills which at the initial stages of technical progress, required only horse power (literally). Therefore the most well-off families of the villages, those who owned at least one horse and could also afford to employ wage labour, started to produce oil.

When mechanical power was introduced, commercial capital became involved in terms of lending the millers part of the capital which they required. Mouzelis, for one, contends that commercial capital preferred to remain in the sphere of exchange.(25) The initial concentration of mills on Lesbos and Messenia meant that those two regions, especially the former, were the largest production and trading centres for olive-oil in the country. Some of the biggest olive merchants operated from there and sold the locally produced olive-oil to the urban centres of Greece or abroad.(26)

In Messenia, the village of Coryfasi was one of the first which developed the oil-milling sector in the province.(27) Until 1880, olive-oil extraction in the village was performed by a hand-mill situated in the garden of a producer's house. That producer, apart from being an olive-grower, was a "Bavarian Officer" in the Royal Army and one of the wealthiest farmers.(28) He was called Kagelarios Dimitris and set-up the first oil-mill that we know about in Coryfasi.

Olives were pressed by the rotation of two stones with the help of workers. Then the olive paste was put onto a woven material where, by hand pressure, the liquid was separated from the paste and collected into a large container. Olive-oil would surface after a few hours and was collected by means of large spoons. Olive-oil extracted in this way was used only for home consumption.

Between 1880-1900 the stones for the olive pressing were rotated by horse power and, in that way, larger quantities of olive-oil were produced which covered home consumption and left some produce over which could be marketed.(29)

Over the years spanning 1890-1925 the extraction of olive-oil became more systematic. Presses were used, attached to a main axis which was then rotated by four or more workers. In 1925 four oil-mills with horse power operated in Coryfasi. One belonged to the priest of the village, Pavlos Pavlopoulos. The second was owned by Lambros Katsoulas, who inherited Kagelarios's property through his mother. The third was owned by Athanasios Milonas, who inherited part of Kalogeropoulos's land the wealthiest farmer of Coryfasi, and the fourth by Athanasios Kokevis, inhabitant of a nearby town who was an oil-trader.(30) So it appears that at least in this village anyway oil-millers as a group emerged from the richest olive growers of Coryfasi. The rise of the oil-milling sector in the village was accompanied by improvements in the means of communications. The first motorised vehicle appeared at Coryfasi in 1926. During 1930-1934 four vans were in circulation and, by 1958, 7 vans, 7 private cars, 8 tractors and 42

fraises were found in the village.(31) By 1970, production of olive-oil rose to 200 tonnes but he number of oil-mills remained the same.(32) Instead capacity increased due to technological change. Three out of the four oil-mills operated with electrical power, and each had two presses. The remaining mill operated with mechanical power and was owned by the olive-cooperative.(33) Other villages of the province such as Tseria and Avia in Calamata County, have experienced similar lines of development of their oil milling.(34)

It appears that the growth of oil milling was accompanied by a certain degree of concentration brought about by technological change so that an increase in capacity meant a reduction in the number of mills. However, the nature of olive growing, its mode of economic organization and its geographical distribution was still that of a large number of relatively small units dispersed over the rural areas. It is worth noting that this phenomenon is shared by the experience of other major olive producing countries such as Italy and Spain.(35) Oil-milling may naturally be viewed as an activity forming an important part of rural industry. In this respect its role as a source of employment for the rural labour force needs to be considered.

4.3 Employment in Oil-Milling

In the context of the debate about the ability of small-scale rural industry to absorb "surplus" labour from the rural areas, the proponents of the labour absorption theory argue that small units located in rural areas not very far from villages can solve part of the

problem of chronic underemployment or hidden unemployment in agriculture.(36) Small units using simple indigenous methods are necessarily more labour- intensive than the alternative. Also, using machinery very intensively (rather than investing heavily in more machinery) which is kept running year round, these small units can vary their operations depending on the annual agricultural cycle. In the slack season, over the winter, between the Autumn harvest and the Spring pruning, small rural units can absorb labour. Equally - during the busy agricultural season when there is a great demand for pruning, harvesting and weeding, the small units can release labour for agricultural work. This alteration of work intensity is facilitated by the proximity of the units to villages so that workers do not have to leave their homes in order to find employment.

Oil-milling though constitutes a case where labour is engaged simultaneously with the olive harvesting period and the total amount of labour employed is not heavy in an absolute sense. More specifically, before the recent technological modernization of the oil-mills, not more than 4-5 workers were employed in each mill unit.(37) Most of them were recruited from the small farmers and agricultural labourers of the villages. The socio-economic gap between the employers and the workers meant that oil-millers often lent money to them.(38) It appears that this was one way of keeping the cost lower than what it would otherwise have been and thereby assisted capital accumulation. Oil-milling at the initial stages developed by maintaining a constant supply of unorganized and low paid labour.(39) On the other hand, it also retarded the growth of the organised and skilled labour found in

the rural areas because of its seasonal nature and the modest number of workers required, (i.e. a few workers for only two to four months a year).

The issue of identifying the line of development followed by the oil-milling sector is both conceptually and empirically difficult. This is because for the most part oil-millers engage in the production process themselves. The difficulty arises because they are not wage workers or just self-employed but pursue their business using family labour, as well as employing two or three wage workers. This seems to be why this issue is rarely substantiated in the literature.(40) In the early 20th century the number of staff within the mills ranged from 3 to 5 workers. One of them would be the "leader" worker, more experienced and specialised than the rest who sometimes undertook the recruitment and supervision of the others. He was often called the "Captain.(41) In 1929, an oil-mill operating by horse power would "officially" keep as its commission right 7% of the quantity produced.(42) In the village of Tseria, in Calamata County, two private oil-mills operated in 1930. Each of them employed three workers and daily production amounted to approximately 500 kgr of olive-oil. This amount corresponds to the processing of 3 tonnes of olives a day.(43) The workers were paid in kind, so out of the 35 kgr of olive-oil kept as a commission right by the miller, 1 kgr and 800 grs were paid out as daily wages. Of course, if we take into consideration the evidence provided by personal and particular observation the commission right could be as high as 15%.(44) This is because during the weighing of the produce, and from the extraction

process itself, a quantity of olive-oil would be allegedly kept by the millers - which could be up to 8% more than the official rate.

The mill-workers had to put in up to 16 hours a day, in damp and dark rooms with little time for food and rest. In many cases, these conditions led to a deterioration in the workers' health due to exhaustion and sickness. This was one of the reasons for the scarcity of oil-mill workers which occurred simultaneously with unemployment during winter periods.(45) By 1940 wages of the mill-workers had doubled in real terms due to scarcity of labour and in the context of general industrial legislation on wages.(46) Faced with increased wage bills, the oil-millers who were unable to substitute technology for labour - and that way increase output per hour and so retain their rate of profit, had to increase the commission rights. Because of this many mills, including one of the private mills in Tseria village, became uncompetitive and eventually closed down. It appears that this sort of trend was one of the main reasons for the reduction in the number of mills from 9,200 in 1931 to 8,743 in 1951.

Between 1951-1975 the number of workers in the oil-mill was still further reduced with the installation of new technology. This mainly consisted of the use of hydraulic presses with electrical power.(47) Wages in 1970 for an oil-mill worker would be 185 dr per day or 7.5 kgr of olive-oil per 8 hour day. The price of olive-oil in the same year ranged between 25 - 30 dr per kgr. Compared with the minimum industrial wage in urban areas the oil-mill workers received earned around 40% more.(48) This was an indication of the need of the rural

oil-milling to attract and keep. By 1970 the commission right of the mills was 10% of the produce. Average daily production in an oil-mill with two hydraulic presses and three workers was 1,500 kgr of olive-oil a day.(49) Working conditions were much better by this time. Workers were able to labour for fewer hours and if they agreed to work overtime, they now received payment for it. In 1978, average annual employment in oil-milling was 7,583 while in 1984 employment was reduced to 5,615 "seasonally employed workers".(50) Table 4.5 shows the number of mills, employment and horse power as between 1978-1984.

Table 4.5: Number of Oil-Mills, Employment and Horse-Power between 1978-1984.

	Productive Units		Auxiliary Units	Total in 1984	Total for 1978
	Total Number	Units with Power Known			
Units	3,069	3,010	76	3,145	3,676
Employment	5,326	5,281	289	5,615	7,583
Horse Power	-	178,032	-	-	155,390

Source: N.S.S.G, National Surveys 1978 and 1984.

We may observe from Table 4.5 that between 1978-1984 there was a reduction of 14.5% in the number of units, 26% in employment and an increase of 14.6% in capacity.

By 1988 an oil-mill which substituted Decanters for the hydraulic presses produced 5,000 kgr of olive-oil daily, while commission rights

remained at 10% net of the kernel production - which is also kept by the miller. The daily wage in 1988 current prices was 2,995 dr per worker while olive-oil prices went from 25-30 dr in 1970 to 330-350 dr per kgr in 1988.(51) It appears that the real wage has remained roughly the same over 1970-1988 while, as shown in Table 4.6, productivity has increased dramatically.

Table 4.6: Production in an Oil-Mill in Coryfasi, 1930, 1970, 1988

	Technology	Daily Production	Commission Right of the Miller	Daily Earnings[1]
1930	One petrol machine and horse power	500 Kgr	35 Kgr	21.6 drs equivalent to 1,8 Kgr
1970	Two hydraulic presses	1,500 Kgr	150 Kgr	903 drs equivalent to 30.1 Kgr
1988	Decanters	5,000 Kgr	500 Kgr	7,525 drs equivalent to 30.1 Kgr

Notes: 1. For a 16 hour working day in 1930 and an 8 hour working day in 1970 and 1988.

Source: Fieldwork Information, Summer 1988.

It is also worth noting that in Table 4.6 the daily wage in 1930 is calculated for no less than a 16 hour day, while the daily wage in 1970 and 1988 is calculated for an 8 hour day. This seems to confirm the idea that the more developed the productive forces, the less time is needed to produce the wage goods required for the reproduction of the labour force. One might expect that the process of capitalist

accumulation in the mill would be associated positively with higher rates of output and a high·profit rate.(52) But for the calculation of the rate of profit we need to estimate the depreciation of fixed capital, plus the interest rate on it because the investment for most of the technology installed after 1981 was financed partly by a bank loan and partly by a grant.(53) In order to make sense of the accumulation process of the oil-milling sector at national level we would need to know the value added and capital depreciation.(54) However, the available data does not measure up to these demands and for the oil-milling sector in particular, the statistics required are not available from the official services. Oil-milling and its activities as a sub-sector are hidden under the general heading of the "Food Industry".(55) However, concerning the employment position in oil-milling, according to the information provided by the A.B.G in 1988 it was estimated that 12,855 workers were employed. Out of these, 10,455 workers were employed in the 2,091 units of "classical" mill type, and 2,400 workers in the 888 units of "centrifugal" mill type which operated 1,200 Decanters(56) (2 workers per 1 Decanter). It should also be pointed out that in a "classical" mill type, typically 5-6 workers are employed while in a centrifugal mill type only 2-3 find employment.(57)

We may conclude that in the early stages of development - the extent to which labour was employed has been modest even in the agregate. With the technological modernization of the mills, the labour required has been further reduced and in keeping with the

predictions stemming from the de-skilling debate, its use has been limited to secondary tasks.(58)

4.4 Technological Progress

4.4.1 The Problem in Perspective

A major question in local development is certainly the choice of technologies that will allow an efficient use of available local resources. According to Morawetz there are three possibilities: to import the technology from abroad through the normal mechanisms of international transfer, generate it locally, or adapt the technology available in another area to suit local needs.(59) The recent literature on the choice of technology in industry provides some interesting comparisons of alternative production techniques.(60) These comparisons show enormous differences in initial investment per unit of output or per worker. However, the impact which the chosen technologies have had upon the development of small scale producers has not, as yet, been studied very systematically.

In the search for "appropriate" technologies for development, China's small-scale Chemical Fertilizer Plants present an interesting case.(61) In many ways, these plants seem to be the perfect embodiment of "appropriate" technology. They employ an adapted version of a coal-based process which was commonly used during the 1940's and 1950's while the equipment is of domestic manufacture. Since they are able to make use of relatively abundant coal resources for feed-stock and fuel,

the plants can be scattered in locations near the resources and the markets. The dispersed location pattern helps to reduce the burden on the inadequate transportation system in China and also helps to promote a more regionally dispersed pattern of growth, stimulated by the production of fertilizers themselves, as well as by the forward and backward linkages they generate. In addition the factor proportions embodied in the small-scale technology extend beyond coal-mining and other activities stimulated by fertilizer production. The Chinese small-scale fertilizer plants are products of the Maoist programme to build "producer goods" industries in rural areas using "intermediate" technologies and local materials. They are part of the autarkic development strategy born out of necessity that placed a high priority on dispersing industrial activities and building more economically self-sufficient regions. Even given the problems caused by over expansion of the programme during the Maoist period, on balance the development of small Fertilizer Plants has been widely considered a success of technological adaptation - which allowed the early introduction of the seed-fertilizer revolution into Chinese agriculture in the 1960's and early 1970's.(62)

In contrast oil-milling - even though its "modernization" took place in the context of the rural industrialization policy of the PASOC Administration - presents us with a case where technology is largely imported. In addition, know-how and technical support is provided by foreign representatives. Attempts to produce domestically the equipment used in the mills and so generate forward and backward linkages have been few. But even in those few instances where this has

happened, the machinery, parts and design were all imported.(63) This strongly suggests that the potential for small producers to flourish depends largely on the development of the industrial structure in general. Furthermore, one is led to the much thornier question of how and at what cost, a given country can achieve its own indigenous technological capacity. Some researchers plead for dissociation of the developing countries from the international economy.(64) But against this view is the relative success of some of the newly industrializing countries (such as South Korea, Taiwan, Singapore, Hong-Kong and more recently, Thailand, Indonesia and Malaysia) in reducing the problems of underemployment through a process of rapid industrialization characterised by their integration into the world economy.(65) However, it is suggested - plausibly in my view - that their ability to maintain this success may well turn out to be crucially dependent on the extent to which they pursue their export strategies in conjunction with a long-term policy which emphasizes the development of national technological capacity.(66)

4.4.2 Suppliers of Technology to the Oil-Milling Sector

The oil-milling sector of Greece presents a clear case of "modernization" through imported technological inputs. The main supplier country is Italy. Even the few domestic producing companies have to import the machinery and parts in order to follow the existing design patterns of the Italian companies and so produce the correct equipment.(67)

One of the domestic producers of modern oil-milling technology is Eleourgiki - the apex cooperative organization of olive producers which has been heavily subsidised by the State. Since nearly a thousand mills have already (by 1990) installed the new technology at an average cost of 20-25 million dr. (in 1988 prices), the potential demand for a greater degree of indigenous production capacity seems apparent (especially if my informants verdict that similar equipment domestically produced could be 5-6 million dr cheaper per installation is correct).(68) Eleourgiki in fact commenced production in 1987 and built a factory in Crete. Currently it appears able to supply oil-mills of Heracleo and Hania Provinces with machinery at a lower cost than the imported capital goods. An Italian company, Rapanelli, has also undertaken some common production contracts with Eleourgiki.(69) One of these involved the production of "Sinolea", a modern "mixed" olive-oil extraction system.(70)

Another Greek manufacturer was the Brothers Theohari, who established a firm at the beginning of the 1980's in Peloponnesos. Even though they were well accepted by the market because of the high quality of their equipment and the relatively low price compared with the imports, the firm recently has had to close down. The reason seems to have been personal rather than to do with the objective economic forces in that after the sudden death of the owner no willing successor within the family was found, and since as it was a relatively small family firm it decided to simply go out of business.(71)

A third Greek manufacturer, Cheruvim, is also a family firm currently based in Athens and employing 30-40 workers. They import their raw material requirements (i.e. the metallic parts of the equipment) from abroad and they assemble them together according to Italian design. Annual production of the company in 1988/89 was, about fifty olive-oil extraction systems, 10-20 of which were sold in Messenia Province. The ex-factory price of a whole system is around 20 million dr which makes it approximately 5 million dr. cheaper than a similar system obtainable from a foreign company. At the present time there are not more than four domestic manufacturers of olive-oil extraction systems. The majority of systems are still imported from Italy and to a lesser extent, from Germany and the U.K. In 1986 the value of oil presses imported into Greece was 108,418 thousand drs. Eighty-nine per cent of this (or 96,788 th.drs) was paid for machinery imports from Italy. In 1987 the value of the oil presses imported into Greece was 216,849 thousand drs. Seventy-six per cent of this (164,361 thousand drs) was paid for Italian imports.(72)

Some of the well-known Italian manufacturing companies include Alfa-Laval, Pieralisi and Rapanelli. They supply the Greek market through their representatives (domestic commercial firms) who earn an agency commission of up to 3% of the sale price of each system they manage to sell.(73) One such firm is based and operates in Calamata in Messenia province. The owner was a representative of Alfa Laval up to 1986. He first came into contact with Italian manufacturers, Pirelli, in 1965. After 1975 he surveyed the market for olive-oil extraction systems and started selling them on behalf of Alfa-Laval. Two years

ago he fell out with this company and now represents the Greek manufacturers Cheruvim. He annually sells between 2-5 extraction systems not only in Messenia but also to the islands of Zakenthos and Kerkera.(74) These systems, as I have already mentioned, are very similar to the Italian design but, of course, there are some variations because of the patent and trademark restrictions deployed by the parent company. When closely questioned some of the millers in the province who use this equipment claimed that they did suffer from certain technical faults and deficiencies which do not seem to be experienced by those firms using the Italian constructions.(75)

Another import agency firm in Messenia which was visited represents the German company Ga-Ha-De and supplies around 200-300 oil-mills in Messenia, Zakenthos and Macedonia. Forty to fifty percent of this firm's sales consist of domestically manufactured products, especially the washing machines and pressers which are made in Greece. To make the home produced equipment the firm contracts out the task by calling on the services of 40-50 self-employed craftsmen when an order is received.(76)

The phenomenon of subcontracting in general, is now of course well substantiated in the literature. With reference to the developing countries and, more specifically in Lima, Peru, it was observed that self-employed manufacturers found it increasingly difficult to survive as independent producers and became out-workers or subcontractors.(77) Subcontracting has been commonly found in the footwear and clothing industries, although it has also been identified in such unexpected

branches of production as the manufacture of refrigerators, transport vehicles and stationery products.(78) Out-workers may be subcontracted by commercial or industrial firms. The existence of this modern form of putting-out system leads to a chain of subcontracting between out-workers. For example, one tailor was able to run a small workshop with eight wage labourers on the basis of outwork contracts obtained from merchant capitalists. Another example was a cobbler who was making shoes for a small workshop which was itself subcontracted to the multinational firm, Bata.(79) Marx analyzed the role of the putting-out system in the industrialization of Britain and Western Europe and saw it very much as a transitory period towards the direct subordination of labour in capitalist production.(80) Lenin shared the same view. He examined the question in great detail because in the 1890's there was an extensive discussion in Russia about whether and how the small producers should be supported.(81) Lenin's main point was that large parts of what are called "handicraft industries" are extensions or departments of capitalist manufacture. His critique of a contemporary census of small-scale producers is that despite the information the census provided, it obscured the essential fact that small-scale industry performs nothing but detailed operations for the large-scale capitalist manufacturers or produces complete products for merchant capital. Lenin attacked those theorists who devised policies in support of small-scale producers. In his view, such measures would firstly benefit mainly the "parent" firm; secondly help to preserve conditions of work and remuneration far worse than those of the workers directly employed by the capitalist firms themselves; and thirdly, only retard the development of industry and fully-fledged capitalism. He

wrote "The Narodniks continue to cling to their intention of retarding contemporary economic development of preventing the progress of capitalism and of supporting small production, which is being bled white in the struggle against large-scale production".(82) One of the most important points in Lenin's work in his illustration that an analysis of small-scale producers cannot be divorced from a general understanding of the industrial structure in which they operate.

Today, with technological progress, conditions for small-scale production and for subcontracting are being continuously created.(83) The latest example is the introduction of micro-electronics in many branches of manufacturing. Partly as a consequence of this the optimal scale of output may be lowered; it is claimed that the increased possibilities of small-scale production has led to an increase in subcontracting.(84) In Japanese manufacturing there is an acknowledged and highly efficient use of small enterprises in a wide range of modern industries through subcontracting. In Japan small enterprises and indusrial subcontracting have undoubtedly played an important role in the economy's rapid industrialization.(85)

In the Greek experience, subcontracting is quite common among the small-scale firms in various industries and sectors of the economy.(86) In the olive industry as far as oil milling is concerned, the Messenian firm of V. Vassiliou, is the only form of subcontracting which I have managed to find. To the best of my knowledge similar cases have not yet been reported. This firm has been working with subcontracting since it was established twenty years ago. It supplied oil-millers and

other small units with the necessary mechanical equipment. Currently the annual turnover of the firm does not exceed 10 million drs. In this respect it is a small business. It appears therefore that the supply of modern technology used in the mills is mostly dependent on imports from the more industrially developed economies such as Italy and Germany. One of the most noteworthy attempts has been that of Eleourgiki, but the fact remains that the industrial structure of Greece is such that a large percentage of this equipment still has to be imported.

4.4.3 Types of Technological Processes Used in Milling

All olive-oil extraction systems which have been used to date are generally classified as systems which produce olive kernels containing either a low percentage of moisture (25-30%), or systems which produce olive kernels containing a high percentage of moisture (>45%).(87) The first category includes the "classical" type of oil-mill with hydraulic presses, (see Figure 4.1) while the second includes: the centrifugal type oil-mills (as supplied by Alfa-Laval, Pieralisi, Hiller, Theohari, Zambeou); and the mixed type (as supplied by Eleourgiki, Rapanelli). The process of a centrifugal oil-mill as a method of production and liquid separator was taken up on an experimental basis by researchers at the beginning of this century.(88) First, Boulier in 1903 succeeded in separating olive-oil from the olive-paste inside a centrifuge. Many others followed his work and in 1955 the first complete system of olive-oil extraction was successfully manufactured.(89) In 1965 the Italian company Alfa-Laval introduced the "Centrioline" to the market,

followed in 1969 by the "Cosi" system. Pieralisi, developed another model in 1971. After 1975 - a number of Greek and other foreign companies produced similar systems - the most important among them being Amenduni, De Vita, Theohari and Zambekos.(90) A description of the process of production of a centrifugal oil-mill is shown in Figure 4.2.

In the process of production of a "mixed" oil-mill, the basic unit is "Sinolea" within which the largest part of olive-oil - some 70-80%, is separated from the olive paste. In 1972 Rapanelli, an Italian manufacturer, for the first time presented the market with a mixed system based on contiguity and centrifugion. The main elements of the system are the "Sinolea" unit working on the principle of contiguity, and the Decanter unit working by centrifugal power. So far as the organoleptic characteristics are concerned the quality of the olive-oil extracted by "Sinolea" is the technically preferred process. The rest of the olive-oil extracted is enriched in Chlorophyll which changes colour to green and influences the taste i.e., it becomes more bitter. The "mixed" system is manufactured in Greece only by Eleourgiki in conjunction with Rapanelli (for a description of the mixed system, see Figure 4.3).(91)

In order to protect the olive producers and put a stop to the marketing of defective oil extraction systems, the Ministry of Agriculture set out quantitative and qualitative standards for all new types of oil-mill. With Ministerial regulation number 316086/7313/24.8.83 all manufacturers and importers have to undergo

quality checks on their equipment before they are able to market them. Quality checks are undertaken by the Olive Institute of Hania in Crete, the Agricultural Institute of Mytiline in Lesbos, the Olive Institute of Kerkera, and the Institute of Agricultural Mechanization.(92)

The replacement of the classical oil production process by the modern one, either centrifugal or mixed, is now taking place rapidly.(93) The main reasons for this may be identified as follows. First, the olive-oil produced is of a superior quality and therefore commands a higher price in the market. Also, for up to 70% of the systems value, the oil-miller can obtain a loan from the commercial banks at a lower interest rate than the market one. But the main advantage, according to the millers with whom I discussed this matter with, is the reduction in the number of workers required during the peak season. The size of the productive labour force today in the modernized mills (as mentioned) ranges between two to three workers per mill. Automation of the production process has been mainly responsible for labour shedding. Now the oil-miller controls the production process directly while at the same time has reduced his labour costs. In the last decade or, more precisely, between 1975-1988, 888 oil-mills have introduced and now operate the new processes of olive-oil extraction. In 1986, 29% of the oil-mills in the Messenia Province used the Decanters, the rest still operated with the classical process.(94) In 1988, according to the Agricultural Institute of the Province, 350 oil-mills were in operation. Sixty-one percent (or 213 oil-mills) operated with Decanters. It therefore appears that within a span of only two years the number of modernised oil-mills in the

province doubled. In my sample, there are 78 oil-mills from the three counties of the province and one cooperative oil-mill from the fourth county.(95) Table 4.7 shows the olive-oil and olive residue quantities produced in these mills according to the extraction system which they used.

Table 4.7: **Production of 78 Oil-Mills of Messenia Province (in Tonnes)**

	Pylia County		Messeni County	
	Centrifugal	Classical	Centrifugal	Classical
Number of Mills	22	4	19	5
Olives processed	25,778.2	1,862.8	6,835.9	891.3
Olive-Oil Produced	4,114.0	307.0	1,268.7	218.2
Olive-Residue Produced	10,709.5	642.5	3,211.1	423.9

	Calamata County		Extraction Ratios		
	Centrifugal	Classical	Counties	Centrifugal	Classical
Number	14	13	Pylia	1:6	1:6
Olives	13,522.1	5,112.3	Messini	1:5.4	1:4
Olive-Oil	2,462.7	911.6	Calamata	1:5.5	1:5.6
Olive Residue	5,665.0	1,972.9			

Source: Provincial Agricultural Institute, Records, Summer, 1988.

The 78 mills in the sample accounted for 37% of the olive-oil produced in Messenia in 1988 or some 25,000 tonnes. Out of the sample

7,843.5 tonnes came from the centrifugal units, and 1,436.8 from the classical. In Calamata county 14 centrifugal mills and 13 classical mills were selected in terms of the highest quantities of olive-oil produced. It appears that even though the extraction ratios were roughly the same the centrifugal mills processed more than double the quantity of olives processed by the classical mills.(96) The extraction ratios from Table 4.7 show that one kgr of olive-oil was produced from 5.5 kgr of olives with the new process, and 5.6 kgr of olives with the classical process. The olive residue produced by centrifugal mills contains 10-18% more water than the one produced by the classical mills and this implies that it could be sold cheaper in the market. In fact the price difference is usually 1-2 dr/kgr.(97) In Messini county, the extraction ratio is 1:5.4 in the centrifugal mills, and 1:4 in the classical, which is higher than the average ratios of the other two counties. The reason for this is because Messini produces better quality olives - the soil and irrigation techniques contributing to a greater amount of olive-oil contained in the fruit.(98) Finally, in Pylia county, extraction ratios are 1:6 for all mill types.

Extraction ratios for olive-residue are roughly the same in all three counties, one kgr of olive-oil produces two kgr of olive residue. In the three counties during 1988 207 mills operated out of which 113 were centrifugal and 94 classical.(99) It appears that 48.6% of the centrifugal mills of the three counties account for 7,844.5 tonnes of olive-oil or 31% of the provincial production. It seems that the new process is dominant throughout the province of Messenia and this

dominance has come about within a period of only three years viz 1986-1988. If modernization continues at the same rate, then a further reduction in the number of mills seems inevitable and the classical mill type will become a feature of the past. The main incentive for this rapid "modernization" has undoubtedly been the financial support provided by the C.A.P. This support was directed towards the cooperative as well as the private oil-mills. However, the cooperative sector enjoyed certain concessions in order to enhance and make its role as a form of economic organization in oil-milling more prominent.(100) As already indicated, the expansion of the cooperative sector an important policy objective of the Greek government in the 1980's.

4.5 Cooperatives Versus the Private Sector in Oil-Milling

At the national level 513 oil-mills (17.2% of the total) are owned cooperatively. According to the 1988 Industrial Census, the capacity of the cooperatives (in terms of tonnes per hour) forms 26% of the total, and 39% of the modernised oil-mills i.e. those equipped with the new Decanter technology.(101) In 1975, the cooperative mills comprised only 13% of the total. The overall percentages might not look impressive but they should be seen in the context of the overall development of the cooperative movement. It was only since the early 1980's that the cooperative oil-mill gained the support and favour of the State as a mode of organization. In particular olive growing regions the presence of cooperatives is much stronger than the national average and in some cases is even dominant.(102) For example, in

Heracleo Province in Crete, even though the number of cooperative oil-mills is smaller than the private sector, capacity is 223,400 tonnes per hour compared with 234,500 of the private. That was in 1986. By 1989, according to Eleourgiki, the cooperatives have gained even further ground against the private mills. This is because technological modernization in the private mills is lagging behind that of the cooperatives. More specifically, in 1986 cooperative mills were equipped with 137 Decanters while the private sector only had.(103) This discrepancy continued and even grew by 1989.[103] In Lesbos 60% of production comes from the cooperative sector again because of technological superiority since there are only 53 cooperative units compared with 149 private ones. In Messenia in the summer of 1988, producers' cooperatives formed 70 (or 20%) of the existing number of oil-mills, and 60 of these (or 86%) mills were modernized.(104)

In Coryfasi village, by 1970 there were two cooperatives. One was called the "Agricultural Cooperative, Nestor" and the other the "Olive Cooperative of Coryfasi". The former was established back in 1914 and is considered the first cooperative organization in Messenia and one of the first in the whole of Greece.(105) It started with a membership of only 8 and until 1923 it still numbered only some 180 members. It was mainly a credit cooperative and, even though it operated for 56 years, rather surprisingly did not manage to extend into any productive activities such as supplying the producers with inputs, or building up any storage facilities for the output to be kept until sale.(106) According to older members oral testimony in 1988 the management was incapable of running the mill for the benefit of the cultivators. The

second cooperative was established on the 14.4.1934 by 44 olive producers. They bought an oil-mill 300 m outside the village for a sum of 220,000 dr. (in current prices), out of which 160,000 dr. was borrowed from the Agricultural Bank. The remaining sum was paid out of members' own contributions. Upon purchase, the oil-mill contained one hydraulic press, a petrol engine, a water pump and some auxiliary equipment. Apart from the petrol engine which was replaced much earlier (in 1948), by another 20 -25 H.P Hereford type, this mix of machinery operated until 1962.(107) In 1962 the executive committee of the mill began the process of modernization by acquiring a new petrol engine of 30 - 40 H.P, two hydraulic presses, two separators and other ancillary equipment. Total investment amounted came to approximately 700,000 dr which was borrowed from the Agricultural Bank. Until 1970 the cooperative earned just enough to pay interest on its long-term loan. Total revenue remained modest over the 36 year life-span.(108) One of the main reasons for the failure of the cooperative to prosper was the stiff competition which it faced from the private sector. As discussed earlier in this thesis the oil-millers and the merchant had a long history in the village community.(109) They had established strong links with many producers in the shape of a borrower-lender relationship; also the family bonds existing amongst many villagers and the millers retarded the development of the cooperative movement. Until the late 1970's the private oil-mills were clearly dominant in the process of olive-oil extraction in Coryfasi.

By the early 1980's, because of the incentives given to the cooperatives as a favoured mode of organization by PASOC, the olive

cooperative of Coryfasi was revitalised. The executive commitee decided to buy a 460 m^2 area on the outskirts of the village near the Keparisia-Pylos motorway. The oil-mill itself occupied 74 m^2 and was built in 1983. The modernization process of the oil-mill took ten months and was completed by September 1983. The new means of production installed allowed for a capacity of 3,800 kgrs of olives to be processed per hour in two centrifugal units.(110) The Executive of the cooperative consisted of young farmers who believed that the new unit would bring about an improvement in the quality and mode of trading of their olive-oil. As a result they hoped that their incomes would rise and this was expected to play a major role in stemming out-migration from the area.

The total cost of modernization came to 43,702 thousand dr. The financing was undertaken in the context of the EEC Law Decree 355/1977 concerning modernization of manufacturing units in the rural sector (Act 13, Paragraph 5).(111) The capital was derived from the following sources:

a)	Total Subventions			30,971,250 dr.
	Greek State	25%	=	10,323,750 dr.
	EAGGF	50%	=	20,647,500 dr
b)	Loans			10,323,750 dr.
c)	Members contribution			2,407,000 dr.

The loan, obtained from the Agricultural Bank of Pylos, streched over a 10 year period at an interest rate of 14.5%. The members contribution amounted to 2.4 million dr and was largely used for land purchase. The amount of olives received by the cooperative for olive-oil extraction and the final quantity of olive-oil produced between 1983/84-1987/88 is presented in Table 4.8.

Table 4.8: Production of the "Olive Cooperative of Coryfasi" during 1983/84-1987/88. (In tonnes and th.dr.)

	1983-84	1984-85	1985-86	1986-87	1987-88
Olives	780	1,320	1,860	1,680	2,100
Olive-Oil	130	220	310	280	350
Sales Value	1,791.1	3,168	5,952	6,720	8,697.5
Olive-Residue	310.7	528	740.9	-	980
Sales Value	932.1	1,584	2,222.7	-	4,900

Source: Olive Cooperative of Coryfasi, Records, Summer 1988.

We may observe from Table 4.8 that production of the mill has been increasing with the exception of 1986/87 when the output of the village was generally lower due to adverse weather conditions.(112) The commission right for the first three years was set at 8% which was 2% lower than that of the private sector. In 1988 the mill operated with a 7% commission right so in this way it gained more customers. The total mount of olive residue produced is kept by the mill and is usually sold by auction to the refiners of the province. In 1988 it was sold at 5 dr/kgr to a nearby refinery.(113)

Since 1981 the market price of olive-oil has been influenced by cooperative action (through Eleourgiki), and ranges at a higher level than the EEC intervention price. So in most cases the farmers prefer to trade their product instead of selling it through EEC intervention. If, at the end of the marketing year, there are unsold quantities of olive-oil the "Olive Cooperative of Coryfasi" can always sell it off to the "Second Order Olive Cooperative of Calamata" also at a higher price than the EEC intervention price.(114) It would therefore appear that the cooperative mode of organization has secured for the farmers the best possible price.

However the modernization of the unit did not, of course, increase the number of workers in each mill. On the contrary, the new automatic systems did not require any labour input apart form some secondary work involving the transfer of olives from the point of production to the mill, and the feeding of the olives into the machines. On the other hand, seasonal and unskilled labour could be easily found in the village, which signifies the fact that the olive cooperative was not in a position to offer an alternative source of employment. Also this particular cooperative's location is such that it guarantees easy transport for the workers, the olives, and the final quantities of olive-oil, since the mill is situated very close to the motorway.

While the production and membership of the cooperative increased, the four private mills which operate in the village lost revenue and

customers at a rapid rate. Two of them have been modernized since the beginning of the 1980s.(115) The other two are of the classical type. In 1988 production of one of the centrifugal private mills was 150 tonnes of olive-oil, and this suggests that the mill operates at below capacity. The other mill produced 130 tonnes. The two classical mills between them produced 200 tonnes of olive-oil. The capacity of the private mills by far exceeds the need for domestic production and this results in under employment of the technical equipment and a greater degree of competition than would otherwise be so. Most producers leave their olive-oil at the oil-bank of the mills until a suitable buyer can be found. In 1988, 635 tonnes of olive-oil were sold to the private sector at 330-350 dr/kgr - the actual price, of course, being dependent upon the quality.(116) In that particular year (1988), the entire amount was sold to the local merchant who acted as a representative of the urban packers. There are years when the amount of olive-oil produced is sold by auction to the highest bidder. So, merchants from all over the province come and bid if there is increased demand from the packers whom they represent. One hundred and sixty tonnes were sold to the "Second - Order Cooperative" based at the capital of the province, Calamata. The main reason that the packers and the higher-order cooperative buy the olive-oil in this way is to meet export demand. Export markets are the most profitable outlets for the packers and refiners of the olive industry. This issue will be discussed in Chapter Seven.

The merchants are given a certain price range by the packers at which they can buy olive-oil from the producers. The standard

commission right of the merchants is 2-3%. Merchants try to increase their percentage by making a common agreement with the packer and state a higher amount of olive-oil purchased in each customer receipt. When the receipt is submitted to the Provincial Agricultural Institute, the company will be paid a higher amount of Consumption Aid which it will then share with the wholesaler or merchant. Even though the Agricultural Institute is aware of these schemes, the checking and inspection of agents, packers, and merchants is rarely done in a thorough way. Thus the merchant based at Coryfasi has never been checked by the authorities.(117)

The practice of merchants buying at pre-market prices from the producers which took place a few years ago has been seriously undermined by the action of the cooperative. There are still some cases though where the producers lose income. This can happen either because they owe the wholesaler sums of money or because he has arranged, before the annual announcement of the intervention price by Eleourgiki, to buy their product at a pre-market price. Nowadays the olive-cooperative attempts to deal with most of these cases so that the merchant finds himself isolated.

The olive residue produced by the millers, private or cooperative, is sold to the two refineries based in the province. In 1988 all refineries of the country formed a cartel and fixed the price at half of the previous year. The reason for this action was an EEC imposed export quota which created surpluses as it made it unprofitable for the refiners to export.(118) So, the oil-millers incurred a reduction in

their revenue which the private sector mills tried to pass on to the producers by slightly increasing their commission rights by 0.5% - to 10.5%. As the olive cooperative retained its right at 7%, the private sector suffered a sharp reduction. The oil-millers are expected to present the Provincial Agricultural Institute with service receipts for each customer which states the exact amount of olive-oil produced so that the farmer can claim the Production Aid. This is paid by the EEC through the Ministry of Agriculture (YDAGEP), and for 1988 it was 94 dr/kgr. Cases have been found of agreement between the private oil-millers and the farmers to state a higher amount produced than the actual and so share the additional Production Aid. The provincial authorities estimate roughly a 5% default in the annual official figure of production.(119)

4.6 State Policy and the Oil-Milling Sector

Soon after its first electoral victory in 1981, the PASOC government identified itself with the cooperative movement by becoming financially involved. At the root of this policy was the idea that olive cooperatives should be organised on the basis of the village community as the primary unit of production, and that they would be responsible vehicles for regenerating rural development.(120) However, since Greece joined the European Community, the catching-up process with the more economically advanced countries of Europe required rapid structural administrative and technological change. The Prime Minister, Mr Papandreou, repeatedly proclaimed that Greece had chosen the path of socialism with the twin objectives of accelerated economic

advancement and social justice.(121) The cooperative way of development was thought to avoid the evil of inequalities of income distribution that result from the capitalist mode of development. But apart from giving financial help the State did not put much effort or resources into arranging for expert advice, auditing precedures or providing relevant management courses for either the newly created olive cooperatives or the ones already established. The various Agricultural Institutes located in the provinces were certainly very understaffed and did not possess the kind of adequate expertise necessary to tender appropriate advice. Also the Agricultural Bank, as the most directly responsible arm of State policy, failed to give regular expert advice and consultation to the olive cooperatives to help them prosper in the competitive world still dominated by the private sector. The reason for this was that the Bank could not spare sufficient resources to create on a national basis the appropriate internal organization which would have been able to cope with the expansion of the cooperative sector units.(122)

The Agricultural Bank and the commercial banks are the main agencies for supplying credit to the oil-milling sub-sector. By Regulation Number 164/4/18.7.1977 the Agricultural Bank was instructed to become involved in the financing of small rural processing units.(123) If the loan requested is required for construction purposes then it is expected to be repaid in fifteen years in annual instalments starting, at the very latest, eighteen months after actual errection. If on the other hand, the loan concerns technological modernization, it should be repaid within 8 years following the first

annual instalment - and starting eighteen months after the actual installation of the equipment on the premises. Interest on these loans is currently at 16%. To be considered a loan application should be made by an individual farmer, a team of farmers, or a cooperative. Some oil-millers, especially when they apply to modernize their mills, are unable to contribute the 30% of the total expenditure required by the Bank. So they claim that they have to resort to other financial sources which offer much harder terms. The interest on loans from the Agricultural Bank has an additional charge of 1.25% which is called the Agricultural Insurance Contribution.(124) This seems to create a feeling of resentment and discontent among the oil-millers who would otherwise like to borrow from the Bank. But instead they apply to the commercial banks. The contribution of the ABG to medium-term loans is fifty percent while another fifty percent is contributed by EAGGF. Only investments whose value ranges between 40,000 and 5 million ECU are considered. The loan covers (at its maximum) 70% of the total expenditure of the applicant. In the case of cooperatives it covers up to 80%.(125)

The State plays the role of a guarantor when the loan is acquired through the commercial banks. The current (1989) interest rate for "modernization" type loans is 17%. Article 16 of Regulation 795/85 provides financial help for any technological modernization undertaken in mountainous or semi-mountainous rural areas. The aid is up to 4 million dr. per unit.(126) Table 4.9 shows the medium-term loans given by the ABG for building and technological modernization of rural

processing units including oil-mills throughout Greece over the period 1980-1985.

Table 4.9: Medium-Term Loans by the ABG, 1980-1985 (In constant prices, million dr's)1

1980	1981	1982	1983	1984	1985
85.90	70.26	52.35	93.09	140.38	169.50

Notes 1. The Retail Price Index has been used as a deflator.

Source: Agricultural Bank of Greece, Loans Department, 1988

The amounts are expressed in real prices, but even so there has been an upward trend since 1983, and by 1985 loans were double the amount given in 1980.

One controversial area where the State is involved - through the Ministry of Agriculture - is the implementation of the Production Aid scheme, in the context of the CAP. This issue concerns the management of the scheme at central and local administrative levels. Management is assigned to a service of the Ministry of Agriculture which acts as an intervention agency (YDAGEP). It has at its disposal, for control and advisory services in the field, staff attached to the local offices of the Ministry in each province (nomos) headed by an agronomist.(127) Any verification carried out on individual applications for aid are effected by these staff members. Controls at the central level are being confined to verifying completeness of supporting documentation, and to checks upon the numerical accuracy of applications and summary

schedules. The supporting documentation consists of a crop declaration/application for aid and a miller's certificate. The applications of associated producers are grouped together by the producer organizations who submit a single application for all their members to the local YDAGEP office after verification has been carried out. Non-associated producers submit their applications directly to the local YDAGEP offices.(128)

In 1984/85 the Court of the European Community decided to carry out an audit covering the implementation of production aid schemes in the member countries.(129) The audit findings were as follows. There was little evidence that producer organizations were properly inspected by the Greek authorities. The authorities appeared to have granted recognition on the basis of formal criteria as regards size and other requirements without seeking any real evidence as to the fulfillment of their essential requirements. This involved verifying the production of their members, and of distributing the aid received. In general the Court observed during the auditing that there was no system for tracing cases where, for one reason or another (e.g death), the aid was not collected by the producer. The central authorities had not laid down any formal payment procedures to be followed by the producer organizations. Furthermore, the Commission had not been informed by the Greek authorities as to which producer groups were recognised for the purpose of the aid. Again there was little evidence that the requisite controls on oil-mills had been carried out although the mills which were visited maintained stock records which met with YDAGEP instructions. Neither did the Greek "system", provide for checks

reconciling the capacity of mills with the millers' certificates issued by them. Checks to detect duplicate applications for aid are also not provided for in Greece.(130)

In responding to the auditing report the Greek authorities stated that the results of their controls were deemed to be fully satisfactory and no signs of fraud were detected. They attribute these results to the traditional honesty of Greek farmers.(131) The reader can draw his/her own conclusions from this disclaimer. It is worth noting however, that the same audit found a 15% irregularity in the Italian system of Production Aid. Although irregularities have been reported in such strong terms by the EEC Court itself, it appears that no decisive action has yet been taken to prevent them. In the Greek case plans were made for the establishment of a local and provincial EEC inspectorate but until the summer 1988 these had not come into effect.(132) On the other hand, Italy has been a member for a longer period of time and the problem there, according to EEC Court auditing reports, is more significant. All these indications imply that this issue is not just one of financial probity but it also has a strong political dimension. It appears that EEC inspectorates cannot impose such a close and regular control on the internal olive industries of the member-States. This is because, even if closer monitoring was to be conceivable, its implementation could cause severe adverse internal reaction in the member countries concerned.

Conclusions

In this Chapter it has been shown that there is a positive relationship between technological change and the structure of the oil-milling sub-sector. It has been contended that the material interest of the producers in the rural areas, whether private or cooperative, is the prime motive force which drives modernization forward. Of course the process of change which is currently under way did not just happen overnight in the rural areas. The EEC and the adaptation of the National Agricultural Policy to the CAP prepared the ground. Pricing regulations and incentives for the development of olive cooperatives in the context of the CAP shaped the environment within which the changes took place. Nor did the technology for the modernization of the oil-milling sector originate in rural areas. Technology has been mainly imported from large EEC industrial countries like Italy and Germany. Research Institutes at the provincial and higher levels helped in the diffusion of the new equipment in rural oil-milling, and continue to check quality standards of foreign and domestic manufacturers. On the other hand, the rise of cooperative organization means that nowadays the olive producers even though have not established direct contact with the packers or refiners of the urban centres, can deal with them under improved conditions. The rural oil-milling sector is the link connecting the rural producers and the urban packers and refiners. Its essential role is to help bridge the gap in both economic and social terms between olive producing and urban areas where the other integral part of the olive industry is based. In Part Two the urban processing of olive-oil is addressed.

REFERENCES

1. See A. Kiritsakis, The Olive-Oil, (Thessaloniki, 1988) p.86.+

2. See A. J. Mendoza, "Milling-Malaxation", in J. M Moreno-Martinez (ed), Olive-Oil Technology, FAO, (Rome, 1975).

3. Chlorophyll is the green colouring matter in the leaves of plants. The presence of this substance influences the taste and quality of the olive-oil, ibid,.

4. See J. M. Martinez, "Preliminary Operations" in J. M. Moreno-Martinez (eds), Olive-Oil Technology, FAO, (Rome, 1975).

5. A Kiritsakis, 1988, op.cit, p.91.

6. ibid.

7. See G. Frezzoti and M. Manni, "Olive-Oil Processing in Rural Mills", Agricultural Development Paper No. 58, FAO, (Rome 1956).

8. See A. J. Mendoza, 1975, op.cat.

9. Contiguity refers to the chemical property of olive-oil by which when oil paste comes into contact with special metallic discs, large amounts of olive-oil are kept.

10. See A. J. Mendoza, 1975, op.cit.

11. N.S.S.G, Industrial Census, 1931. By "horse power" I mean that mills were literally operated by the use of horses. Mechanical power existed in the form of petrol machines for the pressing of the olives.

12. ibid.,

13. See Chapter Two, Section 2.13.

14. N.S.S.G, Industrial Census, 1951.

15. ibid.,

16. See D. Miliakos, Olive Cultivation in Greece, EEC (Italy) and other Countries in Anticipation of Membership, A.B.G (Athens, 1980) p.22.+

17. A.B.G, Department of Vegetable Production, 1989, the information was derived from reports on the improvement of the organoleptic characteristics of olive-oil during the 1970s.

18. A.B.G, Department of Agro-Industry, 1975 Survey.

19. A Decanter is a centrifuge system within which the olive-oil is separated from the olive paste in three stages. See A Kiritsakis, 1988, op.cit. p.103.

20. Information received from Mr E. Evagellou, Head of the Department, of Agro-Industry, A.B.G, 1989.

21. Ministry of Agriculture, Department of Information, 1988.

22. Ministry of Agriculture, Department of Information, 1988.

23. See N. Karabelas, Messeniaka Grammata, (Calamata, 1981)+ and N.S.S.G, Agricultural Production, various issues since 1914.

24. See D. Psychogios, The Extraction of Surplus from Agriculture, (Athens, 1984).+

25. See N. Mouzelis, Modern Greece : Facets of Underdevelopment, (London, 1978) p.25.

26. The names of a few well known merchants who operated in the provinces of Lesbos and Messenia in the early twentieth century were referred to in my discussions with Y. Xiloyianni (PASEGES) and G. Bazyioti (Ministry of Agriculture), 1988.

27. Pylos, Town Hall, Records, 1988.

28. ibid,. A Bavarian Officer was a member of the Royal Army of Greece as the King was originally from Bavaria (in Germany).

29. Pylos, Town Hall and Kinotita of Coryfasi, Records, 1988.

30. ibid.,

31. Kinotita of Coryfasi, Records, 1988.

32. ibid.,

33. ibid.,

34. As it was not possible to find any Records in the Kinotites of Avia and Tseria, which were visited during 1988, their individual cases could not be included here.

35. Thus today the number of mills in Italy is about 9,000 according to the Official Journal of the European Communities, C134, Vol.28, 3.6.1989.

36. See A. Booth and R. M. Sundrum, Labour Absorption in Agriculture, Theoretical Analysis and Empirical Investigations, (Oxford, 1985).

37. A.B.G, Department of Agro-Industry, information received from a 1950s survey by the Bank obtained in 1989.

38. Information obtained during fieldwork in the villages of Messenia Province : Coryfasi, Avia and Tseria, 1988.

39. Even though there is no specific published reference on this point, it seems to be very probable in an underdeveloped rural economy in the early 20th century.

40. See H. Schmitz, "Growth Constraints on Small-Scale Manufacturing in Developing Countries". World Development Vol. 10, No.6 (1982).

41. Information provided by an elderly oil-miller, Andreas Psareas, in the village of Tseria active over 1925-1953, Summer 1988.

42. The commission right of the mills was officially set, each year, by the Ministry of Agriculture. In reality, it was well above this rate depending mainly on the millers integrity. ibid.,

43. The two mills were owned by A. Psareas and K. Petroutseas (ex-president of the village and among the five wealthiest farmers, even though Tseria is a mountainous village and people apart from olive-growing engage in sheep rearing). All information cited on oil-milling in Tseria, was provided by these two elderly ex-millers, during the fieldwork visit in the Summer of 1988.

44. See N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949).+ Also older producers' personal accounts.

45. Another reason was that during the 1920's and 1930's there was a strong trend of migration from the rural areas of Greece to the U.S.A.

46. N.S.S.G, Employment Bulletin, 1951.

47. See Table 4.3, A.B.G, 1975 Survey.

48. N.S.S.G, Employment Bulletin, 1970.

49. A.B.G, Department of Agro-Industry, Records, 1989.

50. N.S.S.G, National Survey, 1978 and 1984.

51. Ministry of Trade and Commerce, Olive-Oil Prices, Records, 1988.

52. See H. Schmitz, Accumulation and Employment in Small-Scale Manufacturing : Case Studies from Brazil, (London, 1982).

53. Ministry of Agriculture, Department of Information, 1988.

54. See H. Schmitz, 1982, op.cit,.

55. Under the "Food Industry" heading of the Official Statistics of the N.S.S.G are simply "food, drink and tobacco". There is no systematic or detailed treatment of any of these industries until after the 1960's.

56. Decanter, see A. Kiritsakis, 1988, op.cit,. p.103.

57. Ministry of Agriculture, YDAGEP Survey, March 1988.

58. See H. Braverman, Labour and Monopoly Capital, (New York, 1974).

59. See D. Morawetz, "Employment Implications of Industrialization in Developing Countries : A Survey", Economic Journal, Vol.84, September, p.491-542, 1974.

60. See for example I. Benson and J. Lloyd, New Technology and Industrial Change, (London, 1983) and Al. Rainnie, "Small Firms Big Problems : the Political Economy of Small Businesses". Capital and Class, No.25, 1985.

61. American Rural Industry Delegation. Rural Small-Scale Industry in the People's Republic of China, (California, 1977).

62. ibid,.

63. In the case of the enterprise Eleourgiki, the Cheruvim and Theohari companies, the design and machinery parts were imported. This information was provided by the companies during my visits in 1988 and 1989.

64. See A. G. Frank, Reflections on the World Economic Crisis, (London, 1981) and S. Amin, Imperialism and Unequal Development, (London, 1977).

65. OECD, The Newly Industrialising Countries, Challenge and Opportunity of OECD industries, (1988) and L. Franco "Adjusting to Export Thrusts of Newly Industrialising Countries : An advanced Country perspective". The Economic Journal, 91, June 1981, p.486-566.

66. ibid,.

67. Information provided by Eleourgiki. I am particularly grateful to Mr Petrakis who as chief engineer was personally involved in the establishment of the Eleourgiki's manufacturing firm in Heracleo, Crete. March, 1988.

68. ibid,.

69. Price estimates were obtained in 1988 from Eleourgiki and the company, Cheruvim, which also has a base in Athens.

70. For a description of the different olive-oil extraction systems see Section 4.4.3 and A. Kiritsakis, 1988, op.cit.

71. Information provided to me personally through a business associate, V. Vasiliou, of the "Brothers Theohari" in Calamata, 1988.

72. N.S.S.G, External Trade 1986, 1987, code number 84594800.

73. Information obtained from E. Kallas, ex-Commercial Representative of Alfa-Laval who, currently acts for Cheruvim, in Messenia, 1988.

74. ibid,.

75. Unpublished Report of a limited number of mills (about fifty) undertaken by the Agricultural Institute of Messenia in 1987. The complaints were reported to the Olive Institute of Hania for further investigation.

76. Information obtained from V. Vasiliou, domestic businessman and owner of the firm, Summer 1988.

77. See P. Sonza and E. Tokman, "The Informal Urban Sector in Latin America", International Labour Review, Vol. 114, No.3, 1976.

78. See A Vazquez-Barquero, "Small-Scale Industry in Rural Areas : The Spanish Experience since the beginning of the century" and G. Fua, "Small-Scale Industry in Rural Areas : The Italian Experience, in : K. J. Arrow (eds), The Balance between Industry and Agriculture in Economic Development, Vol.1, 1988.

79. See R. Bromley and E Gerry (eds). Small-Scale Manufacturing and Repairs in Dakar : A Survey of Market Relations within the Urban Economy, (London 1979).

80. See K. Marx, Capital, Vol. I, (london 1970), originally published in 1867.

81. See V. I. Lenin, "The Development of Capitalism in Russia", in Collected Works, Vol. 3 (London, 1960), originally published in 1899.

82. ibid,.

83. See K. J. Arrow (eds). The Balance between Industry and Agriculture in Economic Development, Vol. 1, 1988.

84. Cf. Special Issue in "Third World Industrialization in the 1980's: Open Economies in a Closing World" in the Journal of Development Studies, 21(1), 1984, and C. Perez, "Microelectronics, Long Waves; and World Structural Change: New Perspectives for Developing Countries", World Development, 13 (3), 1985.

85. L. Klein and K. Ohkawa, Economic growth : The Japanese Experience since the Meiji Era, (Homewood, 1968) esp. Chapters 1,3 and 4; and S. Watanable, "Enterpreneuship in Small Enterprises in Japanese Manufacturing". International Labour Review, Vol. 102, No.6, 1970; and K. Ohkawa and G. Ranis (eds) Japan and the Developing Countries : A Comparative Analysis, (Oxford, 1985).

86. EOMEH, Six Studies on Topics of Small and Medium Enterprises, (Athens, 1985); and EOMEH, Greek Organization of Small and Medium Enterprises, Congress 13-15 June, (Athens, 1983).

87. See A. Kiritsakis, 1988, op.cit, p.111.

88. ibid,.

89. ibid,.

90. ibid,.

91. Information provided by Eleourgiki, Department of Planning and Investment, 1988.

92. Information provided by Mrs G Bazyioti of the Ministry of Agriculture, Department of Forestry, 1988.

93. Information provided by the Ministry of Agriculture (YDAGEP); see also section 4.2.

94. Information provided by the Agricultural Institute of Messenia, Summer 1988.

95. Records provided by M. Tsarbopoulos, Head of the Olive-Department of the Agricultural Institute of Messenia, Summer 1988.

96. ibid,.

97. Agricultural Institute of Messenia, Price Records and Oil-Mills' receipts, ibid,.

98. Information supplied by the Olive-Oil Institute of Messenia, Summer 1988.

99. ibid,.

100. See M Nikolinakou et.al, Strategy of Development of the Cooperative movement in Agriculture, (Athens, 1986).+

101. Ministry of Agriculture, YDAGEP Survey, March 1988.

102. N.S.S.G and YDAGEP Surveys 1986 and 1988.

103. Information provided by A. Kiriakoulakos, Department of Supplies, Eleourgiki, 1989.

104. Records provided by M. Tsarbopoulos, Head of Olive-Department of the Agricultural Institute of Messenia, Summer 1988.

105. Records kept at the Kinotita of Coryfasi, 1988.

106. It is a custom - at least in Messenia Province - for the olive producers to leave their produce at the oil-mill until a suitable buyer is found. For this service the customers are not charged either by the private or the cooperative mills.

107. Information obtained from Mr G. Frago the President of the Olive Cooperative of Coryfasi, Summer 1988.

108. ibid,.

109. See Chapter Three.

110. Information obtained from Records of the Olive Cooperative of Coryfasi, 1988.

111. ibid,.

112. Information obtained from Mr G. Frago the President of the Olive Cooperative, Summer 1988.

113. ibid,.

114. For a discussion of the role of Eleourgiki in the market of olive-oil, see Chapter Two, Section 2.3.3.

115. Information obtained from Mr G. Frago, the President of the Olive Cooperative of Coryfasi, 1988.

116. This price range of 330-350 drs corresponds to the different grades of olive-oil which is determined by the degree of acidity. Above 3.3^{o} acidity the olive-oil needs to be refined before it is suitable for human consumption.

117. This was confirmed by both the merchant himself and the Agricultural Institute of the Province.

118. This issue will be discussed in detail in Chapter Six.

119. Estimates of M. Tsarbopoulos, Head of the Olive Department, Agricultural Institute of Messenia, 1988.

120. PASOC Sectoral Development Plan, 1983-1987, Centre of Scientific Research (KEPE).

121. Y. Pottakis, Minister of Agriculture in the PASOC government interview with Eleourgiki, No.9 August-September 1986, p.26.

122. Information received through discussion with E. Evagellou Head of Agro-Industry Department, 1988.

123. ibid.

124. This aims at covering the administrative costs of the Bank and to provide an insurance against possible default by the borrower.

125. Ministry of Agriculture, Department of Information, 1988.

126. ibid.

127. Ministry of Agriculture, Department of Information, 1988.

128. ibid.

129. See Official Journal of the European Communities, C134, Vol.28, 3 June 1985.

130. ibid.

131. Ministry of Agriculture, Mr. E. Papamarkaki, Department of Processing and Trade, 1988.

132. Ministry of Agriculture, Department of Information, 1988.

Table 4.1: Geographical Distribution of Oil-Mills, 1931

Province	Total Number	No's Using Mechanical Power	Total Capacity in H.P.
Etolia	156	11	144
Argolida	443	31	408
Arkadia	213	15	160
Attica	388	27	465
Ahaia	646	45	554
Eboea	372	26	456
Zakenthos	301	21	295
Eperos	214	15	227
Thessalia	314	22	362
Kerkera	72	5	79
Kefalenia	345	24	340
Krete	802	56	1194
Keclades	14	1	-
Lakonia	644	45	779
Lesbos	2082	145	2725
Macedonia	186	13	370
Messenia	1020	71	1000
Samos	202	14	176
Fthiotis	286	20	266
Hios	500	35	541
Total	9200	642(6.97%)	10.541

Source: N.S.S.G, Industrial Census, 1931.

Table 4.2: Oil-Mills: Number of Establishments and Number of Persons Engaged by Branch in 1951

City Wise Total

No. of Establishments		No. of persons employed			
		Male		Female	
Total	Replied	Total	Over 15	Total	Over 15
202(2.3%)	96	384	382	35	34

Total of Greece - Towns

No. of Establishments		No. of persons employed			
		Male		Female	
Total	Replied	Total	Over 15	Total	Over 15
722(8.2%)	265	945	933	31	24

Total of Greece - Villages

No. of Establishments		No. of persons employed			
		Male		Female	
Total	Replied	Total	Over 15	Total	Over 15
7819(89.4%)	1825	5281	5233	236	210

Source: Derived from N.S.S.G, Industrial Census, April 1951.

Table 4.3: Types of Power Used in Oil-Milling

Provinces	Operation		
	By electrical Power	By mechanical Power	By horse Power
Alexandroupolis	4	-	-
Kabala	17	1	-
Thessaloniki	25	9	-
Larisa	39	16	-
Lamia	41	2	-
Agrinio	83	24	1
Attica	74	33	2
Halkida	135	9	-
Patra	264	22	-
Pyrgos	189	10	-
Tripolis	35	2	-
Calamata	356	16	-
Lesbos	139	24	-
Hania	259	70	-
Heracleo	368	10	-
Korinthos	162	6	-
Rodos	44	6	-
Kerkera	217	130	-
Pereas	84	48	13
Levadia	74	5	-
Nafplio	140	12	-
Preveza	108	18	-
Sparti	161	8	-
Total	3018	481	16

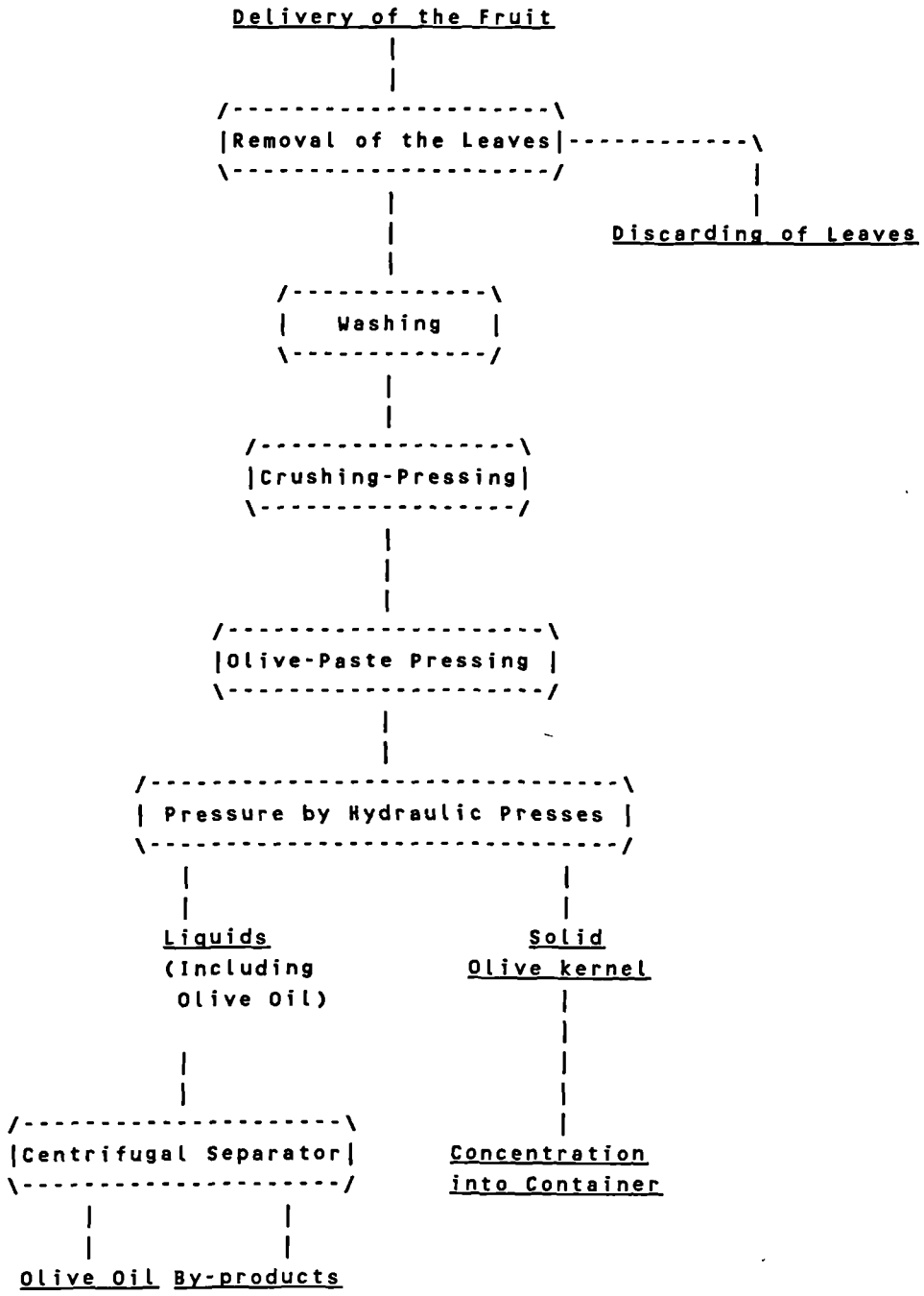
Source: Agricultural Bank of Greece, 1975 Survey

Table 4.4: Regional Distribution of Oil-Mills, 1988.

Administrative Areas	Provinces	Cooperative Mills	Private Mills	Total Number	Total Capacity (kgr/hour) Cooperative	Private
East Macedonia and Thrace	Evrou, Kavalas, Dramas, Serron	10	9	19	19,900	11,100
Central & West Macedonia	Halkidikis, Kilkis, Thessalonikis	5	35	40	7,700	31,800
Epirus-Kerkera	Preveza, Arta, Kerkera, Thesprotia, Lefkada	32	314	346	34,000	171,600
Thessalia	Larisa, Magnesia	10	50	60	22,500	65,300
West & Central Sterea	Fthiotida, Eboea, Viotia, Fokida	45	300	345	60,300	338,650
East Sterea and Aegean Islands	Attica, Keklades, Lesbos,Hios,Samos	73	285	358	130,600	217,600
Peloponnesos	Messenia, Lakonia, Elia, Korinthia,	156	1174	1330	247,850	1014,600
Crete	Hania, Heracleo, Rethimno, Lasithi	182	299	481	307,200	495,550
Total		513	2,466	2,979	833,050	2,346,200

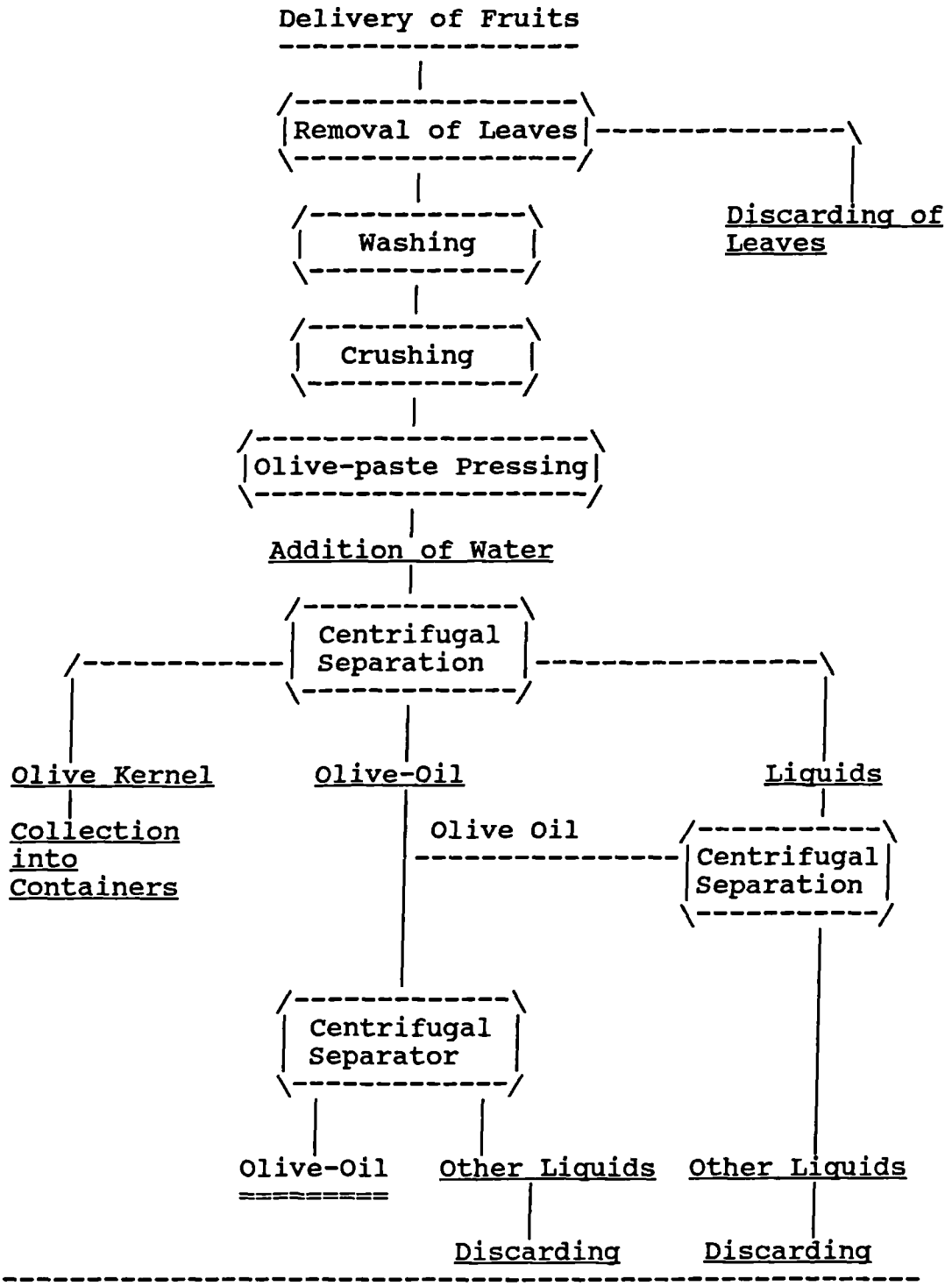
Source: ABG and Ministry of Agriculture (YDAGEP), 1988 Survey

Figure 4.1: The Process of a Classical Oil Mill.



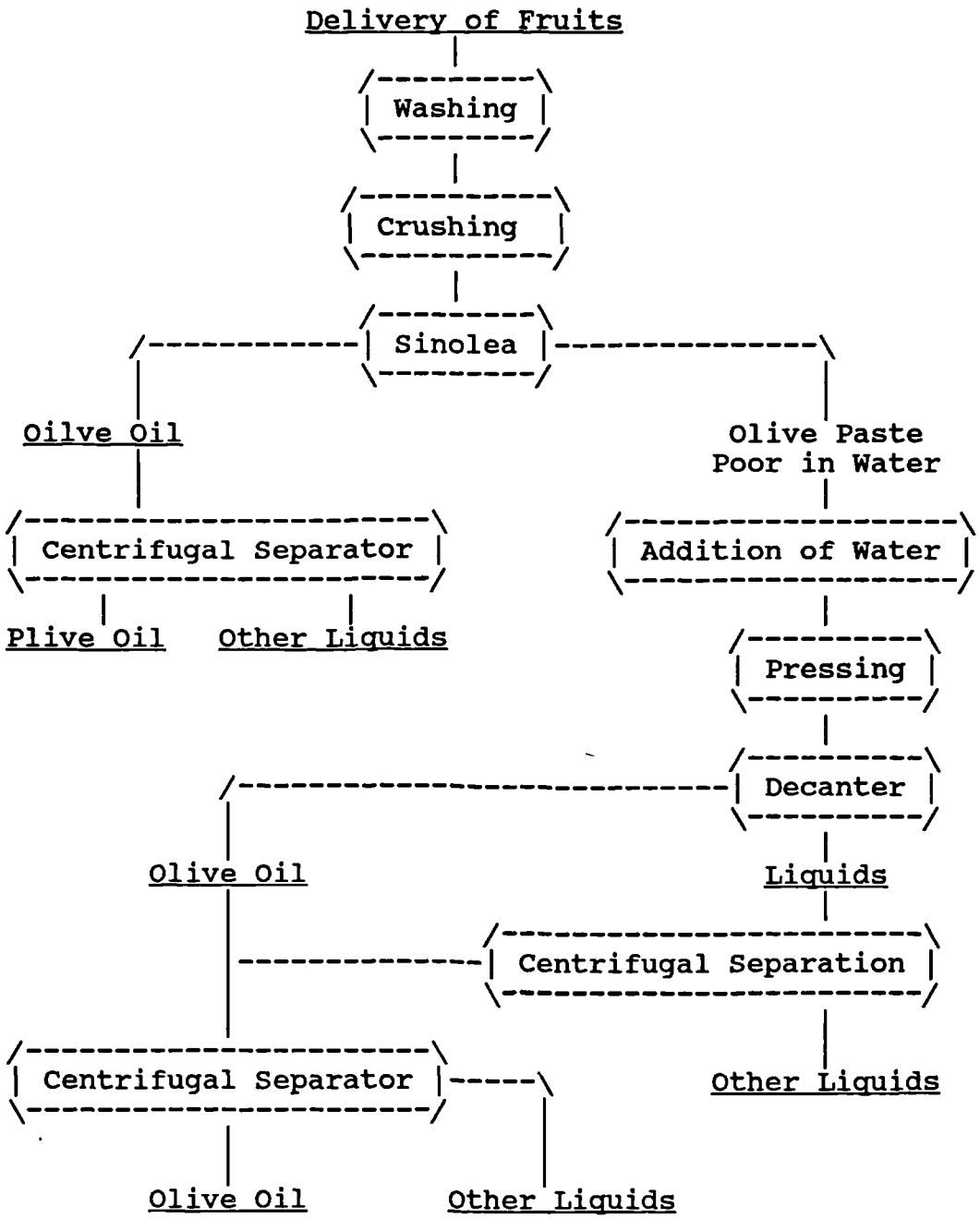
Source:A.Kiritsakis,The Olive Oil,(Thessaloniki,1988)p.112

Figure 4.2: The Process of a Centrifugal Oil Mill



Source: A.Kiritsakis, The Olive Oil,(Thessaloniki 1988), p.113

Figure 4.3: The Process of a Mixed Oil Mill



Source:A.Kiritsakis,The Olive Olive,(Thessaloniki 1988) p.113.

PART TWO

THE DEVELOPMENT OF URBAN PROCESSING

IN THE OLIVE INDUSTRY

CHAPTER FIVE

THE CAP REGIME AND SECOND STAGE PROCESSING OF OLIVE-OIL

Introduction

Chapter Five investigates the process of production diversification within the EEC oils and fats industry, focusing upon the case of Greek olives. My other - and related - concern is to examine the CAP price support mechanism as applied to second stage processing in the olive producing member States. I argue that restructuring in the EEC oils and fats industry has meant growing concentration of economic power in the hands of multinational corporations. Furthermore, this concentration has tended to be combined with a movement away from olive-oil to oil-seeds. On the other hand, the CAP price support scheme has been designed to maintain current levels of olive-oil consumption in the Community. Its effectiveness differs depending on the structural characteristics of the member State responsible for the production.

Section One shows that the EEC oils and fats industry is facing difficulties arising from certain domestic production deficiencies. Yet the EEC-wide olive-oil industry - its main competitor - is in a surplus position. In fact the oils and fats sector is facing the prospect of production substitution away from olive-oil towards oil-seeds oils as well as going through a phase of capital restructuring. The Greek case suggests that this process is now well under way

through the medium of the multi-nationals which operate in the olive industry of the country.

Section Two examines the Common Agricultural Policy's (CAP) price support scheme especially designed for the second stage processing of the food industry. The administrative application of the scheme is discussed with reference to Italy and Greece in an attempt to highlight key operational weaknesses. I argue that by shaping the trade environment in which they operate the CAP price support scheme plays a decisive influence upon the firms engaged in second stage processing.

Section Three considers the production structure of second stage processing in Italy and Spain - Greece's main olive producing competitors. It is contended that the structural organisation of production impinges directly upon the present and future of the respective olive industries in terms of competitiveness. In both countries there is a strong multinational presence, while cooperative ownership is modest currently accounting for only some 10-11% of output. However, in the Spanish processing industry 37% of the refineries are also olive-oil extractors. This implies relatively lower costs of production due primarily to advantages arising out of vertical integration. Italy, on the other hand, retains the traditional production characteristic whereby first stage processing (oil-mills) is located in rural areas but the second stage (refiners, packers) is situated in urban centres.

In Section Four a cross-sectional study has been undertaken in order to reveal some of the most important features of industrial olive-oil production in Italy, Spain and Greece. An attempt is made to shed light on the implications of the EEC price policy for the domestic markets of these countries. It is argued that structural characteristics are such that they tend to reduce the cost of production and therefore affect competitiveness amongst the three member States.

5.1 A General Overview of the EEC Food and Drink Industries

In terms of macro-economic aggregates, the food and drink industries in the EEC form a major part of the European economy: employing over two million people (Table 5.1), they account for 16.1% of the EEC's gross output, and 9.1% of the EEC's gross value added in manufacturing. The details of the breakdown are contained in Table 5.2 below.

Table 5.2: The Top 10 EEC Manufacturing Industries in 1977, (in terms of gross output and gross value added)

Industry[2]	% of all Manufacturing[1] Gross Output	Gross Value Added
Food and Drink Processing[3]	16.1	9.1
Chemicals	11.7	10.4
Mechanical Engineering	9.1	11.1
Electrical Engineering	8.9	11.4
Motor Vehicles	8.8	9.4
Metal Refining and Processing	7.8	6.0
Misc. Metal Products	6.9	8.4
Paper, Printing & Publishing	5.1	5.9
Textiles	4.3	4.4
Bricks, Glass, Pottery etc.	3.6	4.6

Notes:
1. All Manufacturing : NACE Orders 2-4
2. EEC definitions of Industry
3. Food and Drink Processing : NACE Orders 41-42 less 429 (tobacco).

Source: FDIC Bulletin No.23, March 1983, p.35.

In the mid-1980's (1986 to be precise) the food and drink industry in the Community employed some 2.5 million people and had an estimated turnover of about 365 billion ECU.(1) Today the European food and drink industry is made up of a mixture of sectors and firms with very different structural and operational characteristics. This variety is due to the diversity of market demand, market size and the technologies and traditions specific to each sector and each country. According to a recent report on the EEC food and drink industry, three factors have brought about major structural changes. These are: the growing interpenetration of the economies of Members States; slow growth rates

- or even decline in certain branches of production; and growing competition at international and Community levels.(2)

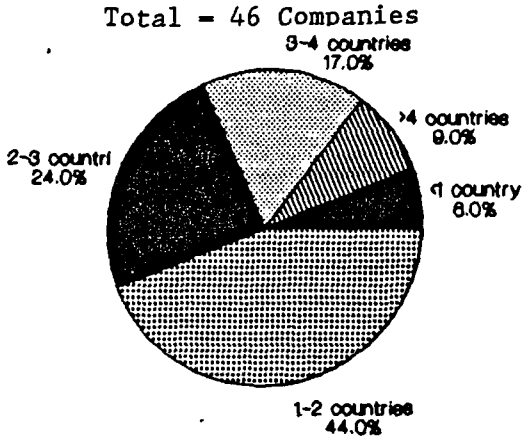
One important factor is the tendency towards increased concentration. In most member state, and in most branches of the food and drink industry, there are fewer firms and the average size of these firms has increased. As a result, the degree of industrial concentration has grown continuously. However, as we would expect, there are major differences in concentration levels among the various European countries. The U.K food and drink industry is the most concentrated in Europe.(3) The structures of the food and drink industry in north European countries are very different from those straddling the Mediterranean, notably Italy, Greece, Spain and Portugal, where most firms are small, independent and oriented towards a single product. Furthermore, concentration levels are much higher within national markets than in the Community as a whole, due to remaining trade obstacles within the E.E.C.(4)

Widening our perspective to the world food industry, the last ten years has been a remarkable period.(5) From 1976 to 1986, over a hundred major mergers of $50 million or more took place in the food industry. Moreover, the pace of merger activity seems to be quickening. From 1984 to 1986, nine acquisitions of over $1 billion occurred. Global food corporations are being formed through the acquisition of ever larger companies. In these days of debt financing, nearly any large food company could become the target of a takeover bid. U.S companies, by and large, have led this trend towards

consolidation, and they continue to dominate the world food industry. Over thirty U.S food companies have annual sales of $1 billion or more. With the exception of Unilever and Nestle, the world's top ten food groups are all U.S-based firms.(6)

By way of contrast to the U.S experience, European companies operating in the Common Market do not seem to generally pursue an EEC-wide strategy. Out of a sample of 46 major EEC-based food companies, half have a presence in only two or less countries. (Figure 5.1).

Figures 5.1: Average Major Countries per Product Line for EEC-based[1] Companies



Notes: 1. Major EEC countries are France, Germany, Italy, Spain, U.K; EEC-based companies are defined as those whose headquarters are in the EEC.

Source: Derived from The "Cost of Non-Europe" in the Foodstuffs Industry. Vol. 12, Part A. Commission of the European Communities, Brussels, 1988, p.41

Only about one in ten companies follow an EEC-wide strategy with a presence in the five largest EEC countries. EEC food companies by and large have remained nationally focused which means that as a result few

major EEC companies enjoy high brand strength and wide geographic coverage.(7) Instead many companies operate in one or a small number of countries, with both strong and weak brand positions. It is mainly historical reasons that account for this state of affairs. Differences in taste, culture and language - as well as the national characteristics of the retail trade - have all contributed explicitly to the national focus, and thus to the relative fragmentation of the EEC food industry. But other factors, such as trade barriers and government "protection" of domestic companies from foreign competition and control, have also played a part. Of course with the creation of a single market in 1992, all of these elements should decrease in importance.(8)

It therefore appears likely that "1992" will trigger off a major consolidation and restructuring of the food industry in the EEC similar to that already experienced in the U.S.A. However, while consolidation and restructuring is certain to take place in the EEC food industry as a whole, the oils and fats industry is faced with the prospect of continuing with a highly diverse internal production structure but now accompanied by capital restructuring. More specifically, the EEC oils and fats industry in 1989 crushed some 23 million tonnes of oil-seeds (excluding olives), yielding an output of 6,250,000 tonnes of crude oils and fats and 16,500,000 tonnes of protein meal.(9) Depending upon the type of raw material used, the value added ranges from 25 to 75 ECU/1000kg of seeds.(10) However only about half of the seeds used are supplied from internal EEC agricultural sources, while the other half is imported from outside

especially the USA, Brazil and Argentina. In addition to oil-seed crushing, the oils and fats industry each year also processes some 6.5 million tonnes of crude oils and fats of vegetable and marine origin (again excluding olive-oil).(11) Table 5.3 pinpoints some of the main indicators of the vegetable and animal oils and fats industry over the period 1980-1985.

Table 5.3: Main Indicators, Vegetable and Animal Oils and Fats[1] (in Million ECU)

	1980	1981	1982	1983	1984	1985
Apparent Consumption	11886	13171	14230	15017	16676	16635
Total Production	9398	10187	10792	11172	12508	13166
Employment	49689	47501	46259	44733	43958	42955

Notes: 1. EC-10 Excluding Spain and Greece

Source: Panorama of EC Industry, Commission of the European Communities, 1989, p.17-8.

We can observe that the value of consumption consistently exceeds that of total production in the EEC, while employment has been declining continuously. Even though the industry is highly competitive and is probably reasonably efficient in terms of transforming the supply of raw material inputs into a regular flow of outputs, and also in the final disposal of the processed products, it faces major difficulties. These are mainly due to the problem of obtaining a satisfactory supply of raw materials, both quantity-wise and at prices which are compatible with the final prices of the

resulting processed products - the latter being imported and sold on the domestic market at price levels determined by world market conditions.(12) Table 5.4 presents an outline of the European Oils Industry as in 1986.

Table 5.4: Overall Results of the European Oils Industry in 1986. (1000 tonnes)

	Industrial Production of Oils and Fats	Imports Extra-EEC	Exports Extra-EEC	Apparent Consumption
Fluid Oils	5987	437	2036	4388
Lauric Oils	102	803	28	887
Linseed Oil	138	8	40	106
Castor Oil	23	72	4	91
Palm Oil	N/A	915	14	901
Total	6250	2235	2122	6363
Protein Meal	16316	17963	2410	31872
Fish Oil	132	559	28	633
Fish Meal	450	923	284	1089

Source: FEDIOL, in Panorama of EC Industry, 1989 p.17-10.

It appears from Table 5.4 that in most cases the consumption of oils and fats within the EEC exceeds the total industrial production. As mentioned EEC oilseed production represents only 50% of the volume of seeds processed within the Community. As a result the EEC oilseed

industry must turn to external markets for its supplies, either to industrialised nations for soyabeans, sunflower-seeds, linseeds and occasionally rape seeds, or to developing countries in the tropics for groundnuts, copra, palm and palm kernel. In addition to its domestic oil and fat production, the industry also uses imported crude oils and fats, mainly palm oil, coconut oil and fish oil.(13) It therefore appears that deficiencies in the domestic (EEC) production of oils and fats lie behind the difficulties which face this industry.

By way of contrast to this EEC-wide situation in oils and fats the olive-oil industry of the Community, which is essentially concentrated in the three Mediterranean countries of Italy, Spain and Greece, and to a much lesser extent Portugal and France, runs a surplus. That is the total annual supply exceeds domestic consumption in the EEC countries. Table 5.5 presents the olive oils and edible olive residue oils results for 1986-1987.

Table 5.5: Olive Oils and Edible Olive Residue Oils, 1986-1987 (in thousand tonnes)

	Virgin and Refined Olive-Oil	Edible Olive Residue Oil	Total
Stocks 1.11.86	577	89	666
Production	1190	96	1286
Imports[1]	20	0	20
Total Supply	1787	185	1972
Consumption	1326	100	1426
Exports[1]	92	54	146
Stocks 31/10/87	369	31	400

Notes: Extra-EEC Imports and Exports

Source: FEDOLIVE, in Panorama of EC Industry, 1989, p.17-12.

We can observe that in the year 1986-1987, total supply of olive-oil exceeded total demand (i.e. consumption plus exports) by no less than 369,000 tonnes. Over 80% of the olive-oil produced is consumed in the producing countries themselves.(14) Spanish consumers are accustomed to blends of refined and virgin oil. The Greeks and the French consume mainly virgin olive oil. Italian consumers are divided almost equally between virgin oils and oils blended either with refined olive oil or olive residue oil.(15)

Because of this state of affairs within the two competing oil-seeds and olive-oil sectors of the EEC oils and fats industry, one might logically expect to witness an attempt to diversify production in

the olive producing States. Of course, any such attempt involves restructuring and has to face up to the problems of managing considerable social change. However, given the traditional nature of olive growing in the Mediterranean countries expressed in the strong attachment of the olive growers to the crop, one would also expect this process of restructing to be slow and rather painful. We may now pose the question of the agency which is most likely to be in the vanguard of this movement - the relevant multinationals.

5.1.1 The Multinational Presence

In historical perspective one of the most significant factors in the rise of multinational enterprise has been the process of concentration.(16) Economic historians have assessed the changes in economy and society during the late nineteenth century as a shift from a one nation to a multi-nation industrial system. They have discussed the rise of managerial capitalism, the advent of organised capitalism and the rise of the corporate economy.(17) Historically, the motive of capitalist enterprise to invest in foreign companies can be traced directly (or indirectly) to the consolidation of acquired markets, to the defence of already existing market positions, and to the penetration and opening up of new profitable markets. Among the most important considerations substantiated in the literature we may cite: the control and exploitation of sources of raw material; the strategy of domination of the entire world market or part of it for a certain product or range of products; participation in another country's industrial production in order to evade tariffs which would be imposed

if the goods were imported - but also, of course to take advantage of privileges and preferences extended to industrial enterprise in host countries; to shift production to low-wage areas of world in the desire to achieve cost reductions; and to obtain a foothold in one country by participating in its economic life for further expansion into other countries.(18) It appears that multinational presence itself signifies a realization of economic aspirations within a politically suitable environment.

In the 1960's the less developed countries of the Third World, in an attempt to increase their national sovereignty over investment controlled outside their territory, exerted pressure in the United Nations Organization in favour of the implementation of a code of conduct designed to regulate relations between multinational companies and host governments.(19) Their efforts led to the establishment of the United Nations Centre on Transnational Corporations in 1973. The aim of this institution was to assist "in the devising of a national and international policy towards multinational companies".(20) It was felt that in this way their "influence on domestic political processes in decision-making" would be minimised and their activities would be channelled more positively and effectively "to establish a New International Order".(21) Therefore, since the 1960's a new approach has been gaining ground which does not ask whether concentration is an inducement or an obstacle to economic development; the main issue is the misuse of economic power by the MNC's. This is because the process of concentration of economic power, extending from cartelization to mergers which has been taking place since the turn of the century, has

proved to be very strong.(22) The present advanced stage of multinational business structures is the outcome of a century of intensive change in capitalist economies and, as argued by Heininger, this has to be set against the background of scientific and technological developments which made possible mass production, distribution, employment and consumption on a global scale.(23)

In the world food and drink industry the presence of multinationals is very obvious and prominent. In the OECD countries the U.S.A. has been the largest exporter and importer of food stuffs.(24) That country plays a decisive role in international investment in the food and drink industry. American multinationals cover 40% of F.D.I (Foreign Direct Investment) in food processing. Britain follows with 30%, Switzerland 15% and the rest of the OECD States follow with 15%.(25) The large U.S.-based companies and the other OECD countries increased their investment in third world countries to take advantage of the lower labour and raw material costs. Thus the main American multinationals engaged in food processing activities (such as General Foods, and Campbell Soup) have many subsidiaries in Central and Latin America countries. Among the largest multinational investors are Nestle of Switzerland which currently earns no less than 98% of its revenues from its activities abroad, and the Anglo-Dutch conglomerate Unilever, which earns 75% of its revenues from activities abroad.(26)

EEC strategy towards multinational company issues is typified by a series of specific legally binding supplementary measures to the

national laws of the twelve member countries. The European Commission adopted its programme on multinationals back in November 1973.[27] The need for European public control of multinational companies was reinforced by the perception that the nation State itself is an inadequate framework for responding to their impact. The background to European Community efforts to develop a coherent policy designed to deal with multinational companies was conditioned by a variety of factors. Among these the economic importance of Europe as both home and host region to multinational companies was clearly prominent.[28] The Community's consumer market of approximately 320 million (after the Spanish and Portuguese entry into the EEC) provides obvious attractions to non-European enterprise as well as home-grown businesses. The importance of control measures for MNC's worked out in Europe is that they have a direct impact on a large section of international companies at the headquarters or subsidiary level. Seventy of the world's 200 largest MNC's (by turnover) were shown to have their headquarters in the EEC, while the majority of the non-EEC companies have subsidiaries in one or more Common Market countries.[29]

A second factor which conditions EEC policy towards multinational companies is institutional. More specifically, it is the fact that the EEC presents an attempt to both devise a transnational market framework for MNCs and, at the same time, a legal framework for their behaviour within this framework.[30] Breaking down national trade barriers - be they tariffs, discriminatory product specifications or national procurement rules - has always been a key EEC priority and reflects the wider aim of building a multinational market for trade and enterprise

from scratch. However, an interventionist vocation in the EEC's major policy proposing institution, the European Commission, does exist. In the period 1958-70 this took the form of dismantling obstacles to market freedom.(31) But by 1970, when the EEC had completed the elimination of internal trade barriers while fixing a common outer economic frontier, circumstances and objectives began to change. A comprehensive programme was drawn up for the transition from Common Market to Community, involving in particular interventionist social and regional policies.(32) Before this programme was drafted at the Paris European summit in late 1972 two events influenced the climate of future EEC policy making. The first was the Arab-Israeli conflict of October 1973, which created a more defensive, protective and interventionist climate for EEC policy. The second was that in January of the same year, the EEC was enlarged to include Britain and this ensured a slow-down in the movement towards greater political integration. But by the end of the 1970's European integration had, from a business standpoint, become equatable less with transnational market freedoms as with a framework for imposing new transnational business "responsibilities".(33)

The third factor is political i.e. the gradual politicisation of the MNC issue by groups operating at a European level especially trade unions and "socialist" political parties.(34) The multinational issue also reflects the almost inevitable politicisation of business decision-making in an economy where a company's relations with government can be as important as its normal relations with the traditional market place. Companies themselves, have stepped up their

"governmental" departments. In Brussels, company lobbying of the EEC headquarters reflects the admission by the business world itself that the conduct of international business is now part and parcel of politics. Representatives of American companies such as IBM, United Brands and Ford compete with European rivals like Siemens, Unilever and Fiat for the ear of the Eurocrat in Brussels.(35) Another major force behind the political activation of the MNCs issue (and not just in Europe), is the activities of the trade union movement based in the Common Market countries. The collective strength of national unions is brought to bear on the EEC via the European Trade Union Confederation which, like the Common Market, has its headquarters in Brussels. Almost from the moment of its inception (in 1973), the ETUC has been the strongest non-governmental supporter of EEC measures designed to curb international business.(36) Paralleling the emergence in the mid-1970's of the ETUC as a major EEC lobby, and the embryonic interest shown by the European outposts of national political parties, the business world itself has responded in kind. By the end of the 1970's, a host of international companies were following the lead of firms like IBM, Ford, Union Carbide and CPC in setting up high-level "watchdog" offices in Brussels to monitor Community policy making. Also the diplomatic presence of "the permanent representative of FIAT to the European Communities" captures well the growing convergence of public policy and economic practice in the mind of the business community.(37)

Finally, there is the "national factor" to be considered. This reflects the attitudes of different governments within individual EEC member States to business regulation.(38) The issue is in fact multi-

faceted, breaking down into areas like worker participation, job protection, MNCs employee information - items which are also key policy focuses in other arenas such as the United Nations and the OECD.(39) EEC governments, whose say is final on policy formulated by the European Commission, differ quite markedly in their assessment of the role of government in the market place. The U.K's current attitude, for example, clearly reflects its heavy economic stake in overseas private investment. Along with West Germany, it is a supporter (together with the USA) of a voluntarist approach to international regulation. The Italian government also shows great reluctance to subscribe to arrangements which could injure its chances of increasing national economic activity via the attraction of international business. Industry representatives often play key roles in negotiating MNC - related legislation being prepared by the EEC.(40) In Greece, the evidence in the 1970's suggests a liberal attitude towards foreign investment.(41) The presence of multinationals is evident in most sectors of industry but the "socialist" government in the 1980's evinced a desire for greater national control within the context of the European framework for national control of MNCs.(42) Actually, since 1985, the Greek government has violated the EEC treaty, Article 7, and taxed multinational profits - as reported by the German company Verband Deutscher Machinenund Anlagenbau (VDMA) to the European Commission.(43) By the early 1980's there were 260 manufacturing subsidiaries of foreign-owned MNCs in Greece. The most important subsidiaries included: in vehicle assembly (Biamax and Steyer), petrochemicals (Ethyl Hellas), machinery workshops (Kouppas), tyres (Goodyear) and Vegetable fats (Elais of Unilever).(44)

In the Greek olive industry there are two subsidiaries of multinational organisations, Minerva of Patterson-Zohonis, and Elais of Unilever. Unilever is among the 40 largest companies in the world. The basic products of the company include soap, non-soapy detergents (NSDs), margarine, cooking fats and oils, frozen and canned foods and also products such as cattle feed and paperboard.(45) In such an industry there is little scope for moving components round the world in search of cheap labour. Moreover, freight on raw materials such as vegetable oil, animal fats and chemicals to the Lever soap works in Britain or the Van Den Bergh or Jurgens margarine factories in Holland is so small in relation to the value of the product that there was no advantage in manufacturing these products in the tropical countries from which they came in order to distribute the product throughout the world.(46) So, the nature of Unilever ensured that it had no incentive to establish export-oriented subsidiaries round the world as it was clearly preferable for it to manufacture in its home factories. The only reason for setting up Unilever subsidiaries - and certainly this is the case as far as the Greek olive industry is concerned - was the production and processing of goods for local consumption.

The same line of reasoning holds for the Patterson-Zohonis subsidiary, Minerva. Minerva was first established in 1906.(47) It was a family business known by the name of its owner A. Sahpalos. Until 1965, its activities focused on packaging and distributing domestically produced olive-oil. After 1965 the company expanded its internal organisation and included olive residue oil and oil-seed oils production. In 1971, the company entered margarine and cooking fats

production for the first time. For the production of margarine, corn seed was imported - mainly from the U.S.A. Minerva became one of the most profitable - as well as the best known businesses in the olive industry.(48) In the late 1970's its owner died and the members of the board of directors decided to sell the company off to the British multinational Patterson - Zohonis which is based in Manchester. Since 1977, Minerva is 100% controlled by the English multinational as a subsidiary.

Elais, on the other hand, started out quite differently. It was established in 1920 by six Greek chemists - not as a wholesaling distributor company like Minerva - but as a refinery of olive-oil while at the same time, running an oil-seed oil production plant.(49) In 1947 the company sold branded olive-oil for the first time. Between 1950-1960, production of animal fats and margarine was undertaken by Elais. In 1962, when Greece signed an agreement with the Treaty of Rome Unilever became a shareholder in Elais. In 1976, the management of the company was totally left to Unilever and since 1985, Elais is a full subsidiary (of Unilever). The two companies, Elais and Minerva are in competition with each other and their presence in the Greek olive industry seems decisive. This is because the two multinationals have a strong tradition of oil-seeds oils, margarine and soap production, all substitutes or by-products of olive-oil, and they entered the Greek olive industry in an organised attempt to expand their markets for these products and so increase their profitability. Figure 5.2 shows Minerva's sales volume over 1981-1987.(50) Olive-oil production increased in 1982 and then, until 1985 there has been a

continuous fall in production accompanied by an increase in oil-seed oils, olive residue oil and margarine production. From 1985 onwards we observe a rise in olive-oil production followed by a further increase in the quantities of its substitutes. Therefore, a diversification of Minerva's production started in 1981, the year of Greece's accession into the EEC, when production of oil-seed oils was half of olive-oil. Since then production of oil-seed oils has more than doubled.

In Elais the same picture appears to hold. There has been a reduction in olive-oil production between 1982-1985, from 13,000 tonnes to 10,000 tonnes.(51) By 1988 olive-oil production reached 15,000 tonnes but at the same time, oil-seed oils production rose by far more. Elais's total annual average production is 55,000 tonnes. Out of this, 30,000 - 35,000 tonnes is oil-seed oils production, 15,000 tonnes is olive-oil production and up to 5,000 tonnes is soap, margarine and butter production.(52) Furthermore, what is really indicative of Elais's line of direction within the olive industry is its involvement in the early 1980's in a project of land diversification towards oil-seed cultivation. This project concerned several thousand hectares of sunflower-seeds cultivation in northern Greece. Elais rendered financial help and expertise to certain large producers.(53) This, together with other similar projects, resulted in a large increase in the area under sunflower-seed cultivation: between 1982-1986 it rose nationally from 4,800 ha to 79,100 ha.(54) This represents a spectacular rise under any circumstances, and given the traditional preference for olive-oil among Greek consumers this trend is little sort of being remarkable.

Figure 5.3 presents a comparison of "profitability" between Elais and Minerva. "Profitability" has been chosen as an index on the traditional assumption that the goal of a business is profit maximization. In this case it is defined as pre-tax profit in proportion to the magnitude of the company's operations.(55) We may observe from this proximate measure of performance that during the years of intense diversification 1980-1987, profitability has increased for both. Elais remains the largest and the most profitable of the two. However, even though they have diversified their production the two companies managed to maintain their important position in the olive industry as far as olive-oil production is concerned. It seems to me, that it is partly due to the reputation they gained in the olive oil market that they have been able to impose such a rapid increase in oil-seed oils supply upon Greek consumers. This issue will be discussed more thoroughly in Chapter Eight.

EEC rules on competition apply to all industrial sectors governed by the EEC Treaty, as do the attempts to harmonize national laws and regulations which could potentially hinder the free movement of goods between the member States and the attainment of a Common Market.(56) The operations of the EEC have implications for the business activities of firms operating in the food sector as for all other European companies. However, in the case of the former (the food companies), the operation of the CAP has a major influence upon raw material prices and also upon the terms and conditions under which processed food products can be traded across existing national borders.

5.2 The C.A.P and Second Stage Processing

The C.A.P has been the subject of much comment and study, but it is only in recent years that the EEC's own institutions have paid attention to the impact of the C.A.P on food companies. Reflecting this, most published studies of the C.A.P have all but ignored the food industries - although that is now beginning to change.(57) There are two areas of policy under the C.A.P : price support and structural adjustment, but it is the former which is more important. This is so with respect to expenditure and also because price support schemes govern EEC policy in many different sectors and policy areas. These areas include : the balance between advantaged and disadvantaged member States; the EEC's international relations with developed and developing countries; the viability of the farm sector; and, not least, the food industries and their consumers.(58)

Concerning second stage processing in the food industries it appears that on the one hand, price support under the C.A.P involves raw materials prices set at relatively high levels (vis-a-vis international prices). As a result, food companies try to pass on to their consumers raw material increases through retail prices in order to maintain acceptable profit margins. On the other hand, the food companies must be convinced of the desirability of willingly operating the various C.A.P support mechanisms.

The firms which voluntarily operate the C.A.P are the ones engaged in first stage processing. That is the processing of agricultural raw

materials into products which are themselves eligible for C.A.P support such as olive-oil, white sugar, butter and so on.(59) The interests of the farmer and the first stage processor, would seem to be interlinked, and one might reasonably expect that both would wish to see the maintenance of a high level of activity in the locally based farming enterprises. However, any contraction in the farm sector and hence the level of raw material produced, would affect adversely the business interests of the first stage processor. On the other hand, the second stage processing firms are reluctant operators of the C.A.P. This is because these firms obtain their raw materials from rural areas, (as is the case for olive-oil) and consequently find that the C.A.P, in determining the conditions under which products may be bought or imported, limits their freedom of manoeuvre. Graham referred to the contraction imposed upon the U.K cane sugar refiners during the 1970's, which stemmed in part from the exclusion of Australian raws from the EEC;(60) Locke pointed to the difficulties meat processors face in obtaining beef of suitable manufacturing quality;(61) and Rees discussed the change in practice in the U.K milling industry brought about by the EEC-induced price differential between EEC and third country wheats.(62) Whether first or second stage processors would wish to see a lowering of C.A.P support measures and the liberalising of trade is another issue. Particularly if they believe that high retail prices affect adversely EEC sales or profitability, or if they find difficulty in recouping their extra raw material costs in the form of export refunds on their sales to third countries.

In the olive industry, part of the Community's aid scheme paid to the packers in order to keep their retail price at a level which would sustain consumption, is the Consumption Aid. The Consumption Aid for olive-oil has its origins in a decline in consumption which began in the mid-1970's. Its aim was to maintain the level of consumption without resorting to a substantial increase in the rate of Production Aid. The aid first came into operation on 1 April 1979. It is calculated as the difference between the production Target Price reduced by the Production Aid, and the Representative Market Price. To ensure maximum impact on actual market prices, the aid is paid to the packaging units.(63) Of the estimated total of 1,250,000 tonnes of olive-oil consumed annually in the Community (chiefly concentrated, in Italy, Greece and Spain and, to a lesser extent, in France and Portugal) less than half qualifies for Consumption Aid. While a steady increase in the oil benefitting from the aid has been registered since 1979, a large percentage of consumption does not qualify for benefit despite the fact that, in Italy and Greece, the aid amounts to approximately 25% of the retail price.(64)

The explanation usually offered for this is firstly the traditional preference of many consumers in Italy and Greece for purchasing the oil direct from the producer or the mill, and secondly, the significant amount retained and consumed by producers themselves. Table 5.6 summarises the evolution of expenditure on the olive oil market from 1979. The administrative procedure for the implementation of the aid is outlined in a General Council Regulation supplemented by implementing the relevant regulations of the Commission.(65) The main

features are that the packaging units must be approved by the national authorities, and possess a minimum capacity of 6 tonnes per day. They should also be operational for at least 150 days each year and package at least 60 tonnes during that period. The oil must be packaged in containers of 5 lt or 1 lt. The containers must be sealed and have the identification number of the packaging unit printed thereon. They must also clearly state that the oil benefitted from Consumption Aid. Such containers cannot be subsequently re-used.

Member State have instituted a system of supervision in order to ensure that the olive-oil qualifies for the aid.(66) Where recognised trade organisations are used to carry out checks the member States define the manner of their involvement. Their function is to verify, on the actual premises of the approved packaging units indicated to them by the member States, that stock records are kept in the prescribed manner and that the data given in these stock records are precise. However, these checks do not relieve the authorities of the member States from undertaking a systematic inspection of the stock records of the approved packaging units.(67)

In Italy the overall responsibility for the administration and control of the aid lies with A.I.M.A.(68) The Italian authorities have entrusted the management of the scheme to four organisations which, between them, represent almost all the packing units in Italy. Two together represent some 95% (in terms of capacity) of the packaging units. One of the small organisations also acts on behalf of oil

producers and is, in fact, the largest of the four organisations recognised for the purpose of the Production Aid scheme. There is competition for membership among the four recognised organisations. The tasks assigned to them are contained in an agreement drawn up between them and A.I.M.A. The main tasks include the verification of the quantity of oil packaged and put on the market and qualifying for aid; the presentation of a summary application for all the firms which they represent together with the receipt of the amount of the aid; the distribution of the aid (net of retention) to the units entitled to it; and the carrying out of controls in the packaging units as provided for by ministerial decrees. Requests for recognition by packaging units are investigated on the spot by the Guardia di Finanza (acting on behalf of the Ministry of Industry).(69) In 1982, 503 units were recognised and in 17 cases recognition was withdrawn. According to information supplied by the Italian authorities, during the course of 1982 visits were made to almost all the firms, during which some 3,000 monthly applications for aid, out of a total of 3,700 were verified. By the end of 1983, a total of 38 administrative sanctions had been imposed for irregularities in the keeping of stock records and 8 for excessive applications for aid. Sums wrongly claimed amounting to 74,000 ECU (127 cases) were in the course of recovery.(70) In four cases, recognition was withdrawn for periods varying from 3 to 12 months as a result of unjustified applications, and 33 proceedings had been instituted in the courts, of which about half emanated from controls performed independently by the Guardia di Finanza and other State agencies. Despite these findings not a single case of fraud or even of irregularity pertaining to Consumption Aid has been notified to

the Commission under Regulation (EEC) No. 283/72.(71) In view of the data supplied to the Court of Auditors by the Italian authorities relating to the results of its inspection activities, this is surprising - to say the very least. It appears that the Community chooses not to take an active role in ensuring the enforcement of this regulation. It seems to me that this issue can be more appropriately looked at from a political perspective. Considerations should take into account the power structure of the Italian olive industry within the national polity and its domination by interests of criminal organisation including the notorious MAFIA.

In the Greek case, Consumption Aid was introduced under the provisions of the Act of Accession, from 1 November 1981. As in the case of Production Aid the rate of Consumption Aid was gradually aligned to the Community rate as follows:(72)

1980/81 and 1981/82	-	one fifth of the full rate.
1982/83	-	approximately 38% of the full rate.
1983/84	-	approximately 58% of the full rate.

From 1 November 1985 the full rate was applied. The Greek intervention agency (YDAGEP) has overall responsibility for the administration and control of the aid. Two trade organisations, namely SEVITEL and ESVITEL, have been recognised but firms not represented by them may also apply directly for the aid to YDAGEP.(73) In 1989 there were 160 firms who were members of the two trade organisations - approximately 80 firms in each. Verification of the applications is carried out by

YDAGEP officials and by regional inspectors of the Ministry of Agriculture. In all approximately 60 officials are involved although their duties are not confined to control of the Consumption Aid. The Greek authorities indicated that control visits are undertaken on a monthly basis in the case of the large packaging firms, but much less frequently in the case of smaller firms.(74) It was stated that the verification work centres essentially on a reconciliation of physical stocks with the stock records. Controls on packaging material and the taking of samples for analysis are also carried out. However, no evidence for extensive control was found on the supporting vouchers examined by the Court of Auditors in 1985.(75)

As EEC agricultural output has continued to expand, with very much slower increases in consumption, the level of self-sufficiency has increased. This has involved a reduction in imports and an expansion of exports of C.A.P goods.(76) Hidden within these global changes, national self-sufficiency rates and import-export balances may well have developed according to different patterns - partly because of different price levels supported by the MCA System and the payment of State aids.(77) To what extent these changes are simply due to a supply response as a result of EEC and national policies for agriculture, or to unforseen implications deriving from the operation of the C.A.P for the food industries, or as a consequence of the relative efficiency of the national food industries, is an empirical question which has yet to be investigated. There can be no doubt however that the C.A.P is an important influence in the shaping of national supply responses.

Rees, for example, has pointed out the increasing dependence of the U.K grain market on exports. He refers to the "fortuitous combination of MCAS, market prices and export refunds" and the availability of export credits, that condition the activities of business oriented firms.(78) Some C.A.P policy changes may be country specific; others will affect industries right across the Community - as for example the suspension of the advance payment of export refunds in late 1983 due to the financial (budgetary) crisis faced by the Community. A similar case would occur if the EEC were forced by GATT to reduce the payment of export refunds on processed food products. Export dependence bears direct effects on the businesses operating in the olive market. Export refunds and MCAs are features of the olive export market and changes in their magnitude have adversely influenced olive-oil exports of member States. The effect on the exports of the Greek second stage processors will be discussed in Chapters Seven and Eight of this Study.

Further problems with the C.A.P arise when its support mechanisms embrace only a section of the market - being commodity specific the market regimes tend to cut across market segments and hence lead to distortions. For example, the butter and margarine prices are influenced in quite different fashions by C.A.P. Similarly, seed-oils and olive-oil prices are influenced in such a way that certain seed-oils are priced only as little as one third of the olive-oil prices.

In addition, a managed market is, by its nature, subject to administered change which may be difficult to foresee, and therefore difficult to guard against. Changes in the direction of policy,

basically undertaken at the behest of the Council, may involve the level of price support. Changes in detail, often with major implications for the firms concerned, are more likely to be the result of the Commission's action - for example the level of export refunds. All firms operating in the food industries obviously need to watch for changes in policy, levels of refunds, MCA, etc; and this may well mean that small firms are unable to engage in intra-Community, let alone extra-Community trade because of the burden it would impose on scarce managerial and information - gathering resources.

It appears therefore that the C.A.P price support scheme directed towards the second stage processing, can have a decisive influence upon the firms involved by shaping the trade environment. As will become evident in Chapter Seven, the firms operating in the second stage processing of the Greek olive industry rely for their survival on the C.A.P price support scheme. However, parallel to the price support scheme operations, there is the structural arm of EEC policy which, in the context of CAP, is directed towards the improvement of marketing and processing facilities of second stage processors in the olive producing member States.

5.3 Structural Similarities and Differences between Olive Producing Member States

The structural arm of the C.A.P was developed in the late 1960's in the context of the Mansholt Plan.(79) Its aims were to reduce pressure by promoting the improvement of agricultural structures, and by the modernisation of farms. Also there was EEC Regulation 355/77 which

aimed at improving marketing and processing facilities. The structural policy was therefore directed at individual farming units to speed up modernisation and efficiency and so enable the market support system to be geared towards the more viable units. Indirectly the increased efficiency and size of farms was expected to lead to the olive industry acquiring better quality supplies at a lower unit price than might otherwise have been the case.

In the second stage processing of olive-oil aid was given through E.A.G.G.F for the technological modernisation of the units. This was aimed at improving performance and transforming the old structures to new more competitive ones in anticipation of the 1992 economic union of the member States. The three largest producer countries of the Community, Italy, Spain and Greece have quite different production structures at the second stage processing and, this fact, in the context of the C.A.P, has several important consequences for the present (and future) of the individual olive industries in terms of their competitiveness.

In the case of Italy oil is currently refined and blended in some 74 units, 35 of which are located in the south, 16 in the centre and 23 in the north.(80) However, the production capacity of the 23 northern units is nearly 60% of the total as against 20% each in the south and the centre. Olive residue oil is produced in 141 units, 106 of which are located in the south, 25 in the centre and 10 in the north. In considering the market shares of the different brands, only about 35% of total olive-oil consumption is branded and sold through retail

outlets. The market shares that follow refer solely to branded products.

Table 5.7: Market Shares of Leading Brands of Olive-Oil, 1979 (% of volume)

Virgin Oil			Other Olive-Oil		
Manufacturer	Brand	% Share	Manufacturer	Brand	% Share
Carapelli	Carapelli	7	Alivar	Bertolli	20
Erba	Sagra	4	Sasso	Sasso	12
Alivar	Bertolli	3	Costa	Dante	10
Costa	Dante	2	Others	-	58
Others	-	84			

Source: Special Report No.2. "Edible Oils in Italy". Marketing in Europe, 224, July, 1981.

We observe that even the leading brands of olive oil do not occupy large market shares as far as virgin oil is concerned. On the other hand, we can observe a considerable degree of concentration in the market for refined or lampante olive-oil so that the three leading brands have 42% of the market.

More recent information puts the total number of first and second stage processing units in Italy at 2,200, of which only 475 are recognised for Consumption Aid.(81) This number though is continuously changing as more and more units are added. In 1980, there were 398

cooperative units in the industry which processed 10% of the total Italian production and accounted for 163,763 members. The production structure in the Italian second stage processing has not changed significantly since 1979. It is dominated by large company groups which run huge organisations at the national level. The largest group is Alivar which has some State involvement.(82) The largest private company group is Costa with smaller and medium size companies following. So, the production structure in the olive industry of Italy can be broken down into three parts.

The first consists of the large companies such as Alivar, Costa, Gruppo Oleario and Carapelli with branches at the national level selling highly priced branded oil, and spending large sums of money on advertising. The second part consists of medium sized companies which specialise by region, do not produce branded oils and their prices are generally lower. The third part includes small companies restricted to local consumption with the lowest prices; they base their sales on oils coming from specific regions of the country.(83) The large companies are mainly involved in the refining of the olive oil and the largest four account for no less than 50% of the market share. But as far as the production of Extra Virgin oils is concerned the market share of the largest four is only 14-16% and therefore there is plenty of scope for smaller companies.(84)

In the competitor industry of seed and vegetable oils, production is much more concentrated as these are now produced upon an almost exclusively industrial basis.(85) The Italian seed oils industry

consists of 94 oil extracting companies with a total average production capacity of 780,000 tonnes. The capacity of the 51 companies involved in refining is 760,000 tonnes. However, both industrial sectors are reported to be working at well below capacity : 58% and 63% respectively. The seed and vegetable oil industry is concentrated in the north, with 86% of the pressing units and 55% of the refineries located there. The market leader for seed and vegetable oils is Chiari e Forti, Star ranks second and Unilit is third.(86) However the positions of the major suppliers vary considerably in different sectors. Thus, for sunflower oil, Chiari e Forti's Guore brand leads with a share of over 50% of the sales volume; Van den Bergh (Unilit) has a 15% market share with the Maya brand, and De Rica has a 6-8% share with Maiss,. The market leader for peanut oil is Costa's Oio brand with a 40% share. Table 5.8 shows the market shares of leading brands which, although they might vary from year to year, generally have held their position to date.

Table 5.8: Market Share of the Leading Brands of Seed and Vegetable Oils, 1979 (per cent of volume)

Manufacturer	Brand	% Share
Chiari e Forti	Topazio, Guore	20 - 22
Star	Olita, Desy	14 - 16
Unilit	Gradina, Maya, Sol	12 - 14
Costa	Oio, Sico	7
De Rica	Maiss, Mare	5
Others		36 - 42

Source: Special Report No.2 "Edible Oils in Italy". Marketing in Europe, 224, July, 1981.

Looking at the ownership of the largest companies in the Italian oil seed sector it appears that at least one of them is a subsidiary of a multinational. Unilever owns Unilit in Italy just as it owns Elais in Greece. Unilit is located in Milan and is 100% owned by the Unilever group.(87) It was set up in 1979 through the merger of Van den Bergh and Lever Gibbs, founded in 1928 and 1965 respectively. The company has now four divisions : Lever manufactures detergents; Van den Bergh's division produces food products; Eliba Gibbs produces toiletries; and Atkinson is involved in perfumes and toiletries. In addition to the plant in Milan (which employs 3,500 people), the group has three other plants with a total workforce of nearly 2,000 people. The Van den Bergh division is located in Crema and operates a plant of 48,000 square metres with 637 employees. It manufactures the Maya, Sol and Gradina brands of seed and vegetable oil; margarine, for which it

is the market leader with the Gradina, Maya and Roma brands; cheese, with the brand Milkana; and Calve mayonnaise which is estimated to command a 50% share of the market(88). So, while in Italy, Unilever flourishes in the seed-oils sector, in Greece it retains a leading position in the olive industry while, at the same time, spending huge amounts on advertising and is consciously preparing the market for an increased off take of oil-seed oils production.

The other largest competitor member State is Spain. The production structure of its industry may be gleaned from Figure 5.4.(89) According to M.A.P.A, the number of refineries in Spain is currently around the 150 mark. From information collected by the National Oil Refiners' Association 37% are also extractors and 32% are also packers. The highest density of refineries occurs in Andalusia. Both private and national capital are present to a significant degree in the sector, although companies funded by foreign capital are particularly noticeable in production in the seed-oils sector.(90) As regards company size, there seems to be a current surplus of installed refining capacity and little uniformity in the technological level of the refineries. Small and medium sized companies with reportedly obsolete installations and inadequate technology appear to coexist alongside companies using the latest technology and whose capacities make them the major producers in the sector. Oil is supplied for refining by the companies, either from their own extractors or by firm acquisition from other extractors. So, 16.5% of this oil is self-supplied and 83.5% is purchased from third parties.(91) The production policy followed by refining companies focuses on the diversification of the range of

products treated so as to avoid stationary periods in production. Some plants, however, do specialise in refining a single type of oil be it olive, sunflower or fish oil and animal fat for manufacture or margarine. Once refined oils have been obtained, the usual practice is to channel them to the refineries' own packing units : or they are sold for cash payments, being transported by the buyer or other packers. Sometimes too they are sold off to manufacturers of preserves and other allied branches of the food industry.(92)

Packers focus their activities on a variety of edible vegetable oils. The processes carried out in the packing plants include mixing of virgin oils with refined oils to obtain pure olive oils; filtration of virgin oils; and packing oils according to standards laid down in the relevant Technical Health Regulations. Data from the National Association of Food Packers for 1986 gives the number of packers as approximately 200. Since the 1968 Census gave a number of 600, it appears there has been a clear drop in the number of units.(93) According to M.A.P.A, 41.2% of the packers are located in Andalusia, 13.6% in Catalonia and 12.9% each in Valencia and Castile-La Mancha. The private sector controls 53.6% of the packing plants, another 35.7% is controlled by corporations and 10.7% by cooperatives. The share of the market controlled by companies with foreign-held interests is significant, amounting to 34%.(94) Packing plants are supplied by refineries and extractors, the latter furnishing virgin olive oil. When not supplied by their own plants, packers buy from others, in which case an agent commonly intervenes, receiving a commission of around 3%. Packers sell mainly on the domestic market, the most

important sales to foreign countries being those of olive-oil. Among the companies that concentrate upon the domestic market, a distinction can be made between those marketing their products at a nationwide level and those whose market is restricted to a single region or district.

The competitive sector of vegetable oil extractors consists of units who engage in the crushing and extraction of vegetable oils other than olive-oil.(95) They are mainly involved in treating soya oils and, to a lesser extent, olive residue, grape pip and maize oils. On receiving the seeds, these are subjected to a drying process and then cleaning, after which a dehusking process may or may not take place according to the case in question. The resulting mass is heated, pressed and loaded into the extractor, from which the oil is obtained. To estimate the number of companies operating in this sector of the processing industry, it is necessary to consider those whose "main" activity is the extraction of a particular type of vegetable oil. The sector is made up of seven companies extracting oil from soya, having a total of 10 extraction plants between them. In all cases they are located in ports. The companies that extract sunflower oil number 30, among them are the seven soya oil extractor companies. Eighteen of them (60 percent) are situated in Andalusia.(96)

M.A.P.A's Census includes a total of 136 companies extracting olive residue oil, 98 of which are in Andalusia. In the 1984/85 crop year, seven companies concentrated on oil extraction from safflower seeds and four companies were active in crushing and extraction of

rapeseed oil. Capital is mostly in private hands. There are only two companies in this sector where public capital has been invested - a soya extractor and a sunflower extractor. Contrary to the position in the milling sub-sector, there has been significant investment of foreign capital in extraction. The commercial company predominates (while in oil mills is the cooperative sector which is hegemonic), with the exception of residue oil, where the holders of extraction companies comprises both cooperative companies and individual employers.(97) There are variations in extraction and crushing capacity among the units. Soya extractors have the greatest capacity, followed by sunflower. The companies themselves also show a considerable degree of variation in technological level. Those involved in soya extraction- who also work in sunflower extraction - possess advanced facilities. Well behind these are the firms extracting olive residue, sunflower and cotton oils. The latter therefore, will have to undertake the necessary investment or many of them will disappear in the medium term.

As far as supply arrangements are concerned, they vary according to seed type.(98) Soya extractors therefore, are supplied by imports of soya bean, and soya cake that has not been defatted. To obtain olive, grape pip and residue oils, the relevant by-products are purchased (olive residue and grape pips) from oil mills and wine making cellars. Cotton is acquired from cotton mills and other seeds (sunflower, safflower, rapeseed), are supplied by farmers or their cooperatives. In this sub-sector seed purchases are made directly by extractors and not through brokers.

It appears, that in both countries there is a strong multinational presence in their respective olive industries while cooperative ownership is modest 10-11%. Also their oil-seeds industries are highly concentrated, and largely controlled by foreign interests. The main difference in their production structure is that in the Spanish second stage processing 37% of the refineries are also olive-oil extractors. This implies a relatively lower production cost due to the advantages available through vertical integration. Italy, on the other hand, appears to retain the traditional division between first stage processing (oil-mills) located in rural areas and second stage (refiners, packers) situated in urban centres. The structure and organisation of the second stage processing of olive-oil in Greece will be examined in Chapters Six and Seven.

5.4 Cross Section Price Comparisons between Italy, Spain and Greece

Given the production structures of the three largest producer countries in he EEC, a cross-sectional study was undertaken in an attempt to shed some light on the important features of each country's industrial production of olive-oil. The aim was to identify the implications of the EEC price policy for the domestic markets of the three countries. Detailed olive-oil price data was used for the years 1984/1985.[99] Table 5.9(a) presents relative prices among the different quality categories of olive-oil in Italy, Greece and Spain. It is apparent that Italy shows the largest discrepancy for Lampante (i.e. 90%) and Extra (i.e. 156%) from the intervention price of

Courante. Greece shows a medium discrepancy (Lampante 94% and Extra 129%). Spain has essentially the same prices for all categories of olive-oil. All prices in Table 5.9 are expressed in ECU and divided by the intervention price of Courante (i.e. 232 ECU for 1984/85). The purpose of these comparisons is to reveal the price spread in the domestic olive-oil market of Greece, Spain and Italy having taken out the influence of currency fluctuations. Another important feature of Table 5.9(a) is the price of Refined Olive Oil. In Italy it is at the same level as Courante. In Greece the price is close to that of Extra, while in Spain it is even more expensive than Extra. If the price of the Refined olive-oil is compared to the raw material (Lampante) we can observe that in Italy and Spain Refined is 14% and 11% respectively more expensive than Lampante. However, in Greece it is 33% more expensive. This fact is further supported if we compare the price of Refined olive residue oil and unrefined olive residue oil. In Italy and Greece the Refined is 44% and 33% respectively more expensive than the unrefined while in Greece it is 87% more expensive. It therefore seems clear that the costs of refining in Greece are the highest among the competitor producer countries.

Table 5.9(b) shows price deviations for different olive-oil categories from their corresponding prices in Italy. Prices are expressed in ECU/100 kgr. Italy has the highest prices for Extra, Fine and Olive Residue Oil. Greece, on the other hand, has the highest prices for Courante, Lampante and especially Refined. Spanish prices are especially low for the Extra and Fine category, indeed they are less than half of the Italian. If we then express the above prices in

drs, (see the parentheses in Table 5.9(b)) we observe that Italy has higher prices than Greece in all categories of the Unrefined oils. Greece, however, has higher prices for the Refined Olive-oil and Olive Residue Oil.

Figures 5.5-5.11 show a comparison of average producer prices in 1984/85 for different categories of olive-oil in the three member States. They were derived from Table 5.10 and support the proposition that production costs in the refining part of the Greek olive industry are the highest of the three. This state of affairs should not be seen as a isolated phenomenon within the Greek industrial structure. It is rather indicative of the generally lower level of development of productive forces compared with that of a more industrially advanced country such as Italy.

Unlike the situation in Greece and in Italy, Spanish olives are usually cultivated in vast areas : they are harvested in bulk and crushed in large scale oil mills which usually belong to cooperatives. The oil obtained is usually processed there. This way of bulk production and processing keeps costs below the levels of Greece and Italy. Hence the observation that Extra and Fine olive-oil is cheaper in Spain than the other member States.(100) In Italy and Greece the situation is very different in that olives are primarily cultivated in regions where no other crops are possible and where the disappearance of olive cultivation would mean not only social but also ecological deterioration.

A final observation which we may derive from Figure 5.12 is that in Italy and Spain the Price of Refined follows the price of Lampante- while this is not the case in Greece. There has been a continuous increase in the price of Refined Olive-oil in Greece. This suggests that its competitiveness in a free trade environment, within the European Community will be seriously impaired.

Conclusions

In this Chapter I have attempted to identify the main features of the environment within which the Greek second stage processing of olive-oil has operated since 1981. The discussion of EEC price policy and that of restructuring may help us to understand the external forces behind recent developments in this part of the Greek olive industry. It is true that most of the second stage processing, involving the production and processing of olive-residue oil, and refined olive-oil as well as branding and packing of virgin oils - has been placed under the CAP, in terms of both, its price support scheme and the structural arm of the policy. Nevertheless, it is the structure and organisation of packers which have been most affected - to the extent that the entire operation and outlook of the sector has been transformed. It has been argued that Refined olive-oil in Greece has a higher production cost compared with other countries, while Extra is cheaper than Italy's but more expensive than Spain's. This reflects different modes of organisation of production and different industrial structures amongst the major producer States. It also directly impinges upon the question of competitiveness if national production levels are to be

maintained - given the free trade regulations between EEC member States. In the following two Chapters (Six and Seven) the organisation, structure and financial performance of the Greek second stage processing sub-sector are investigated.

REFERENCES

1. See "Food and Drink" in Panorama of EC Industry, Chapter 17, p.17-1. Commission of the European Community, 1989.

2. Ibid., p.17-2.

3. According to a report on the U.K food industry it has been shown that "in the top 100 grocery markets,... the two main manufacturers in some 70 of these markets have more than half the market between them. In just over 60 of these markets, one manufacturer alone holds a share of over 40%". D. Churchill, "Britain's Retailing Industry : The Battle of the Margins". Financial Times, March 27, 1984.

4. See Panorama of EC Industry, 1989, op.cit, p.17-3.

5. See "Research on the Cost of non-Europe", Basic Findings, Vol.12 Part A, in: The "Cost of non-Europe" in the Foodstuffs Industry, Commission of the European Communities, 1988 p.38.

6. Ibid., p.39.

7. Ibid., p.42.

8. See "Commission's Programme for 1990. Address by Jacques Delors, President of the Commission, to the European Parliament and his reply to the debate". Strasbourg, 17 January and 13 Febraury 1990. Bulletin of the European Communities, Commission of the European Communities, Supplement, 1/90 p.18,19.

9. See "Vegetable and Animal Oils and Fats" in Panorama of EC Industry, Commission of the European Communities, 1989, p.17-8.

10. Ibid.,

11. Ibid.,

12. See Panorama of EC Industry, 1989, op.cit, p.17-10.

13. Ibid.,

14. See A. Kiritsakis, The Olive Oil (Thessaloniki, 1988) p.275 and Olivae, various issues, I.O.O.C, 1975-1985.

15. See Enimerotico Deltio, SEVITEL, August 1987.

16. See Leslie Hannah, The Rise of the Corporate Economy, (London, 1976).

17. See A. Teichova, "Multinationals in Perspective" in : Multinational Enterprises in Historical Perspective, edited by A. Teichova, Levy-Leboyer and E. Nussbaum, (Cambridge, 1986).

18. Ibid.,

19. Transnational corporations in World Development : A re-examination, U.N Economic and Social Council, Commission on Transnational Corporations (New York, 1978).

20. Ibid., and Transnational Corporations in World Development, Third Survey. United Nations Centre on Transnational Corporations, 1985.

21. See Horst Heininger, "Transnational Corporations and the Struggle for the Establishment of a New International Economic Order", edited by A. Teichova, Levy-Leboyer and E. Nussbaum, Multinational Enterprises in Historical Perspective, (Cambridge, 1986).

22. See Verena Schroter, "Participation in Market Control through Foreign Investment : IG Furbemindustrie AG in the United States : 1920 - 1938" in : Multinational Enterprises in Historical Perspective, (Cambridge, 1986).

23. See H. Heininger, 1986, op.cit.

24. OECD, Industrial Policies, "Development and Outlook in OECD Countries", (Paris 1986).

25. See Economicos Tahidromos,+ 23 March, 1989 p.62.

26. Ibid.,

27. Transnational Corporations : Views and Proposals of States on a Code of Conduct, U.N, 30 December 1976 (E/C. 10/19) and Survey of Multinational Enterprises, European Commission, July, 1976.

28. See "A Community Strategy to Develop Europe's Industry", Commission of the European Communities, Brussels, 23 October 1981.

29. Ibid., and "Multinational Undertakings and the Community", Commission Communication to the Council of 8 November 1973, COM 1973.

30. "Transnational Corporations : Views and Proposals of States on a Code of Conduct", U.N, 30 December, 1976 (E/C. 10/19), and "A Community Strategy to Develop Europe's Industry". Commission of the European Communities, Brussels, 23 October, 1981.

31. See Bulletin of the European Communities, 1969, Commission of the European Communities, 1969.

32. Ibid., 1972.

33. Ibid., 1983.

34. See " A Community Strategy to develop Europe's Industry", Commission of the European Communities, Brussels, 23 October, 1981.

35. See H. Heininger, 1986, op.cit,.

36. Ibid,

37. See "A Community Strategy to develop Europe's Industry", Commission of the European Communities, Brussels, 23 October, 1981.

38. Davignon interview from "Multinational Service" in : Multinational and Political Control, edited by J. Robinson, 1983.

39. See OECD, Industial Policies, "Development and Outlook in OECD countries", Paris, 1986.

40. Ibid.,

41. See Evgenia Docopoulou, "Technology Transfer to the EEC Periphery" in : Industrial Change in Advanced Economies, edited by F.E. Ian Hamilton, 1987.

42. Ibid.,

43. Economicos Tahidromos, 23 March 1989, p.62.

44. See E. Docopoulou, 1987, op.cit.,

45. See D. Fieldhouse, Unilever Overseas, (London, 1978).

46. Ibid.,

47. Evidence obtained through interview, with Mr. Vasilopoulos Head of the Supplies Department of Minerva, Minerva, March, 1988.

48. Information obtained by the Ministry of Commerce. Interview with Mr. Y. Kotsis, 1989. Also from Eleourgilki, Interview with A. Kiriakoulakos, Department of Supplies, 1988.

49. Evidence obtained through interview with L. Melas, General Director Elais, March, 1988.

50. Minerva, Department of Prices and Output, Confidential Records, March 1988.

51. Ministry of Agriculture (YDAGEP). "Packers and Amounts of olive-oil, 1982-1985, which have been granted the Consumption Aid", 1989.

52. Elais, Department of Supplies, Interview with Mr. Daskalakis, March, 1988.

53. Evidence obtained through interview with L. Melas, the General Director of Elais, March 1988 and A. Kiriakoulakos, Department of Supplies, Eleourgiki, 1989.

54. Cotton Organisation, "Production of oil-seeds and oil-seed oils during 1982-1986", Athens, 1988.

55. Derived from Published Balance Sheets of the Companies, Elai's and Minerva, 1980-1987. There are various definitions of profitability which can be derived from balance sheet information. For a review see J. D. Blake, The Concise Guide to Interpreting Accounts, (London, 1989) p.23-30.

56. Bulletin of the European Communities, Commission of the European Communities, 1989.

57. See J. A. Burns, "The U.K Food Chain with Particular Reference to the Inter-Relations between Manufacturers and Distributors". Journal of Agricultural Economics, XXXIV(3) p.361-378, 1983.

58. See J. A. Burns, J. P. McInerney and S. Swinbank (ed). Economics and Policy in the Food Industry : A Summary of themes, (London, 1983).

59. Ibid.,

60. See J. W. L. Graham, "Sugar and Sweeteners" in The EEC and the Food Industries, edited by A. Swinbank and J. Burns, (London, 1984).

61. See A. Locke "Meet processing in the EEC" in : Ibid.

62. See F. T. Rees, "The EEC and the UK;'s Cereals Processing Industry" in : ibid.

63. Regulation (EEC) No. 3089/78, O.J. L 369, 29/12/1978 p.12.

64. ibid.,

65. Regulation (EEC) No. 3172/80, O.J. L331, 9/12/1980, p.27.

66. See "Special Report of the Court of Auditors" O.J, C134, Vol. 28, 3 June 1985, paragraphs 5.1-5.12.

67. Ibid.,

68. Italian State Intervention Agency acting under the general authority of the Ministry of Agriculture and Forestry.

69. "Special Report of the Court of Auditors" O. J. C134, Vol.28, 3 June 1985, paragraphs 5.13-5.24.

70. ibid.,

71. Regulation (EEC) No. 283/72, O.J. L520, 3/10/1972, p.26.

72. Ministry of Agriculture (YDAGEP). Information on Consumption Aid rates granted to Greece by the EEC until 1985.

73. Until 1986 there was only one trade organisation of Greek packers, SEVITEL. In that year half of the packers represented by Bro Kefalea Company - one of the largest packers based in Messenia - broke away mainly because they resented administrative charges by SEVITEL. They formed a new recognised trade organisation called ESVITEL.

74. Ministry of Agriculture (YDAGEP), Interview with E. Bazyioti, March, 1988.

75. "Special Report of the Court of Auditors", 1985, op.cit.

76. See I. Bowler "Some consequences of the Industrialization of Agriculture in the European Community" in: The Industrialization of the Countryside, edited by M. J. Healey and B, W. Ilbery, (Norwich, 1985).

77. The system of MCAs (Monetary Compensation Amounts) was introduced by the Community in the 1970's in order to offset the difference between the "green rate" and the real exchange rate. See G. N. Minshull, The New Europe : An Economic Geography of the EEC, (Kent, 1985) p.123.

78. See F. T. Rees, "The EEC and the U.K's Cereals Processing Industry", in : The EEC and the Food Industries, edited by A. Swinbank and J. Burns, 1984.

79. The Mansholt plan, published in 1969 by the then Commissioner for agriculture was the first attempt to solve the problems of fragmentation, small and unviable farms, high-cost production and commodity surpluses. See G. N. Minshull, 1985, op.cit, p.122.

80. Special Report No. 2. "Edible Oils in Italy". Marketing in Europe, 224, July, 1981.

81. "Special Report of the Court of Auditors", 1985, op.cit.

82. G. N. Protonotarios. "Survey of the Italian Olive-Oil Market". Commercial Advisor's Office, the Greek Embassy in Rome, January 1985.

83. ibid.,

84. Special Report No. 2 "Edible Oils in Italy". Marketing in Europe, 224, July, 1981.

85. ibid., and Dr. M. Guida, "Fats and Oils in Italy" Speech given in the Annual Conference of the IFMA-IMACE. Rome, May, 1984.

86. Marketing in Europe, 1981, op.cit.

87. ibid.,

88. ibid.,

89. J. L. Gonzalez-Burgaleta, "Commercialization of Fats and Oils in Spain", Olivae, V Year, No. 21, I.O.O.C, 1986.

90. ibid.,

91. ibid.,

92. The exact amount sold to manufacturers of preservatives has not been possible to obtain in the Spanish case, but in Greece it does not exceed 3% of total olive-oil production in any year.

93. The 1968 Agricultural Census is compiled by M.A.P.A, the Spanish Ministry of Agriculture, Fisheries and Nutrition. Olivae, V.-Year, I.O.O.C, 1986.

94. This percentage is the highest among the olive industries of the EEC olive producing countries.

95. Special Report No. 2 "Edible Oils in Italy". Marketing in Europe, 224, July, 1981.

96. ibid.,

97. ibid.,

98. ibid.,

99. SEVITEL, Enimerotico Deltio,+ various issues, 1986, 1987 and Eleourgiki,+ No.3, 1985.

100. This feature of the Spanish olive-oil production, puts Spain in a better competitive position from either Greece or Italy in a free trade environment.

Table 5.1: Employment in the EEC's Food and Drink Industries (EEC 9)

Numbers Employed[1](1,000), 1978

By Industry		By Country	
Milk Processing	257.2		
Meat Processing	314.5		
Breweries	197.2		
Bakeries[2]	405.7		
Fruit and Vegetable Processing	149.7	Belgium	79
Cocoa, Chocolate and Confectionery	211.2	Denmark	67
Sugar	63.9	West Germany	510
Oils and Fats, Margarine	49.1	France	410
Beverages (other than wine)	77.9	Ireland	55
Winemaking	97.1	Italy	237
Tobacco	115.3	Luxembourg	2
Feedingstuffs	88.4	Netherlands	132
Various[3]	173	U.K	709
Total	2,201	Total	2,201

Notes:

1. Persons working for firms with 20 or more staff.
2. Including the processing of grain and the manufacture of past products.
3. Starch products, coffee, tea, spices, preserved fish and seafood products.

Source: Commission, 1983, pp.30,32

Table 5.6: Budgetary Expenditure on Olive Oil, 1979 to 1984

(In ECU)

Title	1979	1980	1981	1982	1983	1984
(a) Export Refunds	-	-	2,9	8,8	9.7	24.0
(b) Production Aid	357.8	237.9	274.3	254.9	393.8	513.0
(b) Consumption Aid		52.3	105.7	152.4[1]	221.6[1]	250.0[1]
(d) Deductions for Specific Consumption Measures	n.a.	-3.6	-3.4			
(e) Net Aid (b)to(d)	357.8	286.6	376.6	407.3	615.4	763.0
(f) Specific Production Measures (olive cultivation register etc)	n.a.	n.a.	n.a.	2.6	13.8	11.0
(g) Specific Consumption Measures (information)	n.a.	0.2	0.3	2.8	0.2	6.0
(h) Cost of Public and Intervention Storage	22.6	20.5	51.0	56.3	12.2	37.0
(i) Production Refunds for Olive Oil Used in the Manufacture of Preserved Fish and Vegetables	7.8	10.6	11.9	15.3	23.9	22.0
(j) Total	388.2	317.9	442.7	493.1	675.3	863.0

Notes: 1. From 1982 onwards, the figures for consumption aid are shown net of deductions.

Source: Official Journal of the European Communities, C134, Volume 28, 3 June 1985.

TABLE 5.9

(a) RELATIVE PRODUCER PRICE INDICES FOR OLIVE OIL: INDEX PRICE = 100, THE EEC INTERVENTION PRICE FOR COURANTE 1984/85

	ITALY	GREECE	SPAIN
Extra	156	129	59
Fine	126	113	59
Courante	103	106	58
Lampante	90	94	56
Refined	103	125	62
Index = 100 price LAMPANTE	114	133	111
Olive Residue Oil	49	44	36
Refined Olive Residue Oil	71	82	47
Index = 100 price UNREFINED	144	187	131

(b) RELATIVE PRICES OF OLIVE OIL : INDEX = 100, THE CORRESPONDING PRICE IN ITALY FOR 1984/5; PRICES ARE EXPRESSED IN ECU/100 Kgr.

	ITALY	GREECE	SPAIN
Extra	100	83(76)[1]	38(38)
Fine	100	90(82)	47(46)
Courante	100	104(94)	56(61)
Lampante	100	105(95)	62(61)
Refined	100	122(111)	60(60)
Olive Residue Oil	100	90(83)	73(74)
Refined Olive Residue Oil	100	116(105)	66(66)

Notes: 1. Prices expressed in drachma/kgr.

Source: Table 5.10.

TABLE 5.10

COMPARISON OF AVERAGE PRODUCER PRICES[1] DURING 1984/85 IN ITALY, GREECE AND SPAIN

	Extra Olive-Oil	Fine Olive-Oil
Italy	363	293
Greece	301.5	264
Spain	137	137

	Courante Olive-Oil	Lampante Olive Oil
Italy	238.9	210
Greece	247.4	219.8
Spain	134	130

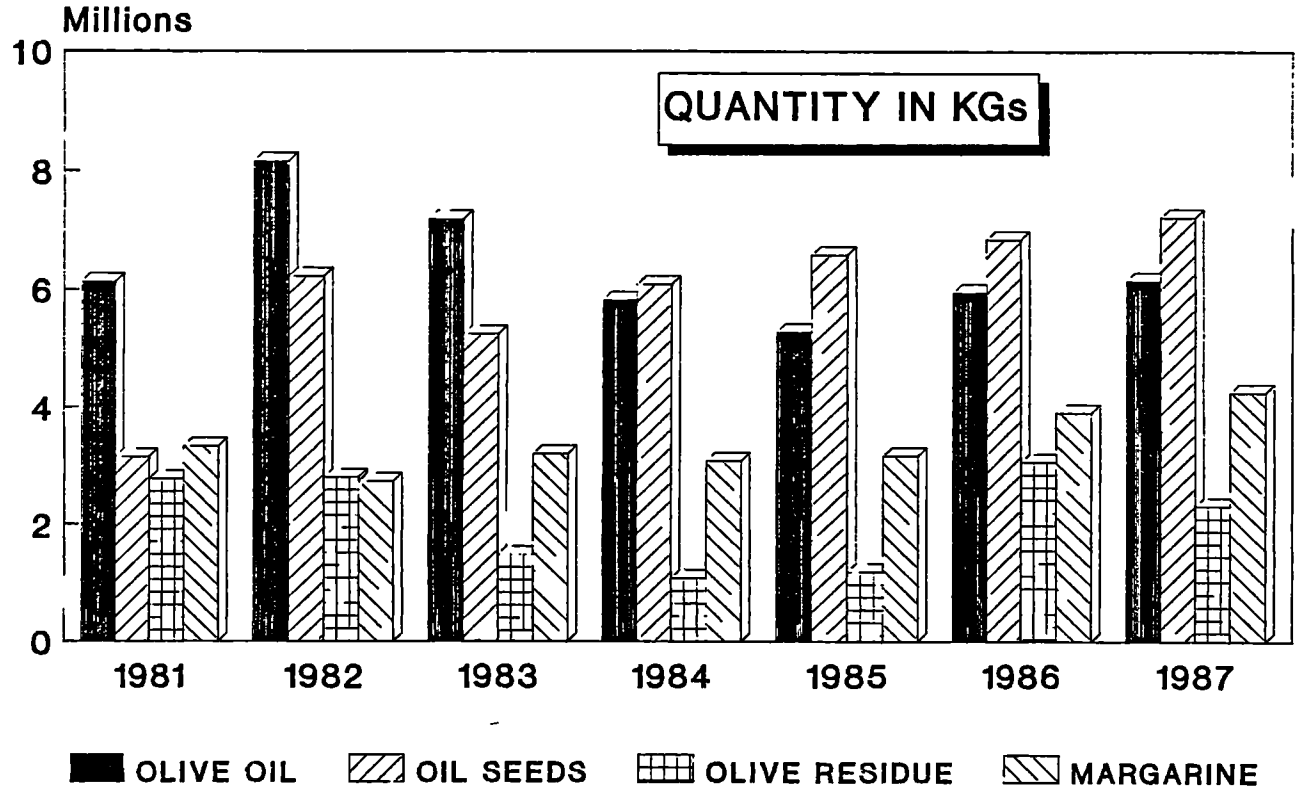
	Refined Olive-Oil	Olive Residue Oil
Italy	239.5	114.8
Greece	291.6	102.9
Spain	144	84

	Refined Olive Residue Oil
Italy	165.8
Greece	192.2
Spain	110.2

Notes: 1. Prices are expressed in ECU/100 kgr.

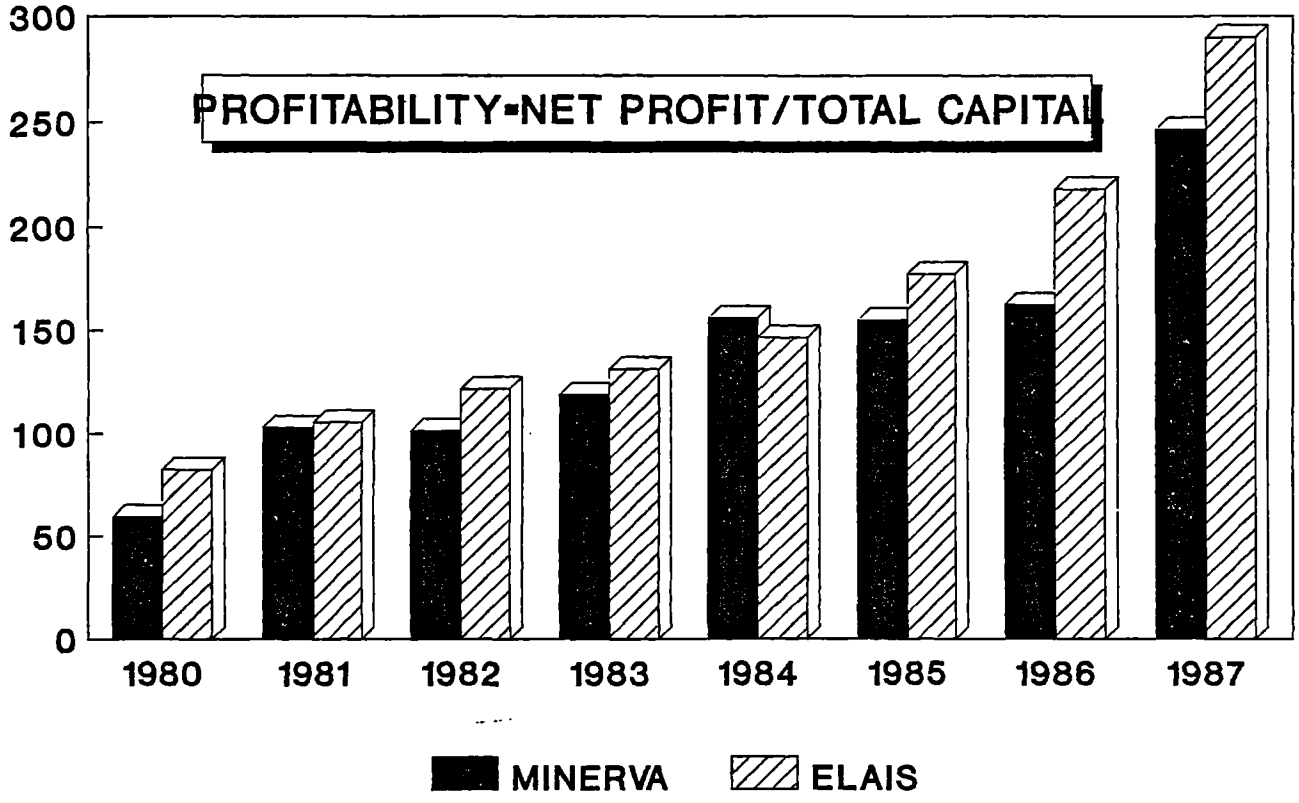
Source: Eleourgiki, Office on EEC Relations, Summer 1988.

FIGURE 5.2
MINERVA SALES VOLUME, 1981 - 1987



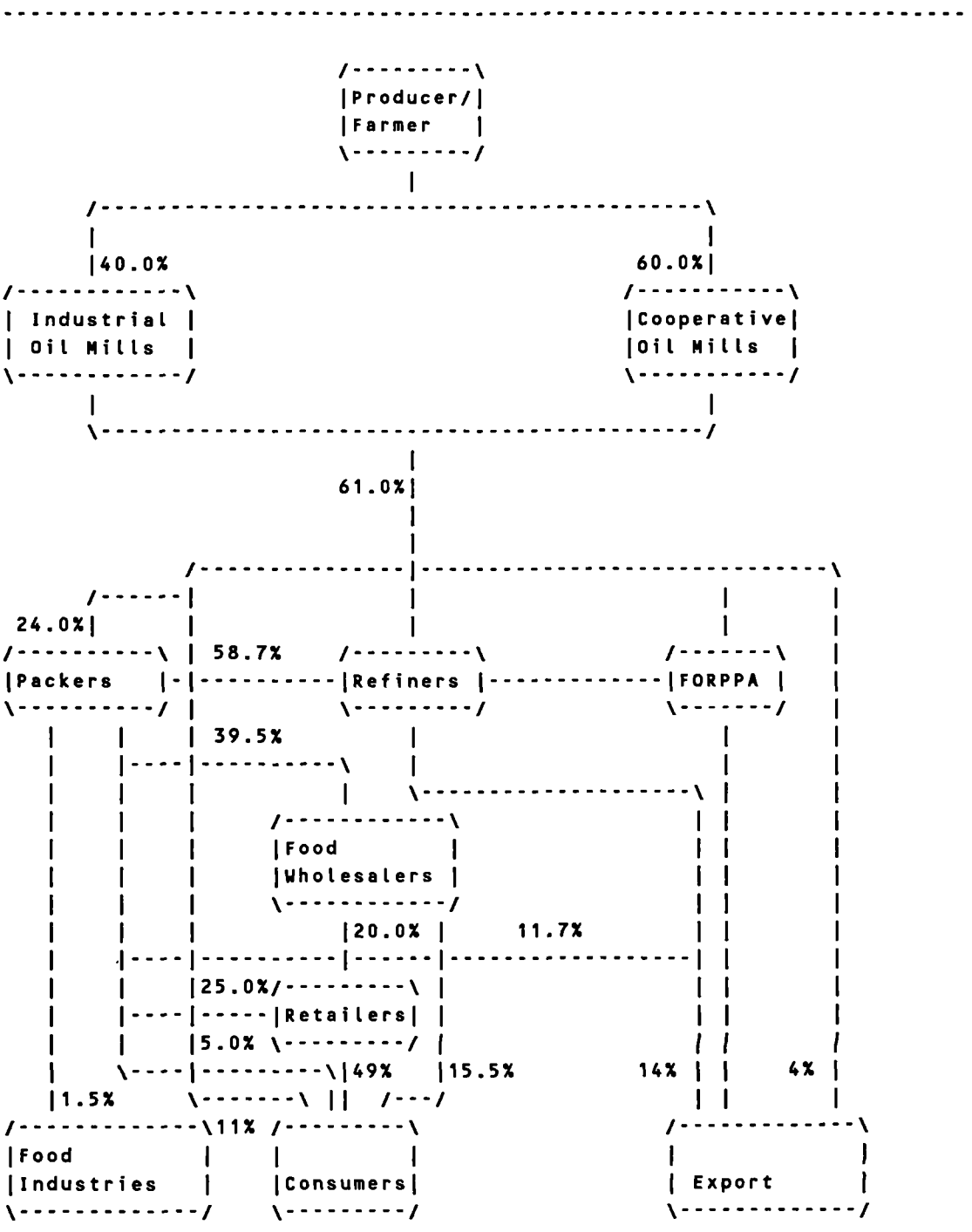
SOURCE: MINERVA COMPANY RECORDS

FIGURE 5.3
PROFITABILITY COMPARISON:ELAIS & MINERVA



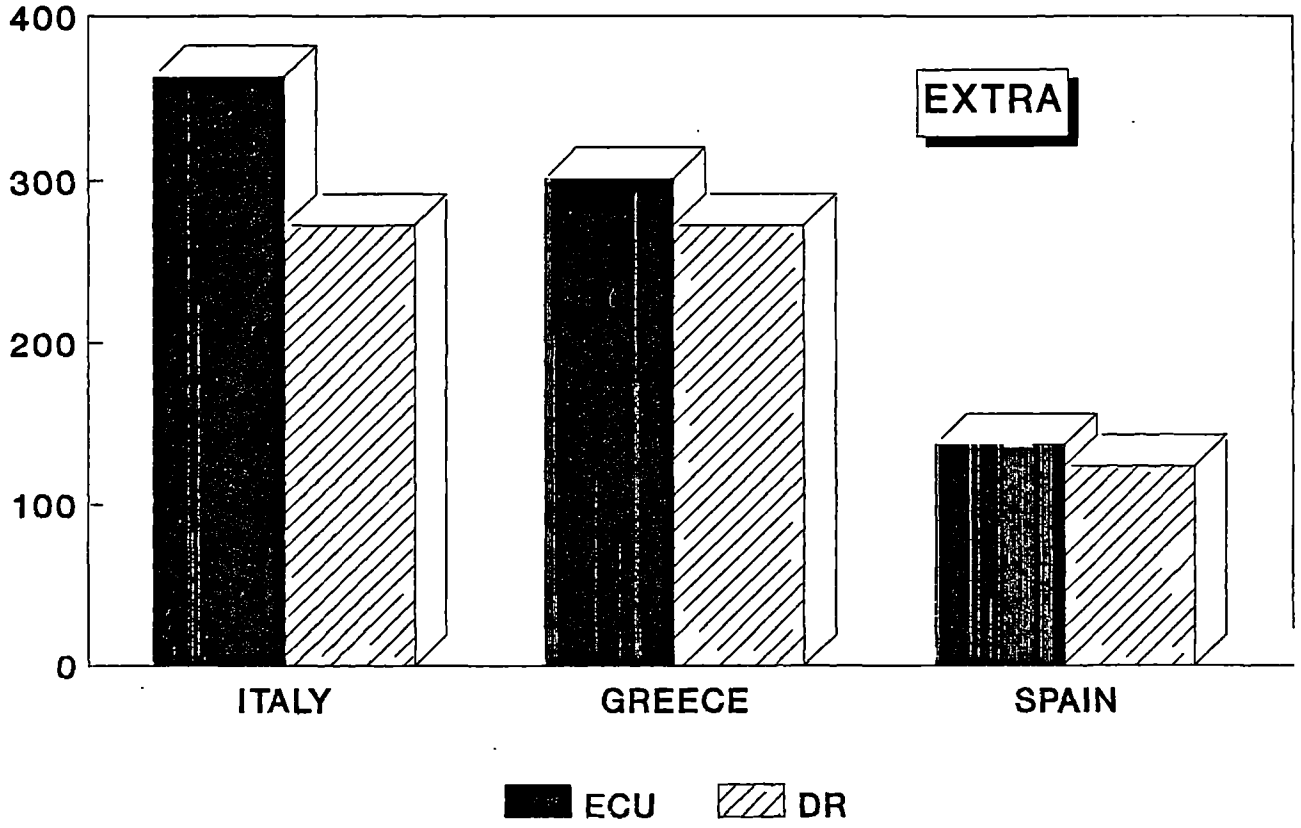
SOURCE: ELAIS AND MINERVA BALANCE SHEETS

Figure 5.4: Commercialisation Networks and Estimated Product Flows for Spanish Olive Oil.



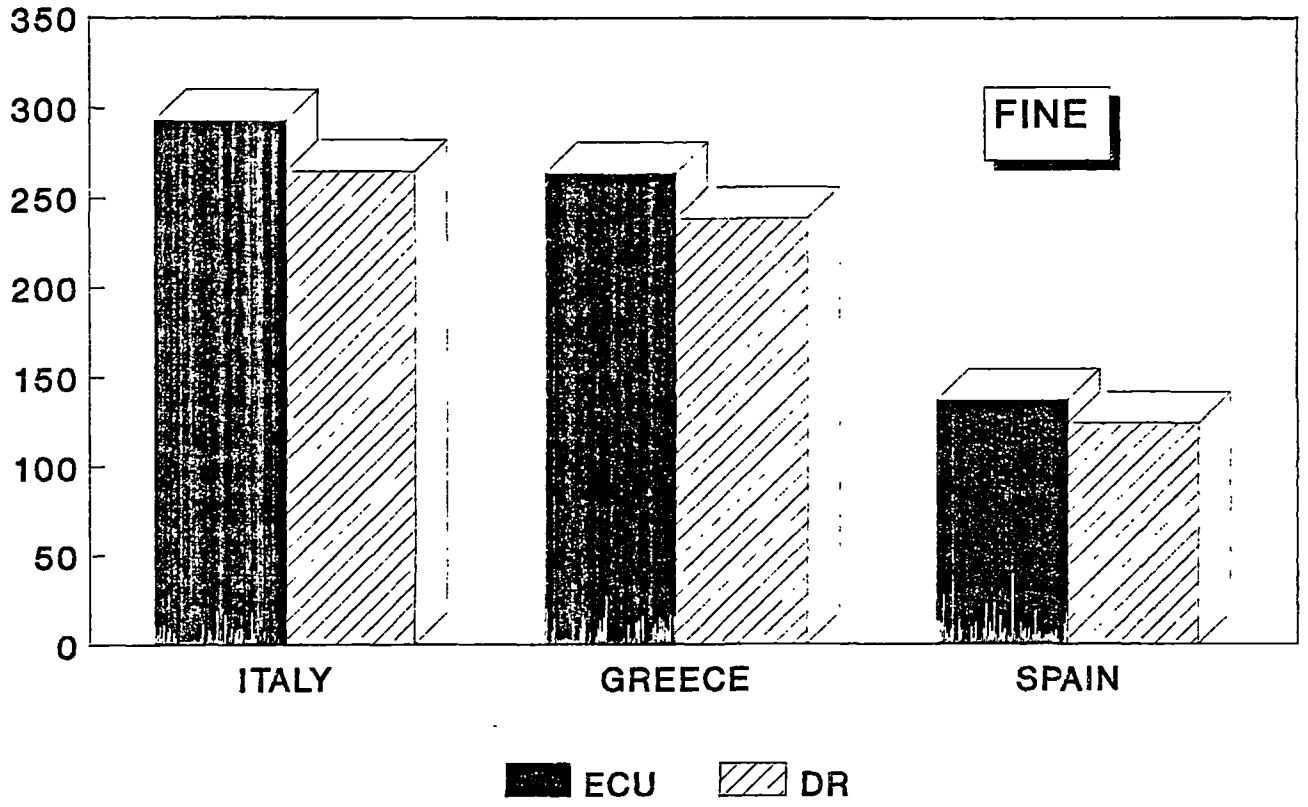
Source: Commercialisation of fats and oils. Collection of studies. Study and Trade Modernisation Office, OLIVAE-V YEAR -No. 21, IOOC,1986.

FIGURE 5.5
AVERAGE PRODUCER PRICES, 1984-1985



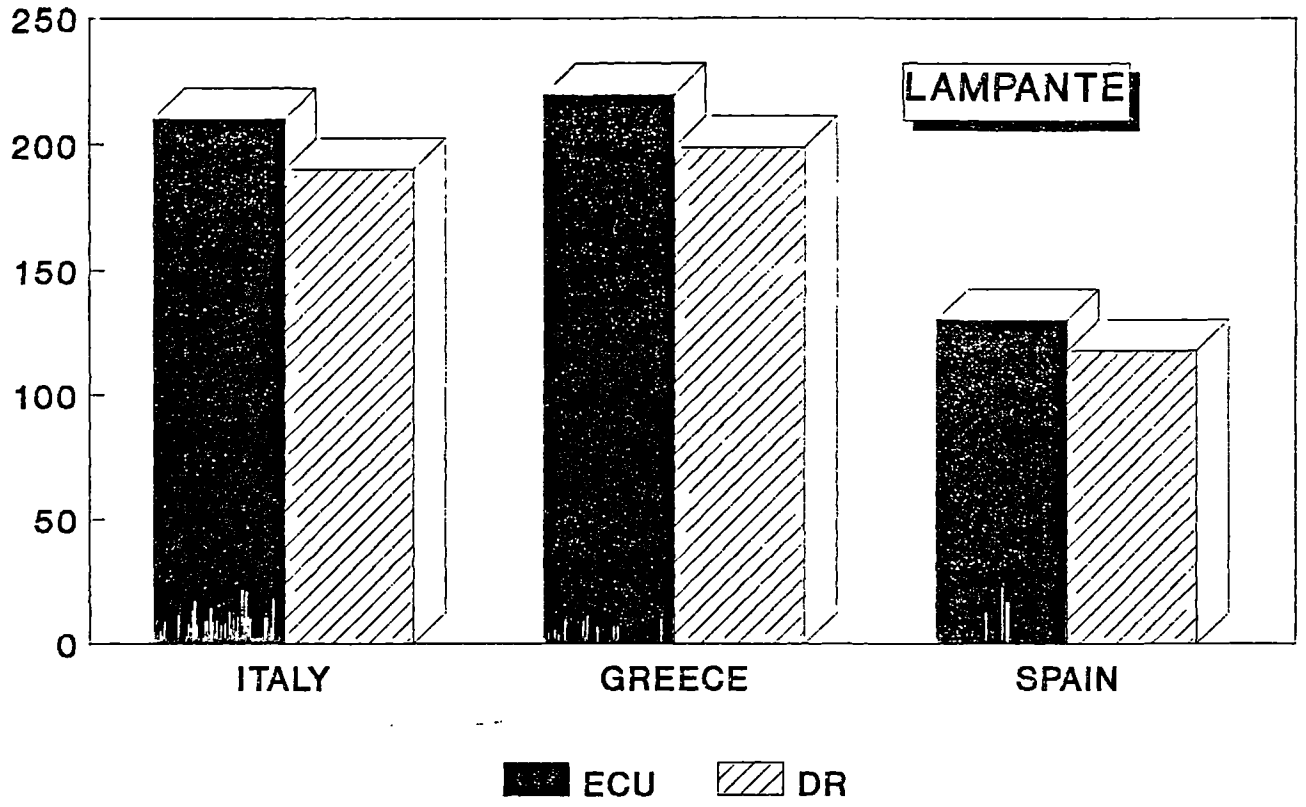
SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.6
AVERAGE PRODUCER PRICES, 1984-1985



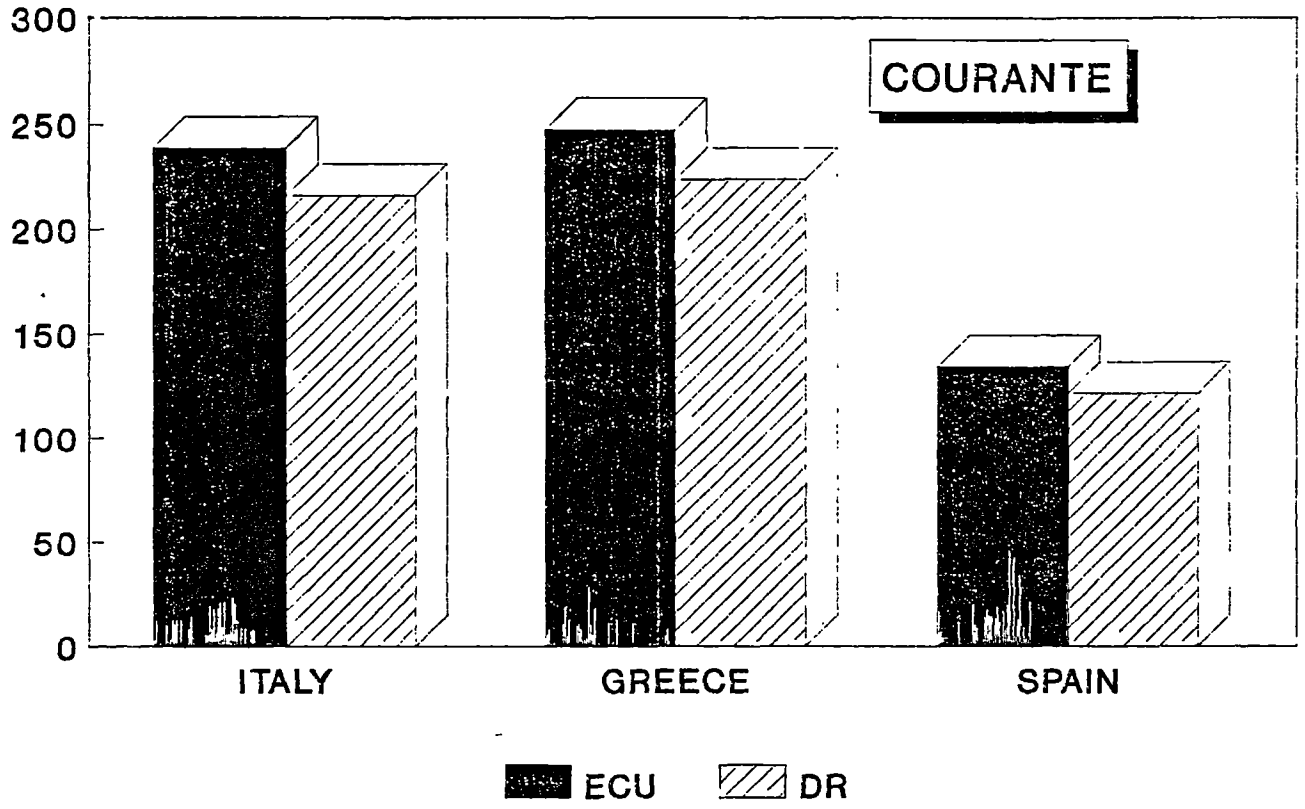
SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.7
AVERAGE PRODUCER PRICES,1984-1985



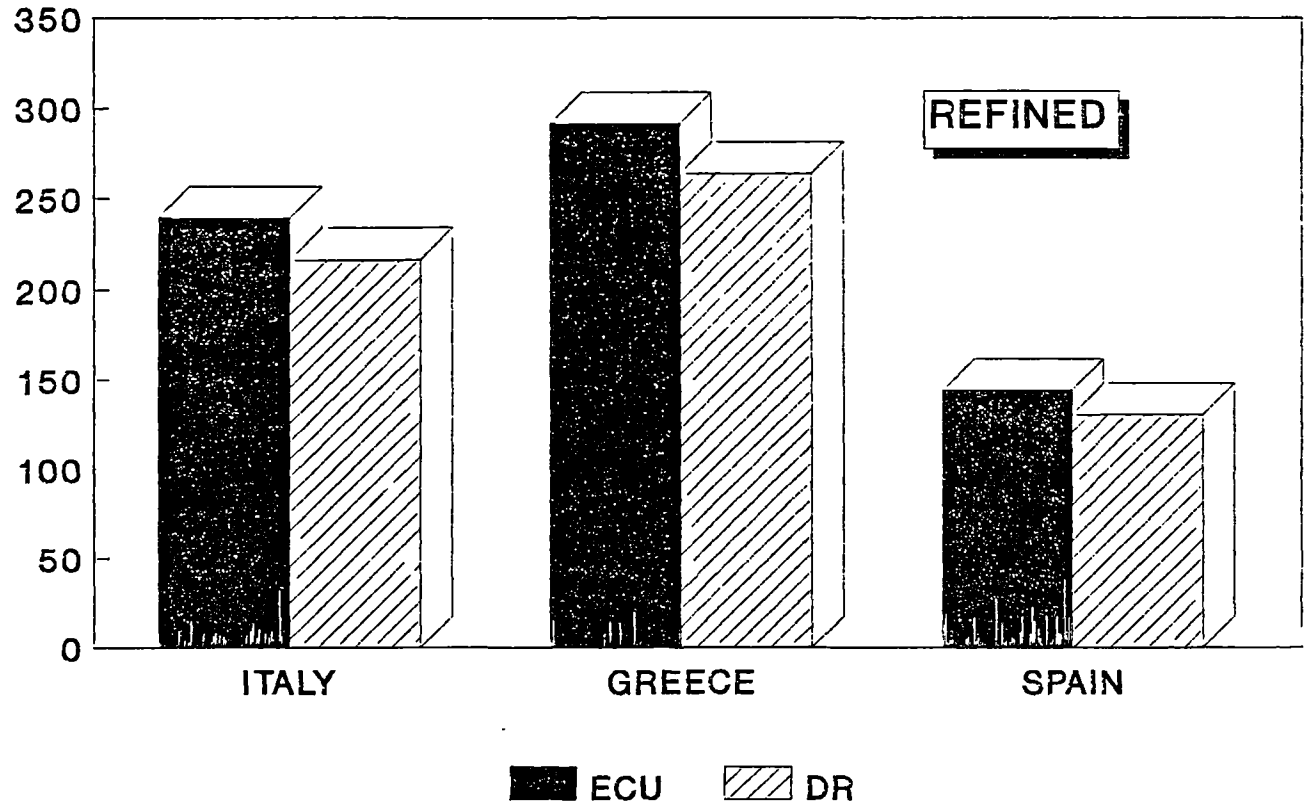
SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.8
AVERAGE PRODUCER PRICES,1984-1985



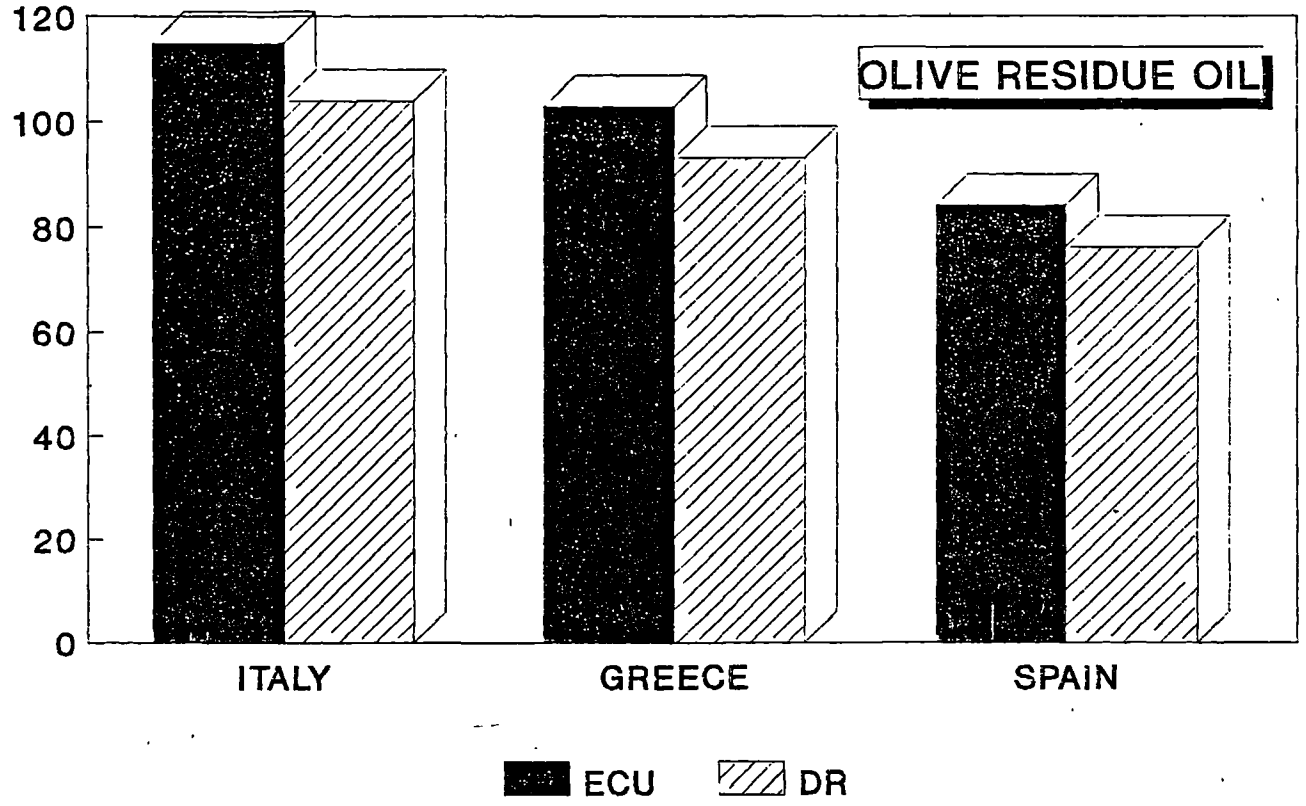
SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.9
AVERAGE PRODUCER PRICES,1984-1985



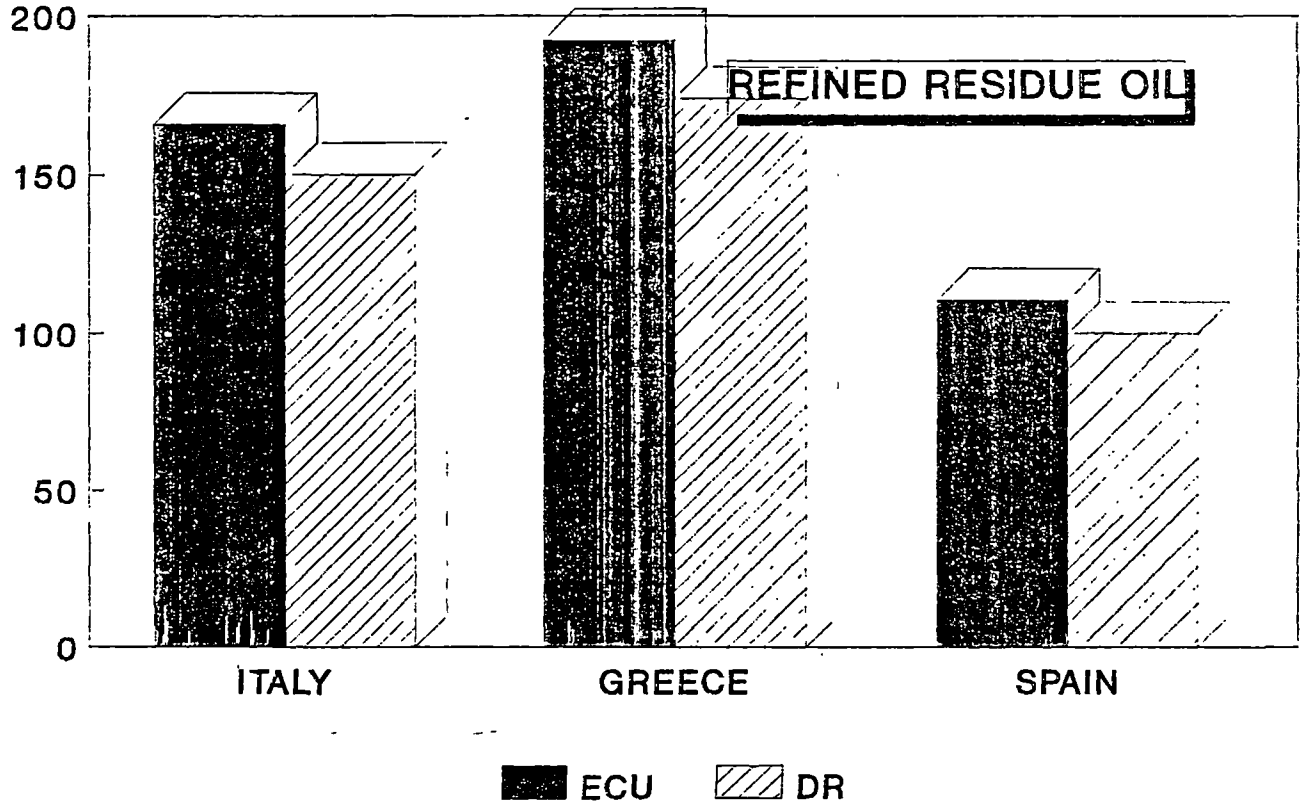
SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.10
AVERAGE PRODUCER PRICES,1984-1985



SOURCE: EEC COMMISSION, 1984-1985

FIGURE 5.11
AVERAGE PRODUCER PRICES,1984-1985



SOURCE: EEC COMMISSION, 1984-1985

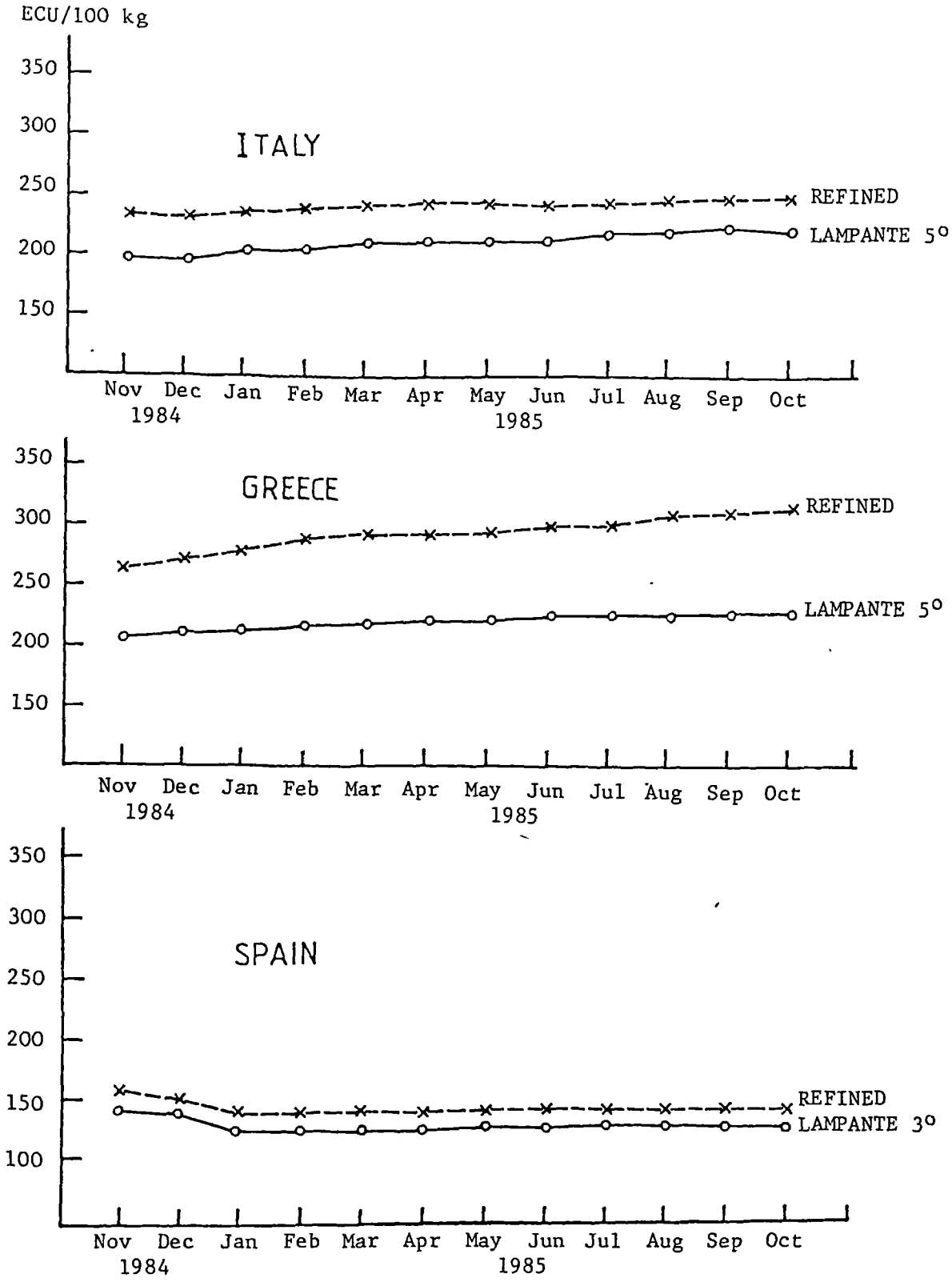


Figure 5.12

COMPARISON OF LAMPANTE AND REFINED OLIVE OIL DURING 1984/85 IN ITALY, GREECE, SPAIN

Prices are expressed in ECU/100 kg

CHAPTER SIX

STRUCTURAL CONSEQUENCES OF INDUSTRIAL CHANGE IN THE SECOND STAGE PROCESSING OF OLIVE-OIL

Introduction

The discussion in Chapter Five revolving around existing conditions in the EEC oils and fats industry has enabled us to identify those key factors which, in combination, have the potential to effect a major transformation to the structure of the Greek olive industry. Here I seek to analyse the nature of change which has taken place in the second stage processing of olive-oil since Greece's admittance to the European Community. In particular, I seek to show that accession has prompted a split in second stage processing so that two interconnected-but nevertheless distinct - parts have emerged. On the one hand we can observe a mushrooming number of small units in the packing and refining of olive-oil nationwide. On the other, there has been a process of concentration in the production of branded olive-oil in the hands of very few packers led by two subsidiaries of multinational companies, together with the cooperative enterprise Eleourgiki.

Section One focuses on developments in the second stage processing and packing of olive-oil. It is contended that the core of recent structural change lies in the packing and banding sub-sector which is now firmly articulated within the CAP system. The refineries, table olive processing units and olive residue plants have reacted only

slowly and modestly to new external incentives. In the First Part it is argued that there has been a large increase in the number of packing units over a ten year period. More specifically, in order for the units to be approved by Common Market standards and receive Consumption Aid, the EEC regime triggered off certain technical improvements to be made in the processing of olive-oil and investment in new buildings. This suggests that many more units were captured in the Official statistics because they were internally upgraded rather than because they had been newly established. In the Second Part I seek to show that refineries and olive residue plants experienced a relatively small expansion in number and capacity compared with the packers. Furthermore, based on the balance sheets of a sample of olive residue units I have tried to conduct a simple analysis of financial performance of those firms. This reveals the weakness of the sub-sector and I suggest that it is bound to have a deleterious effect upon competitiveness. In the Third Part of Section One, the changes in the table olive processing units are examined. Even though this is the only part of the industry not directly incorporated within the CAP price support scheme, it is nevertheless possible to observe some structural change and modernisation that is under way. But even so there are grounds for questioning the long-term viability of these units.

Section Two concentrates on key organisational features of the second stage processing. I try to argue that structural change has strengthened the position of cooperatives in this part of the industry. This took place partly as a consequence of the favourable political

environment created by the PASOC Administration of 1981-1989, which resulted in a shift of the locus of power within the industry towards cooperative control via Eleourgiki. In Part One the pyramidical structure of the cooperative movement is discussed. The role of the ABG and PASEGES in recent years is highlighted since they are certainly the main agents of the cooperative mode of organisation in general and of the olive industry in particular. Part Two focuses directly upon Eleourgiki itself. It is contended that from the early 1980's the enterprise has been transformed out of all recognition. Formerly an intervention agency responsible for collecting olive-oil on behalf of the State, it became a powerful commercial organisation capable of influencing the trading rules of the olive industry. Furthermore, it has entered the seed-oils production arena in order to try and improve its financial position and also in an attempt to compete with Elais and Minerva.

Section Three examines the structure of the seed-oils processing units. This is conducted in the light of the discussion in Chapter Five which argued that the leading packers of the olive industry now act as agents for the development of seed-oils (in Greece). I try to show that between 1978-1984 there was a dramatic increase in the capacity - but not in the number - of the relevant units. This implies that the sub-sector underwent a process of technical modernisation in order to be able to process a greater supply of agricultural inputs. On the basis of the financial performance of a selected sample of firms an optimistic picture emerges especially in the period 1986-1988. However, it appears that future development will largely depend upon

their ability to supply the major industrial units of the olive industry with cheap inputs.

At this introductory stage I should like to point out a major problem which I encountered in my research relating to the financial position of the units in the second stage processing. In addition to all the usual problems of interpreting such types of data I was unable to locate several (presumably published) balance sheets as well as the supplementary financial information lying behind the final statements. Partly because of this, in all cases I have had to break down the selected samples of processing units into two periods, and obviously this has considerably constrained the analysis. It has also meant that I have not been able to properly address the question of the longer-term and change to the underlying trend. In an attempt to delve further into the financial performance of the second stage processing firms I collected data from a number of packing units based in Messenia province and this information will be discussed in Chapter Seven.

6.1 The Development of the Second Stage Processing and Packing Sub-sector

"Second Stage" processing includes:

1. the filtering and packing of edible olive-oil;
2. the refining of olive-oil with high acidity counts;
3. the extraction of olive residue oil; and
4. the processing and packing of the olives.(1)

Figure 6.1 schematically shows the amount of olives and olive-oil which went through such second stage processing in 1988. We observe that most of the olive oil production (around 80%) is edible virgin olive-oil. This suggests that filtering and packing is the most important throughput second stage activity. All four production processes depicted in Figure 6.1 might well be taking place in the same refinery. In fact however, because of the small and fragmented character of the industry in the Greek case different units for each process has been the usual rule.(2) Since 1975, vertical integration of some second stage processing activities is not an uncommon phenomenon. Furthermore, even though the majority of units remain small and specialised, the greater part of output comes from the big vertically integrated firms notably Elais, Minerva and Eleourgiki.(3) Officially, firms are classified according to the process which accounts for the highest share of their output.(4)

6.1.1 The Packers

In the past the packing of olive-oil was undertaken by wholesalers who were mainly based in the major olive centres of the country.(5) The main purpose of packing was to facilitate the marketing and the distribution of the produce. The most commonly used containers for olive-oil packing have been iron barrels of 190 kgr, tin-plated containers with a capacity of 1-17 lt and plastic bottles of 1 lt.(6) Prior to 1970 there are no official statistics on the number of wholesaling units, and those that were registered in that year (1970) were only thirty.(7) But this is certainly an understatement since my

own rough estimate shows that the number must have been much higher than that. Based on production figures of olive-oil in Peloponnesos and statistics derived from the Institute of Industry and Commerce situated in Calamata, it is evident that in 1970, 3,658 tonnes of olive-oil priced at $5,527.416, and 2,121 tonnes of olives priced at $3,001,645 were exported from Messenia province alone.(8) Even if we make the assumption that half of the aforementioned amounts were produced and packaged at other centres in Peloponnesos, the remaining amounts imply an operation of at least 30-40 packing units in Messenia alone. The most likely explanation for the under-reporting of the number of wholesalers or packers is their effort to avoid taxation imposed by the State. So, many did not possess the "proper buildings" where packing was supposed to take place and therefore they managed to escape the official censuses and hence the tax levies. Furthermore, the majority of the wholesalers seem to have only packaged rather small quantities of olive-oil - rarely in excess of 10-40 tonnes each year.(9)

. The national statistics gathered by the Ministry of Agriculture and PASEGES reveal (see Table 6.1) that in 1978 there were 35 packers officially registered.(10) These were mostly family businesses, seldom employing more than 10 people even during the peak season. Thirteen of them, or 37%, were owned by the cooperative sector which was relatively more developed on the island of Crete. As far as the regional distribution is concerned we can see from Table 6.1 that in 1970, 63% of the packing units were located in Attica and the Islands. The same percentage figure for regional concentration holds in 1978. Between

1978 and 1983 a massive increase in the number of packing units appears in the official statistics.(11) Ninety-six units in total operated in 1983 with a further six under construction. What these figures apparently show is that in the period of "anticipation" just prior to Greece's accession to the EEC and again in the early years of membership, a major increase in the number of units took place. This increase can be explained as a consequence of the specific industrial change generated by the CAP in the second stage processing of olive-oil. More specifically, the EEC factor triggered off technical improvements in the processing of olive-oil, as well as investment in new buildings in order for the units to be officially "approved" by Common Market standards and so receive the Consumption Aid.(12) It therefore appears that many more units were captured by the Official statistics in 1983 - but not because they were newly established entries, rather because they were internally upgraded.

The technical improvements in the methods of olive-oil processing were based on the use of equipment imported mainly from EEC member countries. Table 6.2 presents the value of such equipment by country of origin and for the years 1983, 1984 and 1986-1988.(13)

Table 6.2: Imports of Olive-Oil Processing Equipment
(in 1,000 drs)

Country of Origin	1983	%	1984	%	1986	%	1987	%	1988	%
Germany	2,980	3.03	-		114,089	41.12	27,125	16.99	9,765	3.58
Italy	94,827	96.41	69,804	99.87	91,900	33.12	122,848	76.96	224,811	82.63
Britain	-	-	-		29,100	10.49	-		1,597	0.58
France	-	-	-		302	0.10	-		18,813	3.24
Denmark		-	-		14,887	5.36	4,510	2.82	-	
Japan		-	-		14,857	5.35	-		-	
Other	549	0.56	90	0.13	12,294	4.43	5,129	3.21	17,078	6.27
Total	98,356	100	69,894	100	277,429	100	159,612	100	272,064	100

Source: N.S.S.G, External Trade, 1983, 1984, 1986, 1987, 1988 Code Numbers : 84595201, 84595200, 84792090

The dominant supplier country throughout this period was Italy but in 1986 Germany shot to prominance because of a special consignment in that year. One of the aims of introducing this new technology (operated by the Greek packers) was to improve the quality of the olive-oil. Up to the mid-1970's packing operations were primarily conducted in a manual way, which adversely affected the quality of the final produce.(14) Since then, the newly built units and the older ones which had modernized used continuous automated mechanical apparatus which protects the oil and prevents it from coming into contact with various unwanted influences from the air and the light and so guarantees the purity of the final quality.(15) The minimum technical requirements in terms of processing equipment used in a modernized packing unit, as outlined by the Ministry of Agriculture, are presented in an Appendix to this Chapter. The average cost of the equipment for a unit with an annual capacity of 1,500 - 2,000 tonnes of

olive-oil, was estimated by the Ministry to be, in 1987 prices, some 25 million drs. Total investment cost for the establishment of a new packing unit using the same technical equipment was 43 million dr.(16) Up to 40% of this cost is subsidised by the State and the E.A.G.G.F.(17)

Figure 6.2 depicts the packing process of edible olive-oil in Eleourgiki - one of the largest packing units of the olive industry. Edible olive-oil is further classified into Extra, Fine and Semi-Fine varieties, each corresponding to a different grading dependent upon the degree of acidity of the olive-oil.(18) As can be seen from Figure 6.2, part of the olive-oil goes through a process of filtering and polishing before it is packaged as Extra Virgin. Another part, containing Extra, Fine and Semi-Fine may be mixed with refined olive-oil produced in the refinery (of Eleourgiki). After polishing and packing the whole process results in branding prior to being sold.(19)

The creation of new units and the modernization of the older ones has led to a reduction in the degree of regional concentration of packers in Attica. In 1978, 63% of the packers were situated in Attica, while in Peloponnesos - one of the largest olive producing areas - only 14% of the packing units operated. In 1983, 52% of the packers operated in Attica and 24.5% in Peloponnesos. It therefore appears that other olive producing regions, apart from the capital and the islands, responded to incentives for modernization and intensification. This happened as domestic oil-traders, based in the olive producing regions, entered the processing of olive-oil in

response to the subsidies on investment and the Consumption Aid placed upon production.(20)

In March 1988 the most recent survey was conducted by the Ministry of Agriculture (YDAGEP) on the structure of the packing units.(21) Table 6.3 shows that the sector has witnessed a further increase in numbers, and the figure stood at 158. The pattern of regional distribution reveals that Attica and the islands had just under half (47.5%) of the packing units. Second is Peloponnesos with 28.5%, then north Greece with 15%, Crete 5% and central Greece and Epirus with 4%. The contribution of the cooperative sector fell from 37% in 1978 to 13% in 1988. This obviously means that the private sector grew at a much faster rate than the cooperatives as far as numbers are concerned. In terms of capacity though the cooperative sector retained and even managed to increase its percentage share of the total output (Table 6.4). More specifically, in 1981/82 25% of the total packaged olive-oil was produced by the cooperative sector. In 1982/83, 30% was produced and distributed by cooperatives while in 1984/85 the figure amounted to 43%.(22)

Further, in the early part of 1988 the State decided to establish 45 more cooperative packing units - most of them to be located in the olive producing areas of the country. By the summer of that year E.A.G.G.F had approved the establishment of 16 new units in accordance with EEC Regulation 355/1977.(23) In the context of Law 1262/82 concerning the modernization of the olive industry, and within the remit of the sectoral plan for 1987-1992, the State announced an

expenditure of 11.5 billion dr. Part of this allocation 1.6 billion dr, will be spent on olive packing units, while a further sum of 3.5 billion dr will be spent on the construction of a sunflower oil plant to be located in Thrace (north Greece).(24)

According to the Official Statistics then, a rapid increase in the number of small packing units took place within the ten year period 1978-1988. More specifically, the number of packers rose from 35 (in 1978) to 158 (in 1988) which is an astonishing growth of over 450%.(25) However, alongside this expansion in numbers went the concentration of output (and so of economic power) in the hands of three leading packers, Elais, Minerva and Eleourgiki. Over fifty percent of the branded olive-oil production is now attributable to these three companies alone.(26) In 1982/83 they accounted for 55% of the total branded olive-oil production, while in 1985 the figure was 49%.(27) This happened as the number of smaller businesses increased and the production of the second stage processing and packing units rose from 58,093 tonnes in 1982 to 78,407 tonnes in 1984 i.e. by 35%. Figures 6.3 and 6.4 show graphically the five largest companies share of the olive market in 1982/1983 and 1985.

6.1.2 Refineries and Olive Residue Plants

Some of the packers, and certainly the largest, combine packing with the refining of olive-oil. By the summer of 1988 the number of refineries in Greece had stabilised at 59 units with a potential total capacity of 964 tonnes/24 hours.(28) The regional distribution at the

beginning and at the end of the 1970s decade.is presented in Table 6.5. Forty-one percent are located in Attica and the islands, while Crete and west-central Macedonia follow with 19% and 13.5% respectively. The reason for this pattern of distribution is that the olive-oil produced in Attica and some of the islands possess a higher degree of acidity (>3.3°) than is suitable for human consumption.(29) Therefore refining the produce is necessary before it can be released onto the market. The refining process consists of three distinct stages during which both mechanical and chemical means are applied to the high acidity produce. The first stage involves neutralization of the acidity (which obviously adversely affects the taste of the oil). The second stage involves discolourization through which the olive-oil sheds any dark and undesirable colours that might have been acquired during the extraction process in the mill. The final stage involves deodorization so that the produce is cleansed from any undesirable odors. At the end of the process the olive-oil is now suitable for human consumption either in its processed form or in a mixture with virgin olive-oil. It is also worth pointing out at this stage that in addition to refining olive-oil, both olive residue oil and oil-seed oils may be refined in the same plant.(30)

It has been estimated that the mean annual employment in the refineries in 1988 was 767 people since they operate at full capacity for only 3-4 months a year.(31) In the Department concerned with the modernization of the olive industry and within the framework of the 1988 Five-Year sectoral plan, I found that there were no plans for any addition to the existing number of refineries : so the number will

remain at 59.[32] The average investment cost for a refinery is roughly of the order of 500-600 million dr (at 1988 prices) and usually the refineries are built together with olive residue plants.[33] Table 6.6 presents the number of olive residue plants, employment and capacity in H.P, according to the Official Statistics compiled by the National Statistical Service during the 1984 industry survey.

Table 6.6: Number of Olive Residue Plants, Employment and Capacity (H.P/h)

	Number	Employment	H.P/h
Productive Plants	39	629	11,490
Auxiliary Plants	12	35	-
Total (1984)	51	664	11,490
Total (1978)	48	847	10,149

Source: N.S.S.G, Industrial Census 1984 and 1978.

We may observe that out of the 51 olive residue plants operating in 1984, 12 operated as auxiliaries. The average annual employment in 1984 was 664 people. Total potential capacity was estimated at 11,490 H.P/h. Comparing 1984 with 1978 it is apparent that the number of plants has increased by 6.3% and their capacity by 13.2%. Employment on the other hand, was reduced by 21.6%. Olive residue plants constitute 1.5% of the Vegetable and Animal Fats Industry of Greece and only 0.2% of the Food Industry.[34] According to recent information obtained in the summer 1988 from the Ministry of Agriculture, there are 50 olive residue plants currently operating. Eight are cooperatively

owned with total potential capacity of processing 1,300 tonnes of olive residue per 24 hours. Their effective annual operational time is 3-4 months, and is therefore similar to that of the oil-mills. During periods of excess production, their operational time is extended as the quantity of olive residue taken to the plants cannot be absorbed despite their being in continuous operation. Instead the olive residue is kept in store until it can be processed. When production of olive residue is low at the mill then the extraction plants operate only one or two shifts daily.(35) Productive capacity of the olive residue plants (see Table 6.7) currently amounts to 7,710 tonnes/24h. Given this capacity, the annual operating period of about 90 days and the available quantity of olive residue to be processed, we can deduce that the utilization of potential productive capacity for 1985/86 was 75%. It therefore appears, that existing capacity not only covers production needs but as it is not fully deployed it results in higher production costs than necessary and is therefore a somewhat inefficient mode of operation. The regional distribution of olive residue plants is also shown in Table 6.7. Thirty-four percent are situated in Peloponnesos, and account for 37.6% of the total productive capacity while in Crete there is 26% of the plants representing 31.1% of the total capacity. Those two regions are the main producer areas of olive residue in Greece.

As far as mechanical equipment and building structures are concerned, many of the plants are of small capacity and employ old technical equipment which does not appear to meet the current legislation on safety and technical efficiency standards.(36) Table

6.8 shows the plants' distribution according to potential processing power of olive residue in tonnes per 24 hours.

Table 6.8: Distribution of Olive Residue Plants According to Capacity (tonnes/24 hours).

Capacity (tonnes/24h)	Number of Units	Percentage %
Up to 50	7	14
5i - 100	15	30
101 - 200	17	34
201 - 300	10	20
>301	1	2

Source: Agricultural Bank of Greece, Department of Agro-Industry, 1988.

The equipment used in all olive residue plants throughout Greece operates discontinuously in successive pressing stages. This contrasts with practices in other countries like Spain and Italy where the equipment which is used is of continuous operation.(37) One explanation behind this difference is that the most technically efficient use of such equipment would require productive plant capacity greater than 400 tonnes/24h (i.e considerably in excess of the Greek average). Furthermore, there is a high financial cost involved in its acquisition (and operation). In Greece, there is only one plant which currently has a capacity of greater than 400 tonnes/24h. An important additional advantage of the modern equipment is its ability with the addition of one more attachment to process oil seeds such as sunflower.(38) According to the sectoral plan for 1983-1987, published

by the Ministry of Agriculture, three more olive residue plants owned cooperatively are currently under construction in Heracleon, Crete, financed and constructed by Eleourgiki; on the island of Lefkada; and in Rhodes constructed by the Union of Olive cooperatives of that island. There are also three private olive residue plants under construction in Etoliko (central Greece), Molae (of Lakonia) and Heracleon (Crete).(39)

In order to observe the basic economic parameters of the olive residue subsector a sample of six firms were chosen, and their consolidated balance sheets re-constituted for three years, 1983, 1984 and 1985.(40) The businesses included in the sample are:

1. Anatoli Avea, based in Hania, Crete and employing between 86-100 people;

2. Eleourgia Pyrgou S.A, based in Elia in Peloponnesos and employing between 27-50 people;

3. Eleourgia Magnesias S.A, based in Volos and employing between 6-25 people;

4. Eleourgia Argonafplias - Bro. Koufaki, based in Argos, employing between 5 - 30 people;

5. Zaharioudakis S. A, based in Viotia and employing between 10 - 25 people; and finally

6. Hatzelis K - Eleourgia Spartis, based in Sparti and employing 14 people.

The performance of the businesses was tracked over 1986, 1987 and 1988 but, unfortunately I could not obtain sufficient information to construct uniform consolidated balance sheets for the whole period 1983-1988. The main reason for this was the fact that one of the sample firms, Zaharioudakis S. A., closed down in 1986. Further Eleourgia Pyrgou S.A, has not published any balance sheet for 1988. After 1985 a uniform sample could only contain four businesses. In the choice of the sample the main criterion was that the firms should produce only unrefined and refined olive residue oil. We should also add that Eleourgia of Greece, could not be included in the final sample since, being the largest firm in the subsector, it could well have distorted the value of the indicators. In Tables 6.9 and 6.10 the consolidated balance sheets over 1983-1985 of the firms are presented as well as some performance ratios calculated on the basis of the information available.(41)

First we may observe that the value of the businesses' total assets account has increased by no less than a third (37.5%) during 1983-1985

Table 6.10: Sample Accounting Ratios

	1983	1984	1985
Liquidity Ratio[1]	1.07:1	1.12:1	1.09:1
Gearing Ratio[2] (Capital based)	78.1%	76.9%	85.3%
Fixed Assets Ratio[3]	24.3%	23.7%	17.9%
Performance Ratio[4]	5.9%	5.4%	4.3%

Notes:
1. Current Assets/Current Liabilities
2. Borrowings/Total Assets
3. Net Value of Fixed Assets/Total Assets
4. Net Pre-Tax Profits/Total Capital

Source: Table 6.9

The greater part of this increase concerns current assets or working capital since the net value of fixed assets has remained nearly constant (in fact it has registered a small increase of only 1.5%). This shows that there has been little internal expansion and modernization in the sample firms. During 1983-1985 it appears that liquidity and profitability of the sample companies have declined. The decline in liquidity seems to be largely due to relaxation in working capital control, and has resulted - especially for 1984/1985 - in a worrying reliance on extended trade credit. Nevertheless, the sample's liquidity ratio moved on a relatively higher level than the corresponding one for the food industry and "total" industry, (refer to Table 6.11). The decline in profitability has been caused by all types of cost increasing at a faster pace than sales revenue. The gearing ratio has ranged over quite high levels in 1983 and 1984, and in 1985 there was a further increase to 85.3%. This is mainly attributable to a rise in short-term loans. The degree of gearing

reflects the impact of borrowing upon the level of pre-tax profits. It indicates that the effects of gearing on fluctuations in profit, and more specifically on the performance ratio, are increasing. Furthermore, we can observe that the degree of gearing for the sample businesses moved at a higher level than that of the food industry or the total industry. The performance ratio was found positive but with a downward trend. On the other hand, the performance ratio[42] as measured by own capital return compared favourably with the same ratio for the food industry and total industry (refer further to Table 6.11).

It therefore appears, that net pre-tax profits of the sample firms were positive during 1983 - 1985 but this is so, only if we do not include Eleourgia of Greece S.A, in the sample - which suffered significant losses. However, the gearing ratio was very high in 1985 and borrowed capital mainly concerned short-term loans. This signifies a high level of risk arising from the sample businesses' gearing position. The fixed assets ratio remained low throughout the period under examination, which indicates that the nature of the production process did not involve the introduction of any complex technical equipment.

Between 1986-1988, only four of the firms were included in the sample, as mentioned above. The value of the businesses total assets account increased by 83%, and the greater part of this increase concerned working capital (see Tables 6.12 and 6.13). The value of fixed assets also increased by 45% within this period which means that there has been some activity in terms of internal expansion and

modernization. The fixed assets ratio shown in Table 6.13 ranged from 15-17% during 1986-1988 and this implies that the sample units are capital-intensive with respect to working operations. It is worth pointing out that this feature characterises commercial rather than industrial units.

Table 6.13: Sample Accounting Ratios, 1986-1988

	1986	1987	1988
Liquidity Ratio	0.6:1%	1.2:1	1.1:1
Gearing Ratio (Capital Based)	70.4%	82.7%	91.5%
Fixed Assets Ratio	16%	17%	15%
Performance Ratio	6%	0.3%	-5.7%

Source: Table 6.12

We observe that the liquidity ratio has increased between 1986-1988 and stood at 1.1:1 in 1988 which means that the companies can finance their current liabilities from current assets so they do not run an immediate risk of running down their fund of operational *finances*. However, the extremely high gearing ratio has affected the net pre-tax profits of the businesses, which in 1988 were therefore negative. The decline in profitability arises from sales cost and administrative expenses increasing much faster than sales themselves. On the other hand, the sample businesses' reliance on trade credit as a source of finance appears dangerously high, and it will probably be necessary for them to seek alternative sources of finance in the immediate future.

Even though the businesses included in the sample are of different size and are located in different regions these factors do not appear to significantly affect their trading patterns, and so the accounting ratios may be used as a basis for judging performance.(43) We may now conclude that the picture presented by these indicators is one of greatly fluctuating profits accompanied by very high gearing ratios. This implies that in the olive residue subsector the relatively small increase in the number of units, and capacity expansion which has occurred between 1978-1988, is based on a rather weak financial position. One might therefore expect that its competitiveness would be seriously impaired in the freer trade environment of the Single Market (1992).

6.1.3 Table Olive Processing Units

According to the N,S.S.G Industry Survey of 1984, 175 units were involved in the processing of table olives. Of those 150 operated with "known" capacity and 16 operate as auxiliary plants.(44) As shown in Table 6.14, between 1978-1984 the number of units increased by 42 or 31.6%; their capacity as measured in H.P/24h increased by 30.5%; and the average annual employment by 53.2%.

Table 6.14: Number of Table Olive Processing Units, Employment and Capacity in H.P/24h

	Productive Units		Auxiliary Units	Total 1984	Total 1978
	Number of Units	Capacity			
Units	159	150	16	175	133
Employment	1,568	1,544	47	1,615	859
Capacity	3,946	3,946	-	3,946	1,203

Source: N.S.S.G, Industrial Census 1984 and 1978.

We may observe that the increase in the number of units has been combined with a much larger increase in the number of people employed in them. Table 6.15 shows the number of processing units, employment and capacity in H.P/24h for 1984 according to employment size.

Table 6.15: Table Olive Processing Units According to Employment Size, 1984

Size	Number of Units	Total Employment	Capacity(HP/2yh)
0-1	35	38	155
2	29	62	160
3-4	38	137	466
5-9	31	218	772
10-19	21	302	353
20-29	12	289	503
30-49	7	273	524
>50	2	296	1,013

Source: N.S.S.G, Industry Survey 1984.

We observe that 76% of the total number of units are small businesses employing 1-9 people, while 23% of the units employ 10-49 people. Only two units (less than 1%) employ more than 50 people each. If we combine this information with the increase in employment between 1978-1984, it appears that the newly established processing units were of medium size (i.e. employing 10-49 people). On the other hand, according to figures published by the Agricultural Bank of Greece relating to 1984, there were only 63 processing units of table olives with total capacity equal to their oil-bank capacity i.e. 75,900 tonnes. Of these, 21 units were owned cooperatively with a capacity of 34,700 tonnes, and 42 units were privately owned with a capacity of 41,200 tonnes. The considerable difference between the sources on the number of units is due mainly to the fact that the N.S.S.G has included small local processing units which are operated and owned by the producers themselves.(45)

The regional distribution of the 63 processing units is given in Table 6.16. Many units (36.5% of the total) are located in central Greece mainly in the provinces of Magnesia and Fthiotida. These units account for 48.4% of the total capacity (in tonnes). Another 28.8% are situated in Peloponnesos and west Sterea and account for 23.6% of total capacity. The regional distribution of processing units seems to closely mirror the regional production of olives.

Table 6.17: Production of Olives 1981/1982 (In tonnes).

Region	Production	Percentage %
East Macedonia and Thrace	2,535	3.19
West and Central Macedonia	3,361	4.23
Epirus	9,540	12
Central Greece	24,622	31
Peloponnesos and West Sterea	27,775	35
Attica-Sterea-Islands	10,600	13.3
Crete	1,000	1.25
Total	79,433	100

Source: Agricultural Bank of Greece, Department of Vegetable Production, 1984.

Recent information from Eleourgiki for the Summer 1988, puts the number of table olive processing units at 66. Of these 24 are cooperatively owned and 42 private, accounting for a capacity of 47,000 and 41,200 tonnes respectively.(46) Tables 6.18 and 6.19 present consolidated accounts of a sample of eight table olive processing units for the period 1983-1987, as well as some ratios calculated on the basis of the available data.(47) For 1988 my sample was reduced to six units because the other two had failed to publish balance sheets in that year. All units of the sample are mainly engaged in the processing of table olives, i.e., olives in olive-oil, in vinegar, salted, stuffed, and inside tin-plated containers. The selection was

also based on the regional distribution of the units. Details on the firms are presented in Table 6.20.

Table 6.20: The Sample Firms

Name	Region	Employment	Year of Establishment
Agrevi S.A	Fthiotis, Central Greece	2-8	1977
Inteal Ltd.	Faliro, Attica	5-100	1933, Ltd 1976
Xenia Fine Foods S.A	Pallini, Attica	30	1966
Siouras S.A	Volos, Sterea	28	1925, S.A 1978
Sapounas & Co S.A	Volos, Sterea	10	1924, S.A 1971
Livio S.A	Thessaloniki, Macedonia	10	1967, S.A 1977
Toulpak S.A	Agrinio, Epirus	50	1978
Petropouli Bro.SA	Kavala, Macedonia	10-100	1980

Source: I.C.A.P

An analysis of the figures presented in Table 6.18 reveals that the value of the sample's total assets' account in 1984 increased by 13.4% (compared with 1983) and continued to rise in 1985 (by 15.8% compared with 1984). In 1986 there was a further increase of 5.6% but in 1987 there was a 1.6% reduction on 1986, which was followed by an even further reduction of about 1% in 1988. The increase in this account between 1983-1986 was mainly due to the growth of working capital since the net value of fixed assets was reduced by 8.4% in 1985 compared with 1984. This signals a lack of investment in the sample firms. Between 1986-1988 there was a reduction in the working capital, hence the reduction in the total assets account. Within the same period we can

also observe a large increase in fixed assets. But a word of caution is appropriate here: the monetary unit in which the accounts are expressed represents a different measure of value in successive years (i.e. the accounts are not expressed in current cost accounting terms). For example, an increase in the monetary amount of fixed assets may be shown although the real value of the assets may have remained constant.

Table 6.19(a) presents the accounting ratios of the sample firms. We observe that the liquidity ratio moved slightly above the unit (i.e. >1) in 1983, but through time it shows an upward trend which reflects a safer financial position for the sample. Furthermore, the liquidity ratio moves in consonance with the corresponding ratios of the food and total industries, (see Table 6.19(b)). The gearing ratio moved at quite high levels, and followed an upward trend with the exception of 1987 where it fell back to 52.3%. Nevertheless the sample's degree of gearing remained at lower levels compared with those of the food industry and total industry. The fixed assets ratio shows a downward trend: and from a level of 41.4% in 1983 it was reduced to 29.1% in 1985, 23% in 1986 and 22% in 1987. But in 1988 the ratio rose to 37%. This type of movement obviously shows that the nature of the sample businesses is primarily commercial. The performance ratio is positive throughout the period 1983-1987, but with significant variations from year-to-year. During 1986-1987, for example, there was a dramatic drop in value from 4% to 0.02%. Furthermore, for the sample of the six firms in 1988 the ratio assumed a negative value. In the period 1983-1985, the performance ratio of the sample as measured by own capital

return moved at higher levels than that of the food industry and the total industry, with the exception of 1985.

The retention of a large amount of stock - nearly 60% of working capital in the sample businesses - is the main feature of the table olive processing units since the annual closing date of accounts coincides with the harvesting of the raw material. We can also observe from Table 6.18 that the contribution of the sample businesses' own capital to the total is quite high which is encouraging in terms of the sample units being in a reasonably safe financial position. The table olive processing units constitute the only subsector of the olive industry which until recently (1988) was under a National support scheme instead of being incorporated into the CAP.(48) It is a relatively labour-intensive subsector (as indicated in Table 6.15), and according to Eleourgiki and the A.B.G the number of processing units now ranges between 63-66. We can conclude that even though some of the main accounting ratios of the sample are not discouraging (i.e. the liquidity and gearing ratios) performance has deteriorated through time indicating that cost increases have not only diminished the possibility of their earning profits, but they have now exhausted reserves so that there were losses in 1988.

6.2 Structural and Organisational Features of the Groups of Second Stage Processing Units

Second stage processing is divided structurally into two main parts. The first is characterised by a host of small firms, both private and cooperative, who compete with each other for a share of

domestic and export markets. The second sees a struggle between leading private and cooperative packers who, between them, determine the trading rules for the industry. At the top end of the spectrum lie enterprises such as Elais, Minerva and Eleourgiki, who incorporate within their internal organisation all activities and the whole range of the different production processes in this second stage processing of olive oil. At the lower end, there are smaller independent firms specializing in one or other of the main production processes i.e. table olives, olive residue oil or simply just the packing of olive-oil.(49)

It appears that this latter part of the olive industry has undergone profound change in a relatively short period, which spans the years of Greece's accession to the European Community. On the one hand, these changes concern an expansion in the number of units engaged in processing, and an increase in capacity through modernization and the installation of technical equipment. On the other hand, they concern a greater concentration of output and economic power into the hands of three leading packers, Elais, Minerva and Eleourgiki. It is important to point out that the bulk of this change has taken place in the packing and branding of olive-oil i.e. the sub-sector directly articulated into the CAP. For their part the refineries, the table olive processing units and the olive residue firms have not reacted as strongly to the new external influences.

It seems clear that the current trend of expansion in the number of small units can be explained as a temporary phenomenon arising from the

financial incentives in the CAP. This is because even those parts of the olive industry which are not greatly affected by the CAP regime in terms of price support schemes - like the table olive processing units - have certainly undergone some structural change and capacity increase though modernization. Nevertheless this restructuring was not based on small, economically efficient units which responded to an expansion in the domestic and export demand. It reflected rather the rise of more obviously commercial oriented enterprises, in an increasingly competitive environment, with greatly fluctuating profits and high gearing ratios. The question of competition between the second stage processing units will be taken up in Chapter Seven after the discussion of my fieldwork findings in Messenia Province.

Apart from these responses the mode of organisation in the second stage processing underwent change. More specifically we can witness the strengthening of the cooperative form of enterprise within the favourable political environment created by the PASOC Administration over 1981-1989. This in turn meant a shift of power within the industry towards Eleourgiki.

6.2.1 The Cooperative Organisation

The cooperative organisation of the olive sector follows a pyramidical structure (see Figure 6.5). We may observe that the olive cooperatives are organised and operate at three different levels.(50) At the bottom of the pyramid lie the first-order cooperatives which constitute the base for the operation of the whole system. They

represent the interests of some 2,098 olive cooperatives and first-stage processing units (i.e. oil-mills). In theory they are associated with 347,438 olive growers - or over 90% of the total number of olive growers in Greece.(51) These first-order cooperatives join together in a broader geographical setting to make up a second tier of olive cooperatives - known as the Unions of Olive Cooperatives. There are 57 such Olive Unions involved with second-stage processing.(52) At this level, the table olive processing units, the olive residue plants, the refineries and the packers are connected together through the marketing channels - though they may retain their independence as self-managed units. The Unions then, join together to make up the third-order Central Union of Olive Growers, Eleourgiki.

At the apex of the cooperative pyramid is the Panhellenic Association of Agricultural Cooperatives, PASEGES - the head of the agricultural cooperative movement. It was first established in 1935 in Athens. According to its Manifesto, and within the context of Law Decree 921/1979, it represents all the various agricultural cooperatives operating at the different levels in national and international meetings.(53) It is a full member of the appropriate international and European organisations and, according to Law Decree 1541/1985, PASEGES has a number of definite responsibilities. It does not take any direct part in the production, distribution or trade in agricultural goods. It acts as an advisor to the Central Cooperative Unions, the second-order cooperative unions and also to the first-order cooperatives. It monitors and supports their activities in several different ways. It takes part in the bargaining procedures concerning

labour contracts as far as those working in agricultural cooperatives or similar organisations are concerned. It has the power to formally suggest new measures for the restructuring of agricultural production, and for the establishment and modernisation of existing processing units.(54) In theory PASEGES is supposed to actively encourage the growth of the idea of cooperation and to serve the interests of those farmers who are already paid-up members of the cooperative societies. However, in the past there have been occassions when it has only acted as an agent of the different State administrations - and has in fact been in conflict with the interests of the farmers.(55)

In principle the monitoring and administrative control of the cooperative movement lies within the remit of the Ministry of Agriculture. In practical terms the A.B.G has been assigned the responsibility for all State issues concerning cooperatives since 1929 (the date of its establishment). In the context of implementing agricultural policy, the presence of the ABG is required at all management meetings of the first-order, second-order and Central Unions in which the ABG has an involvement.(56) The ABG is responsible for those decisions relating to regulation, the issue of manifestos, and the establishment - or liquidation - of cooperative organisations. It operates a large network of branches - currently 294 - throughout the country. It also maintains a staff of 32 inspectors for overseeing the cooperative offices and a further 32 inspectors who have the responsibility for technical offices.(57) Its sources of capital (Table 6.21(a)) and its distribution to the rural sector (Table 6.21(b)) are presented for the period 1980-1984. In addition to these

features the ABG's involvement in 54 agribusinesses shows that it has assumed the role of a moving power as far as the development of the cooperative organisation in Greece is concerned.(58) Apart from financing cooperatives the ABG is also involved in other related activities such as financing agricultural exports and imports, and assisting with foreign currency and farming insurance schemes through the various cooperatives.

From the early 1980's the ABG, in the context of the Law Decree 1541/1985 which sought to develop and modernise agricultural cooperatives, lent large sums of money to cooperatives at all the different levels. However, because of the structural and operational weaknesses of the movement, and the relatively high interest that had to be levied on these loans, the outcome has been disappointing in that most of the cooperatives have not been able to meet the interest payments.

Additional interest on the deferred payments has exacerbated the problem and now the outstanding debt to the ABG is very considerable.(59) Table 6.22 presents some recent figures of the level of indebtness with respect to the ABG. We may observe that Eleourgiki is the third largest indebtor to the ABG (after KYDEP and SECOVE S.A). The recent Regulation 29/3/1989 on the settlement of cooperatives' debts attempted to get to grips with this difficult issue. In the context of the Regulation, a number of special studies on the viability of the indebted cooperatives were undertaken in order to better determine their future level of operation and their possible

modernisation. Also the publication of cooperatives' annual balance sheets became compulsory. The investigation was to be undertaken by a special inspectorate who would decide the re-scheduling arrangements for the debts outstanding until the beginning of 1989. The units judged viable would be assisted in their modernisation including the improvement to internal organisation, management structures, and their financial planning. The rest would have to close down. By the end of 1989 cooperative debts were indeed settled. For its part PAGEGES has arranged special courses on cooperative education, including management, information technology, marketing of agricultural goods and credit relations.(61)

As shown by the pyramidical structure of olive cooperative organisation (Table 6.5), the third-order Central Union or the main representative of the movement is Eleourgiki, the largest union in the country in terms of membership. Because this is such an important organisation I propose to discuss it separately.

6.2.2 Eleourgiki

Administratively Eleourgiki seems to be divided into the following categories: ten central and four peripheral departments; two production units - located on the outskirts of Athens; and two wholesaling units, one in Thessaloniki and one in Heracleon.(62) Table 6.23 shows the members of Eleourgiki by administrative area.

Table 6.23: Members of Eleourgiki by Administrative Area

Areas	Unions of Olive Cooperatives	First-Order Olive Cooperatives	Olive Grower Membership	%
Sterea - Thessalia	13	704	96,696	27.8
Peloponnesos	14	774	80,134	23.1
Crete	16	668	78,135	22.5
Epirus-Ionian Islands	7	443	47,305	13.6
Other	7	319	45,168	13.0
Total	57	2,908	347,438	100

Source: Eleourgiki, No.1, 1985, p.9.

We may observe that Peloponnesos has the second largest number of members with 80,134 olive growers. Sterea-Thessalia has the largest membership but they are mainly table olive producers from Central Greece. The Internal organisation of Eleourgiki's production consists of the following units:

(i) Installations for olive-oil processing with a refinery; currently the daily potential capacity is 570 tonnes;

(ii) Two olive residue oil production units with potential processing capacity of up to 400 tonnes of olive residue (daily);

(iii) One unit processing high acidity olive residue oil with a daily potential production of 10 tonnes;

(iv) One unit concerned with cooking fats and margarine with a potential daily production of 60 tonnes;

(v) Fourteen processing and packaging units of olives with a potential daily production of 7-8 tonnes in small containers, and 200-500 tonnes in larger containers;

(vi) Two soap production units with an annual capacity of 5,000 tonnes;

(vii) Oil-banks and storage space with a total potential capacity of 233,00 tonnes of olive-oil and olives.(63) Apart from the table olive processing plant all the production units are concentrated in the same location, i.e., Elefsina, on the outskirts of Athens. The former (the processing of the table olives) takes place in another plant owned by Eleourgiki, also on the outskirts of Athens. Eleourgiki possesses 35.7% of the total oil-bank capacity of the country. All of its oil-banks are situated in Attica. The process of oil-bank construction between 1981-1984 was as follows: 23,000 tonnes additional oil-bank capacity in 1981, 25,000 tonnes in 1982; 35,000 tonnes in 1983 and 47,000 tonnes in 1984. Today it has the capacity to store almost a quarter of a million tonnes (233,000) of olives

and olive-oil. The amount Eleourgiki spent on construction projects (including oil-banks) over 1981-1984 was in ascending order: 26,567, 46,960, 96,777 and 83,829 thousand drs.(64) By Greek standards this was a considerable investment programme.

Until 1980 Eleourgiki acted as an intervention agency. It collected olive-oil quantities on behalf of the Ministry of Agriculture.(65) From 1981 to 1985 Eleourgiki collected on behalf of the EEC. In 1981 however it entered the olive-oil market and since then its sales volume has been increasing year-by-year. Figure 6.6 presents Eleourgiki's sales between 1978-1988. It has now become the single largest olive-oil packer in Greece. Table 6.24 shows sales volumes and values of olive-oil sold by Eleourgiki in the domestic market between 1981-1988.

Table 6.24: Volume and Value of Sales by Eleourgiki, 1981-1988.

Year	Quantity (In tonnes)	% Annual Change	Value (In million dr)	% Annual Change
1981	4,406	-	560.5	-
1982	5,113	+16	743.9	+ 33
1983	10,128	+98	1,927.9	+159
1984	13,752	+36	3,226.7	+ 67
1985	19,000	+38	5,510.5	+ 70
1986	26,500	+77	8,951.3	+ 90
1987	23,000	-13	7,015.0	- 22
1988	25,000	+ 9	8,328.7	+ 19

Source: Eleourgiki, Department of Domestic Trade, 1988

We can readily observe the substantial increase in sales volume. In 1987, there was a drop of 13% - which was not compensated for the next year's increase of 9%. This fall was because 1987 proved to be a difficult year for the olive-oil trade. The main reason was the imposition of Negative Monetary Compensation Amounts (NMCA) on exports by the EEC.(66) Then Eleourgiki also reduced its domestic sales in 1987 because, for the first time, it began cooking fats and margarine production in an attempt to compete with Elais and Minerva and so improve its financial position. In that year (1987) Eleourgiki sold 1,000 tonnes of cooking fats which represented 15% of the domestic market, while in 1988 it sold 1,500 tonnes. It also sold 500 tonnes of margarine in 1987, which represented 9% of the market; and in the following year Eleourgiki sold 1,800 tonnes of margarine thereby increasing its market share to 16%. Eleourgiki also sold 700 tonnes of soap in 1988. The inputs for the production of cooking fats and margarine are imported - especially from Malaysia.(67) It appears therefore that a process of diversification has taken place even in the Central Union of Olive Growers to include margarine and cooking fats destined for the domestic market. In this sense since 1987 competition has been intensified with Eleourgiki, Elais and Minerva as the leading packers. Table 6.25 presents Eleourgiki's export sales volume between 1978-1988.

Table 6.25: Eleourgiki's Exports Sales Volume (In tonnes)

	Virgin Olive-Oil	Courante	Refined	Total
1978	145	406	1,004.7	1,556.4
1979	625	0.4	4,107.6	4,733.0
1980	642	-	8.2	650.2
1981	-	3	-	3.0
1982	-	5	-	5.0
1983	23,215[1]	-	-	23,215.0
1984	22,301[2]	-	2,004.0	24,305.0
1985	N.A[3]	N.A	N.A	16,829.4
1986	800	400	11,000	12,200.0
1987	N.A	N.A	N.A	17,000.0
1988	15,000	10,000	-	25,000.0

Notes:
1. Extra : 9,176, Semi-Fine: 4,941, Fine: 1,065, Lampante: 8,033.
2. Extra: 3,266, Semi-Fine: 2,633, Fine: 1,737, Lampante: 8,033
3. Not Available

Source: Eleourgiki, Department of Marketing, 1988.

We may observe that taking an overall perspective, Eleourgiki's exports have been increasing, especially after 1986. Since 1983 the largest part of its exports has been virgin olive-oil. Looking at unpublished receipts and expenditure accounts for the company for 1986 and 1988 the following points can be made. In the former year (1986), total receipts of the enterprise amounted to 14,957 million dr. and total expenditure was 14,118.3 million dr. The largest part of this expenditure, some 77.94%, was made up of raw materials especially material inputs for the production process - mainly olive-oil supplies. Sixty percent of Eleourgiki's receipts comes from its domestic sales of olive-oil. In 1988, receipts reached 20 billion dr. Table 6.26 shows

the structure of the company's expenses for 1986 on olive-oil and soaps.(68) Each year Eleourgiki decides how much olive oil it will require and plans its purchases according to both quality and quantity variables. Then it sets in motion the agents of its buying system as far as the main olive-oil producing centres are concerned. This "system" consists of deploying the resources of the second-order unions of olive cooperatives. In places without such unions Eleourgiki hires private representatives to make the purchases according to orders received from the central purchasing services department.(69)

Buying olive-oil is another arena where Eleourgiki competes with Elais and Minerva as well as the smaller units of the private sector. Acting as a price setter at the beginning of each crop year it determines the rules by which transactions are to be made in the olive market. In 1988, Elais, Minerva and Eleourgiki formed a (perfectly legal) cartel on the import price of olive-oil supplies, but this only seems to have held for a few months. The reaction of the olive growers through their cooperatives forced Eleourgiki into revising the decision and to increase the level of olive-oil prices. Usually, the market price does not fall below the "set price" fixed by Eleourgiki.(70) In case there are any olive-oil quantities unsold at the end of the marketing year, Eleourgiki guarantees to buy its members' own production at that price.

6.3 Seed-Oils Processing Units

During this period of structural change which is underway in the olive industry, a potentially close competitor, oil-seeds, began to develop strongly in the domestic market. As mentioned already (Chapter Five), the connection between the two industries lies in the fact that leading industrial olive-oil producers began to act as agents for the seed-oils industry in Greece. It therefore seems apposite to present a brief overview of the production structure of the seed-oils processing units.

In Table 6.27 the number of productive units, employment and capacity according to the industrial censuses of 1978 and 1984 compiled by the N.S.S.G is presented. We may observe that in 1984, there were 40 productive seed-oils units in operation throughout Greece. Ten operated as auxiliaries to the sub-sector.

Table 6.27: Number of Seed-Oils Units, Employment and Capacity (H.P/h)

	Oil-Seed Productive Units	Employment A.A.E[1]	Capacity (H.P/h)
Total Number	30	654	-
Number with known Capacity	27	643	26,736
Auxiliary Units	10	67	-
Total 1984	40	720	26,736
Total 1978	34	365	9,982

Notes: 1. Average Annual Employment

Source: N.S.S.G, Industrial Censuses 1978, 1984.

The average annual employment in all the units amounted to 720 people. Of those 654 were employed in the 30 productive units and 67 in the ten auxiliary plants. The total capacity of the 27 productive units with known data was 26,736 H.P/h. A comparison between the figures for 1978 and 1984 shows that the number of units increased by 17.6%, and the number of persons employed increased by no less than 97.3%. Capacity on the other hand, showed the most dramatic rate of increase at 167.8%. In a wider context the seed-oils processing units accounted for 1.2% of the vegetable and fats industry, 0.2% of the food industry and 90.03% of total industry in 1984.

The regional distribution in 1985 by province and administrative area, as well as capacity (in tonnes/24h) is presented in Table 6.28. The data suggests that Sterea and Eboea possess an average of 68% of the total capacity of oil-seed units, while they produce only 23.1% of total cotton seed production and no sunflower seed. In Thessaly there is 10% of the total capacity yet the region produces 47,.7% of cotton seed production and 1% of total sunflower seed. Thrace on the other hand accounts for 1.2% of total capacity while it produces 78.5% of the total sunflower seed production. It therefore appears that there is regional concentration of seed-oils processing units in Sterea where the smallest quantities for processing are being produced. From this point of view we may say that the regional distribution of plants does not appear to be very "rational".(71) This happened because north Greece as a production region of seed-oils developed much later that Sterea. Especially sunflower production in north Greece (Thrace and

Macedonia) increased dramatically only very recently as already mentioned in (Chapter Five).

By the end of the Second World War the level of development of the productive forces in the domestic seed-oils units was not advanced in terms of technical equipment and the prevailing techniques of oil-seed oils extraction. Production was through the use of hydraulic presses, and the refining of the produce was accomplished in separate units using only very basic plant and machinery.(72) The result was poor quality produce which enjoyed only very limited demand in the domestic market. In the 1960s, however, with the general development of the productive forces in the economy as a whole, the older seed-oils units began using more modern technical equipment and the newer ones were built and operated with "screwed" presses in place of the hydraulic varieties.(73) The advantage of the new presses was considerably larger production per hour. In 1974, for the first time, the method of "pressing out" was introduced into the process of production. As a result, the oil-seed oil obtained was ready for immediate consumption and free from any undesirable odors. The first company to adopt this method was Mili Soyas.(74)

Table 6.29 shows the state of affairs in the seed-oils units as far as technical equipment, production and processing techniques are concerned. Out of the 26 units included in Table 6.29, nine do not go any further than the neutralization stage in downstream processing. The reason for this lies with the small size of the units and their use of the older vintages of technical equipment (i.e. the extraction

method, their small absolute capacity, and the discontinuous neutralization method). An exception is Soya Hellas, which specializes in the processing of soya oil and uses the "pressing out" method to complete the first stage of its production.(75) Out of the remaining 17 units which, after neutralization of the produce continues with refinement, five operate old and new methods of production viz the "extraction" and "pressing out" methods for all varieties of seed-oils. Three out of the five units are owned cooperatively and were established only recently (1980, 1983, 1984). The Agroinvest S.A. was the largest in the country, with a capacity 1,000 tonnes/24h, and capable of processing any oil-seed variety. It started operating in 1983 but closed down by 1987 because of severe financial difficulties. These related to the firms' inability to find the required quantities of raw material,inadequacies in product distribution, and high interest charges of $70-75 million.(76) Based on figures published by the Cotton Organisation, the estimate for oil-seed production processed in 1983-1984 was 494,332 tonnes.(77) Table 6.30 presents the quantities of seeds processed by the units and also the percentage of the potential capacity used by each productive unit. We can deduce that capacity utilization per seed-oil unit ranged from 10.34% (Diaulias AEBE) to 95.24% (Union of Agricultural Cooperatives of Thessaloniki), while the average capacity utilization was 41.94%- assuming, as I think is reasonable an average operating period of approx. 300 days/year.

A sample of five businesses was chosen for analysis and a statement of their consolidated accounts was constructed for 1983, 1984 and

1985.[78] Unfortunately only the accounts of three of these companies were available for the years following i.e., 1986, 1987 and 1988: the other two firms did not publish their balance sheets for these three trading years. The firms are:

a) Sporeleougia Thrakis S.A. based in Alexandroupolis and employing between 10-30 persons;

b) Mili Soyas S.A., based in Korinthos and employing 85 people;

c) Soya Hellas S.A., in Eboea, employing 65 people;

d) Eleourgia of North Greece S.A, in Emathia, employing between 150-170 people;

e) Oliva S.A, in Moshato of Attica, employing between 6-22 people.

In the sample selection only those units which engage primarily in oil-seed oils production were taken into account. I also decided against including Agroinvest S.A, because being the largest in the sector its presence may have distorted the value of the derived accounting ratios.

In Tables 6.31 and 6.32 the consolidated accounts of the sample are presented as well as the relevant ratios calculated on the basis of the balance sheets.

Table 6.32: Accounting Ratios of the Sample of Oil-Seed Firms

	1983	1984	1985	1986[1]	1987[1]	1988[1]
Liquidity Ratio	1.16:1	1.09:1	1.09:1	1.45:1	1.23:1	1.40:1
Gearing Ratio	75.9%	78.5%	78.3%	62.7%	67.7%	53.5%
Fixed Assets Ratio	32.3%	24.9%	21.8%	9.9%	26.9%	33.4%
Performance Ratio	5%	5.5%	4.2%	-3.2%	4.6%	5.4%

Notes: 1. The sample for these years only comprises of three units.

Source: Table 6.31

The nominal value of total assets of the sample increased by 60.7% between 1983-1985. This was mainly in the form of additions to working capital while the net value of fixed capital remained at its 1983 level. So, the ratio of fixed assets was quite low in 1985 (i.e. 21.8%) while 68.3% of working capital was kept in the form of stocks. The liquidity ratio varied little registering a small decline in the last two years 1984 and 1985. This suggests that the sample firms could pay their way in the short-run. However, the gearing ratio between 1983-1985 moved at high levels, and 76-78% of total assets consisted of borrowings. Furthermore, the sample firms' degree of gearing, which was 3.6:1 in 1985, exceeded that of a sample of 2030 industrial units which, in 1985, was 2.78:1. Excluded from this large sample, which was surveyed by the Administration of Small-Medium Businesses Organisation (EOMEH), are the "problematic" companies,(79) and the 100 largest industrial units of Greece (in terms of the value of their working capital). This implies that the gearing ratios were not distorted

because of different trading patterns or of "overborrowing" as is certainly the case of the "problematic" companies. The performance ratio of the five sample businesses was positive throughout the three year period, but in 1985 it was reduced in relation to the two previous years.

Looking at the sample of the three units over 1986-1988 we may observe that the value of their total assets more than doubled, and this increase was mainly due to the rise in fixed capital by some 611%. It therefore appears that a significant pattern of long-term investment was undertaken by the sample units during this period. To further support this observation, we may note that the ratio of fixed assets increased from 9.8% in 1986 to over a third (33.4%) in 1988. The liquidity ratio moved comfortably above unity (between 1.2 and 1.45) while the gearing ratio improved from 62.7% in 1986 to 53.5% in 1988. All this may have been reflected in the performance ratio which recovered dramatically from a negative performance in 1986 (-3.2%) to a healthy 5.4% in 1988. If we compare the performance of the three units over 1986-1988 with that of the sample of five units in the preceeding three years we may observe a considerable improvement in the liquidity and gearing ratios - which are, of course, important indicators of a healthier financial position.(80)

The connection between the seed-oils units and the olive refiners is straightforward: the former can act as a supplier to the latter. Large industrial units in the olive refining sub-sector use oil-seed oils as raw material for the production of cooking fats and margarine.

So companies such as Elais, Minerva and Eleourgiki can buy inputs from seed-oils units or import directly from Malaysia even if they do not produce sufficient quantities of sunflower oil or corn-oil themselves to cover domestic demand and their needs. A certain quantity of oil-seed oils is annually used by these units for margarine production depending of course on prevailing market conditions. All this suggests that the future development of seed-oils processing units is tied up- at least in part - with their role as suppliers to the major packers involved in the olive industry. In this way seed-oils will be branded and then sold to urban consumers. These points will be taken up later in Chapter Eight.

Conclusions

This Chapter has examined the nature of change in the second stage processing of olive-oil. I have tried to argue that the expansion in the number of small units is probably a temporary phenomenon brought about by financial incentives given through the CAP regime. The case of olive residue plants and of the table olive processing units suggests that the financial basis of their expansion has been rather weak.

As far as organisational changes are concerned, recent developments have strengthened the cooperative mode of organisation in the industry as a conscious endogenous response to the entry and dominant position occupied by the multinational subsidiaries, Elais and Minerva. As a result, the presence of Eleourgiki supported olive-oil producer prices, but by the same token it meant higher input cost for the second-stage

processors. This state of affairs has led the major packers to gradually diversify production away from olive-oil and towards seed-oils. This forced Eleourgiki to resort to a similar strategy, and this has began to undermine the base of the olive industry and so affect deleteriously the interest of the olive farmers.

In order to gain further insight into the financial performance of the second stage processors in the context of the incentives provided by the CAP a sample of firms has been selected for further investigation. Only after this evidence has been presented and discussed can we hope to derive any firm conclusions concerning the nature of recent developments in this second stage part of the olive industry. This is attempted in Chapter Seven.

References

1. All the activities which I have included under the second stage processing of olive-oil take place in urban centres - but they are usually located close by the rural olive producing areas. The only exception to this is the processing and packing practiced by the producers themselves in certain regions. this exception concerns only small quantities of olives and very often these small rural units are not even included in the official statistics. Ministry of Agriculture, Department of Information, 1989 and A.B.G, Department of Agro-Industry, 1988.

2. See G. Kutsumaris, The Structure of the Greek industry, (Athens, 1963) and D. Katohianou, Sectoral-Regional Analysis of Greek Manufacturing, (Athens, 1984).

3. In 1988 Elais, Minerva and Eleourgiki accounted for 52% of total branded olive-oil output. Concentration of output into their hands has been a phenomenon of the early 1980s and still continues despite the considerable expansion in the number of smaller units in second stage processing. Information on output was received from the Ministry of Agriculture (YDAGEP), 1989.

4. This classification is found in the N.S.S.G industrial censuses of 1978, 1984 and also in statistics provided by the Agricultural Bank of Greece.

5. See N. Lihnos, The Olive Tree and its cultivation, (Athens, 1949) p.35.

6. Information obtained from Eleourgiki, Department of Marketing, March 1988.

7. N.S.S.G, Industrial Census, 1970.

8. Information obtained from the Institute of Industry and Commerce of Messenia Province : Unpublished Export Records, 1970 (consulted in the Summer of 1988.

9. P.A.S.E.G.E.S, The Greek Agriculture : Processing and Marketing of olive-oil, (Athens, 1978). The attempts by wholesalers to escape official censuses and tax levies was mentioned during my extended discussion with Mr Y. Xiloyiannis (PASEGES, 1988) and Mr V. Yiannopoulos, Director of the Institute of Industry and Commerce of Messenia province. Furthermore, during my fieldwork visit to the table olive processing unit "Bro. Vraka" in Calamata, in the Summer of 1988, I personally observed the extent of these practices which still exist.

10. Ministry of Agriculture and P.A.S.E.G.E.S. Survey, 1970. See also Table 6.1.

11. ibid., 1983.

12. According to these standards the minimum output requirement for a unit to be eligible to receive the consumption aid was 60 tonnes per annum, packaged in containers of 5lt or 1lt. The technical requirements are set out in: "Study for the Establishment - Modernisation of Packing Olive-Oil Units", Ministry of Agriculture, Department of Agro-Industry and Supplies, (Athens, January 1987).

13. This equipment includes (a) systems especially designed for the filtering and polishing of olive-oil; (b) systems for processing of oils and production of margarine. This information was obtained from the Ministry of Economic Affairs, Department of Tax and Duties, 1989.

14. See A. Kiritsakis, The Olive-Oil, (Thessaloniki, 1988) and M. Guida, "Fats and Oils in Italy", Speech given in the Annual Conference of the IFMA-IMACE-Rome, May 1984.

15. See A Kiritsakis, 1988, ibid., p.69.

16. See "Study for the Establishment - Modernisation of Packing Olive-Oil Units", Ministry of Agriculture, Department of Agro-Industry and Supplies, (Athens, January, 1987).

17. ibid., The CAP is administered by the European Agricultural Guidance and Guarantee Fund (EAGGF). Its two major functions are: the guidance and improvement of farm production, and the guarantee or protection of farmers income. See G. N. Minshull, The New Europe : An Economic Geography of the EEC, (London, 1985). p.119.

18. Extra Olive-Oil is denoted when the percentage content of the produce in oleic acids is less than one. Fine Olive-Oil is denoted when the percentage content is less than 1.5, and Semi-Fine is denoted when the percentage content is less than 3.3. Ministry of Commerce, Price Records, 1989.

19. Information on the packing process of edible olive-oil in Eleourgiki was obtained during my visit to the production unit in Elefsina. The Chemical Engineer Mr P. Skiadas, was kind enough to instruct me in this matter.

20. Information derived from records on units registered to receive consumption aid in Messenia Province. Institute of Industry and Commerce, Messenia, Summer 1988.

21. Ministry of Agriculture (YDAGEP), Industrial Survey completed in March 1988.

22. ibid., Records on Packers' applications for consumption aid, 1983, 1985.

23. Ministry of Agriculture, 1987-1992 Sectoral Plan for the Olive Industry, 1988.

24. ibid.,

25. See Tables 6.1 and 6.3.

26. Ministry of Agriculture (YDAGEP). Records on consumption aid applications, 1988.

27. ibid., 1982/1983, 1985.

28. Ministry of Agriculture, Sectoral Plan for the Olive Industry, 1987-1992, 1988.

29. See A. Kiritsakis, 1988, op.cit, p.98.

30. ibid.,

31. Agricultural Bank of Greece, Department of Agro-Industry, information provided by V. Evagellou, 1989.

32. Sectoral Plan of the Olive Industry, 1987-1992, op.cit.,

33. ibid.,

34. N.S.S.G, Industrial Census, 1984.

35. See Y. Xiloyiannis, Annual Report on the Development of the Olive-Oil Sector, (Athens, 1982).

36. A.B.G, Department of Agro-Industries, 1988 Survey. Unpublished information proved by V. Evagellou, 1989.

37. A. Kiritsakis, 1988, op.cit., p.121.

38. ibid.,

39. Sectoral Plan of the Olive Industry, 1987-1992, op.cit.,

40. The selection of the sample was determined after extensive discussion with Commercial Bank personnel (the Commercial Bank of Greece finances most of these units) and also after consultation of lists which referred to enterprises' number of employees and regional distribution. Furthermore, I took advice from several financial analysts employed by I.C.A.P. Concerning the representativeness of the sample, it is true that I would have liked to have had more years and a larger number of firms but what the financial indicators of this sample and the others that follow suggest seems to be in broad consonance with the generally understood picture within the industry. As far as the credibility of the financial data used is concerned, irregularities cannot be detected unless one delves further into accounting practices and methods which are firmly entrenched into the Greek economy's financial structure. For further information on consolidated balance sheets and general terminology and techniques used by English standard see S. A. Greenman, Accounting in Modern Form,

(London, 1966) and R. H. Parker, Understanding Company Financial Statements (Britain, 1982). The balance sheets and additional information on the sample units were obtained from the I.C.A.P.

41. I have made use of the techniques presented in J. D. Blake, The Concise Guide to Interpreting Accounts, (London, 1989). In the interpretation of the ratios I have also benefitted from discussion with Mr. K. Sugden of the Department of Business and Management, University of Salford.

42. The performance ratio can also be defined as: Net Pre-Tax Profits/Own Capital. This ratio is used quite often in the Greek accounting system.

43. See J. D. Blake, 1989, op.cit.,

44. N. S. S. G, Industrial Census, 1984 and 1978.

45. Information obtained from the N.S.S.G, through discussion with G. Katsaros, member of the team responsible for the compilation of the statistics.

46. Eleourgiki, Department of Information, Summer 1988.

47. The balance sheets and additional information on the sample units was obtained from the private statistical organisation I.C.A.P, based in Athens and the Official Government Newspaper, various issues.

48. By article 70 of the Treaty of Rome, on Greece's accession the country was allowed to keep national measures for table olives until 31 December 1985. On the 20th December 1985 the Council decided to continue with national measures until 31st December 1987. Since then, all subsidies have been gradually reduced until they are to be totally abolished in 1990.

49. Ministry of Agriculture (YDAGEP) 1988 survey of the processing units in the olive industry, completed March 1988.

50. See M. Nikolinakou et.al, Strategy for the Development of the Cooperative Sector in Agriculture, (Athens, 1986).

51. Eleourgiki, Department of Information, 1989.

52. ibid.,

53. PASEGES, Manifesto of its Establishment, 1935 and Interviews with representatives, 1988.

54. ibid.,

55. See P. Avdelidis, The Agricultural Cooperative Movement in Greece, (Athens, 1986).

56. See M. Nikolinakou et.al, 1986, op.cit.,

57. ibid.,

58. On the role of the A.B.G. as a promoter of the cooperative movement I have benefitted from extensive discussion with V. Evagellou, Head of Agro-Industry Department, A.B.G, in 1988 and 1989.

59. ibid.,

60. Economicos Tahidromos, 24 June 1989.

61. Information obtained through discussion with Y. Xiloyiannis, PASEGES, 1988.

62. Eleourgiki, Department of Information, March 1988.

63. ibid.,

64. Eleourgiki, Department of Planning, 1988.

65. Eleourgiki, Department of Domestic Trade, 1988.

66. The Negative Compensation Amounts were imposed in 1987 because of the situation of surplus in the olive market. For each kg of olive-oil exported to a Community country the exporter had to pay an amount of up to 25% of the selling price (the actual sum depending on the type and quality of the produce).

67. Eleourgiki, Department of Supplies, information received from A. Kiriakoulakos, Head of the Department, March 1988.

68. Eleourgiki, Department of Planning, Confidential, 1989.

69. Eleourgiki, Department of Supplies, discussion with A. Kiriakoulakos, March 1988.

70. ibid.,

71. In the sense that increased transport costs have to be incurred when the produce is taken to the plants for oil extraction.

72. A.B.G, "Report on Technical Development of Seed-Oils Processing Units", (Athens, 1983).

73. ibid.,

74. ibid.,

75. Cotton Organisation, "Production Techniques in Seed-Oils Processing Units", (Athens, 1985).

76. ibid., and information received from I.C.A.P., 1988.

77. Cotton Organisation, "Production of Seed-Oils 1982-1985", (Athens, 1985).

78. The sample was selected in terms of representatives according to size of employment of the firms and the level of modern production equipment used. Information on this was provided by the Cotton Organisation and the Commercial Bank of Greece (Mr A. Katsikas, 1988 was especially helpful). The balance sheets and additional financial information were provided by the I.C.A.P.

79. This heading ("Problematic") includes those firms under State management since they have incurred huge losses. The losses of just eleven amounted to 223.9 billion dr. in 1988. Economicos Tahidromos, 15 June 1989.

80. See L.E Rockley, The Meaning of Balance Sheets and Company Reports, (Essex, 1983) and J. D. Blake, 1989, op.cit,.

Table 6.1(a):Packing Enterprises by Region,1970,1978 and 1983

	1970			1978		
REGIONS	CO-OPS.	PRIVATE	TOTAL	CO-OPS.	PRIVATE	TOTAL
East Macedonia and Thrace	-	-	-	-	-	-
West Central Macedonia	-	-	-	-	-	-
Epirus	1	-	1	1	-	1
Central Greece	-	-	-	-	-	-
Peloponnesos	2	2	4	3	2	5
Attica and Islands	2	17	19	3	19	22
Crete	5	1	6	6	1	7
Total	10	20	30	13	23	35[1]

Notes: 1. Annual Potential capacity 78,000 tonnes

6.1(b).Packers in Operation and Packing Units in The Process of Construction by Law 355/75 in 1983

	IN OPERATION		UNDER CONSTRUCTION	
REGIONS	NUMBERS	CAPACITY[2]	CAPACITY	TOTAL
East Macedonia and Thrace	2	250	-	250
West and Central Macedonia	15	4,000	-	4,000
Epirus	-	-	-	-
Central Greece	1	500	-	500
Peloponnesos	23	22,100	2,750[3]	24,850
Attica and Islands	50	80,650	6,900[4]	87,550
Crete	5	3,500	-	3,500
Total	96	111,000	9,650	120,650

Notes: 2. Tonnes/year
3. Olive Co-operative of Gargalianoi 650 tonnes/year
Olive Co-operatives of Lakonia 1,100 tonnes/year
Olive co-operatives of Trihonida 1,000 tonnes/yerar
4. Cefallonia ltd. 200 tonnes/year, olive co-operatives Zakenthos 2,500 tonnes/year, Olive Co-operative of Lefkada 4,200 tonnes/year.

Source:Ministry of Agriculture and PASEGES,1978 and 1983 Surveys

Table 6.3:Survey Results of Packing Units in 1988

REGIONS	CO-OPERATIVES	PRIVATE	TOTAL
East Macedonia and Thrace	1	3	4
West and Central Macedonia	3	17	20
Epirus	-	1	1
Central Greece	-	5	5
Peloponnesos	8	37	45
Attica and Islands	5	70	75
Crete	4	4	8
Total	21	137	158

Source: Ministry of Agriculture and Paseges, 1988 Survey

Table 6.4: The Ten Largest Packers of Olive Oil,1981/2,1982/3 and 1984/5

1981-1982

PACKERS	% CONTRIBUTED	QUANTITY[1]
Elais	28	10,500
Minerva	17	6,537
Eleurgiki	8	2,995
Katsakoulis	6	2,169
O.C. Lesvou	5	2,034
O.C. Pezon	4	1,502
O.C. Laconias	4	1,338
Abea Hanion	2	824
O.C. Coumvariou	2	814
O.C. Messenias	2	726
Total	78	29,439

1982-1983

PACKERS	% CONTRIBUTED	QUANTITY
Elais	22	12,997
Eleourgiki	14	8,341
Minerva	14	7,982
O.C. Lesvou	8	4,380
Katsakoulis	4	2,318
Bro. Arhondaki	3	2,013
O.C. Pezon	3	1,947
O.C. Loconias	3	1,544
Motakis	2	1,120
O.C. Colimvariou	2	1,101
Total	85	43,743

Table 6.4: Continued'

1984-1985

PACKERS	% CONTRIBUTED	QUANTITY
Eleourgiki	29.3	22,969
Elais	13	10,216
Minerva	6.6	5,154
Bro. Arhondaki	5	3,990
O.C. Lesvou	5	3,821
O.C. Eracliou	3	2,448
O.C. Pezon	2.6	2,068
Bro. Kefalea	2.4	1,855
O.C. Lahonias	2.2	1,728
O.C. Colimvariou	2	1,662
Total	71.1	55,698

Notes 1. Quantity in tonnes

Source: YDAGEP, Ministry of Agriculture, Greece,1988

Table 6.5: Regional Distribution of Refineries 1970-1978

REGIONS	1970 NO.OF PLANTS	1970 TONNES/YEAR	1978 NO.OF PLANTS	1978 TONNES/YEAR
East Mecadonia and Thrace	4	25	4	30
West and Central Mecadonia	8	80	8	96
Epirus	2	18	2	18
Central Greece	6	56	5	56
Peloponnesos	2	30	4	68
Attica and Islands	23	540	24	564
Crete	10	120	11	132
Total	55	869	59	9,64[1]

Notes 1. The capacity of 964 tonnes or 300,00 tonnes p.a is the potential capacity.Actual capacity does not exceed 50,00 tonnes p.a and this is the maximum amount the oil banks available in the refineries can hold.

Source: Ministry of Agriculture, 1988.

Table 6.7: Regional Distribution of Olive Residue Plants,1988.

REGIONS	CO-OP.	PRIVATE	TOTAL	TONNES/24H
Peloponnesos	1	16	17	2,900
Central Greece and Eboea	-	7	7	1,000
Thessaly and Epirus	-	-	-	-
Ionian islands	1	2	3	400
Thrace	-	1	1	60
Crete	3	10	13	2,400
Aegean islands	2	4	6	650
Dodekanisos	1	-	1	100
Total	8	42	50	7,710

Source: Ministry of Agriculture, 1988

Table 6.9: Consolidated Balance-Sheets of a Representative Sample of Firms in the Olive Residue Sub-Sector, 1983-1985 (million dr.)

	1983	1984	1985
Current Account			
Fixed			
Fixed Assets	421.3	448.6	477.3
Net Value of Fixed Assets	192.3	193.8	195.3
Liquid			
Liquid Assets	185.6	179.3	292.0
Reserves	413.0	444.7	591.7
Total Liquid Assets	598.6	624.0	883.7
Total Assets	791.0	817.9	1,88.1
Liabilities			
Own Capital	173.0	188.5	159.9
Borrowings			
Short-Term Liabilities	559.2	558.9	812.1
Long-Term Liabilities	58.8	70.5	166.1
Total Borrowings	618.0	629.4	928.2
Total Liabilities	791.0	817.9	1,088.1
Results			
Gross Profits	181.9	159.0	202.5
Net Profits	47.3	44.6	46.4

Source: Companies' Balance Sheets, ICAP and Official Government Newspapers,1983,1984,1985.

Table 6.11: Accounting Ratios of the Sample, the Food Industry and the Total Industry, during 1983-1985.

	Liquidity Ratio			Degree of Gearing[1]			Performance Ratio[2]		
	1983	1984	1985	1983	1984	1985	1983	1984	1985
Sample	1.07:1	1.12:1	1.09:1	3.57:1	3.34:1	5.80:1	27.34%	23.66%	29.02%
Food Industry	1.05:1	1.05:1	1.06:1	2.81:1	3.16:1	3.89:1	3.20%	5.40%	16.40%
Total Industry	1.11:1	1.12:1	1.10:1	2.35:1	2.50:1	2.78:1	5.20%	7.30%	12.80%

Notes: 1. Borrowings/Own Capital
2. Net Pre-Tax Profits/Own Capital

Source: National Statistical Service of Greece, Industrial Census, 1985

Table 6.12: Consolidated Balance Sheets of the Sample of Olive Residue Plants between 1986-1988

(In million drs)

	1986	1987	1988
Current Account			
Fixed Assets			
Fixed Assets	157.0	241.8	257.3
Net Value of Fixed Assets	157.0	241.8	257.3
Current Assets			
Cash			
Stock			
Current Assets	363.2	927.8	1,379.0
Total Assets	960.0	1,408.0	1,758.7
Liabilities			
Own Capital	219.7	343.7	527.1
Borrowings			
Current Liabilities	598.7	791.6	1,229.6
Long-Term Liabilities	77.3	372.5	380.0
Total Borrowings	676	1,164.1	1,609.6
Total liabilities	960.0	1,408.0	1,758.7
RESULTS			
Gross Profit			
Net Pre-Tax Profits	54.3	4.7	-123.7

Source: Companies' Balance Sheets, I.C.A.P and Official Government Newspaper, 1986, 1987, 1988.

Table 6.16: Regional Distribution of Olive Processing Units in 1984

Regions	Private		Cooperative		Total	
	Units	Capacity (tonnes)	Units	Capacity (tonnes)	Units	Capacity (tonnes)
East Macedonia and Thrace	1	300	1	500	2	800
West-Central Macedonia	2	1000	2	2500	4	3000
Epirus	1	500	4	3200	5	3700
Central Greece	17	19500	6	17200	23	36700
Peloponnesos and West Sterea	13	9600	5	8300	18	17900
Attica, Sterea and Islands	8	10300	3	3000	11	13300
Crete	..	-	-	-	-	-
Total	42	41200	21	34700	63	75900

Source: Agricultural Bank of Greece, 1988

Table 6.18: **Consolidated Balance Sheets of the Sample of Table Olive Processing Units**

(In million drs).

	1983	1984	1985	1986	1987	1988
Current Account						
Fixed Assets	364.4	368.5	337.6	336.2	271.0	423.8
Current Assets	477.2	585.9	767.3	958.2	770.1	857.4
Total Assets	841.6	954.4	1,104.9	1,450.7	1,215.4	1,157.3
Liabilities						
Own Capital	287.2	310.7	327.5	440.3	482.7	423.4
Borrowings						
Current Liabilities	459.6	552.1	694.9	802.0	545.9	721.7
Long-Term Liabilities	94.8	91.6	82.5	229.8	90.0	80.4
Total Borrowings	554.4	643.7	777.4	1,031.8	635.9	802.1
Total Liabilities	841.6	954.4	1,104.9	1,450.7	1,215.4	1,157.3
Net Pre-Tax Profits	18.2	49.6	33.3	57.5	0.3	- 43.4

Source: **Companies' Balance Sheets, I.C.A.P and Official Government Newspaper, 1983, 1984, 1985, 1986, 1987, 1988.**

Table 6.19(a): Accounting Ratios of the Sample of Table Olive Processing Units.

	1983	1984	1985	1986	1987	1988
Liquidity Ratio	1.04:1	1.06:1	1.10:1	1.19:1	1.14:1	1.19:1
Gearing Ratio	65.8%	67.4%	70.3%	71.1%	52.3%	69.3%
Fixed Assets Ratio	41.4%	37%	29.1%	23%	22%	37%
Performance Ratio	2.2%	5.2%	3%	4%	0.02%	-3.7%

Source: Table 6.18

Table 6.19(b): Accounting Ratios of the Sample, the Food Industry and the Total Industry, between 1983-1985

	Liquidity Ratio			Degree of Gearing[1]			Performance Ratio[2]		
	1983	1984	1985	1983	1984	1985	1983	1984	1985
Sample	1.04:1	1.06:1	1.10:1	1.93:1	2.07:1	2.37:1	6.3%	16%	10.2%
Food Industry	1.05:1	1.05:1	1.06:1	2.81:1	3.16:1	3.89:1	3.2%	5.4%	16.4%
Total Industry	1.11:1	1.12:1	1.10:1	2.35:1	2.50:1	2.78:1	5.2%	7.3%	12.8%

Notes: 1. Borrowings/Own Capital
2. Net Pre-Tax Profits/Own Capital

Source: N.S.S.G, Industrial Census, 1985

Table 6.21(a): Capital Sources of ABG, 1980-1984

(In million dr)[1]

	1980	1981	1982	1983	1984
A. Bank of Greece	63,341	117,660	141,268	211,479	233,563
B. Sources from Abroad	1,151	1,090	1,441	1,753	3,089
C. Agricultural Bank of Greece Operations	22,516	45,030	79,555	67,706	145,809
Total	87,008	163,780	222,264	280,938	387,461

Table 6.21(b): Distribution of ABG's Capital, 1980-84

(In million dr)[1]

BASIC CATEGORIES	1980	1981	1982	1983	1984
Cultivation	37,584	44,187.1	46,649	59,612.6	79,740.8
Security Loans	303.7	429.4	520.5	931.2	1,442.8
Cooperatives & Others	35,259.8	77,257.3	113,911.5	162,120.1	211,304.3
Middle-Term	84,530.9	100,795.9	109,828.2	130,090.8	203,842.4
Arranged	14,327.4	14,009.9	27,655.5	30,016.3	24,162.0
Public Tobacco	17,607.8	27,826.2	30,894.0	31,053.8	3,462.9
Public Supplies	694.3	3,845.9	1,726.4	465.1	335.6
Ministry of Agriculture, Intervention Agency	-	9,517.3	28,054.3	13,466.7	3,494.8
Special Financial Aids	-	13,639.8	-	-	-
Storage ABG.	388.7	493.4	643.4	758.3	868.8
TOTAL	190,606.6	292,002.2	359,883.8	428,514.9	528.654.4

Notes: 1. All sums expressed in current prices

Source: A.B.G. Department of Agro-Industries, 1984.

Table 6.22: COOPERATIVE DEBTS OF THE ABG, April 1989

(In million dr)

KYDEP (Cotton)	16,850
Eleourgiki	4,950
S.O. Union Patras	3,350
S.O. Union Lagada	500
S. O. Union Livadias	360
Ptinotr. Coop. Halkidas	500
Ptinotr. Coop. Thessalonikis	240
Ptinotr. Coop. Kinourias	120
PTinotr. Coop. Artas	120
Vine Cooperative "Marko"	500
S.O. Union Serron	250
S.O. Union Pierias	250
S.O. Union Piliou & N. Sporadon	240
Cooperative of Halkida	180
Union of Forest Coop. Thessalias	240
S.O. Union Alexandroupolis	120
S.O. Union Poligirou	120
S.O. Union Rethimnis	120
Coop. Pezon	430
Coop. Aharnon	240
Vine Cooperative of Nemea	120
S. O. Union of Dodekanisos	240
S. O. Union Kobotiou "Proodos"	120
Secove S.A.	6,430
Speka S. A.	2,480
Spe S.A.	1,240
Aevek S.A.	500
Coop. Industries of Thessalia	860
Kair S.A.	240
Sevath S.A.	360
Elvik S.A.	360
Sepek S.A.	120
Sekap S.A.	730
Rodopi S.A.	860
Synergal Ltd	2,480
Sergal S.A.	370
Elvigal	740
Agrex S.A.	1,100
Kinopraxia "Asti"	370
Agrobusiness Coop. Xiniadas	1,250
Agrobusiness Coop. Arkalohoriou	1,250
Total	51,900

Source: Economicos Tahydromos, 6 April 1989.

Table 6.26: Eleourgiki's Expenditure on Olive Oil and Soaps, 1986

Expenditure Items	Value in DR.	%
Inputs	10,949,276,000	77.94
Purchases	589,536,000	4.11
Auxiliaries	32,207,000	0.22
Fuels-Fertilisers	83,749,000	0.58
Containers	888,320,000	6.18
Labour	568,366,000	3.96
General Expenses	37,800,000	0.26
Interest	642,239,000	4.47
Paying Off Debts	28,331,000	0.20
Distribution Expenses	100,000,000	0.70
Special Compensation	198,464,000	1.38
Total	14,118,288,000	100

Source: Eleourgiki, Department of Planning, Confidential

Table 6.28: Regional Distribution of Seed-Oils Units in 1985

Regions	Cooperative	Private	Total	Capacity[1]
Attica & Corinthia	-	8	8	1,022
Viotia	-	5	5	435
Eboea	-	1	1	350
Fthiotis	-	2	2	700-1,045
Total of Sterea & Eboea	-	16	16	762,100-855,000[2]
Karditsa	1	-	1	80
Larisa	1	1	2	340
Total of Thessaly	2	1	3	420
Emathia	-	1	1	250
Thessaloniki	1	3	4	485
Serres	1	-	1	50
Pella	1	-	1	40
Total of Macedonia	3	4	7	247,500[2]
Evros	-	2	2	50
Total of Thrace	-	2	2	15,000[2]
Total of Greece	5	23	28	3,802-4,147

Notes: 1. Tonnes/24h
2. Tonnes/year

Source:Cotton Organisation,1988.

Table 6.29:Output and Production Techniques of Seed Oils Units,1985

NAMES OF FIRMS	PRODUCTION METHOD*	CAPACITY**	REFINING METHOD		ESTABLISHMENT AND MODERNISATION YEAR
			CONT.	DISCONT.	
Stauraetos & Co.	No	60	No	-	1967, 1974
Manos-Eleourgiki S.A.	No	150	No	Yes	1964, 1970
Skandalis & Co. S.A.	No	20	No	No	-
Oliva	No	60	No	No	1930, 1955, 1980
Sarelakos	No	100	No	Yes	1963, 1975, 1978
Mili Soyas	Yes	600	Yes	No	1974
Kafandaris-Papakostas	No	70	No	Yes	1965, 1969
Griva Bro. & Co. S.A.	No	20	-	-	1952, 1955
K.B. Markou Abee	No	100	-	-	1975, 1976
Dakar Abee	No	120	-	-	1977
Soya Hellas S.A.	Yes	350	-	-	1979
Agroinvest S.A.	Yes	1,000	Yes	No	1983
Bro. Vlitsou Abee	No	45	-	-	1971
Co-Op Karditsas	No	80	-	Yes	1967
Co-Op Thessalias "Kentauros"	Yes	220	Yes	-	1984
Bro. Magrizou S.A.	No	120	No	Yes	1962, 1978
Eleourgia of N. Greece S.A.	Yes	250	-	-	1983
Eleourgia of Salonica S.A.	Yes	130	No	Yes	1962
Seed-Oils of Salonica S.A.	No	105	-	Yes	1963, 1969
Bro. Karagiorga Abee	No	130	-	Yes	1975
Union of Co-Ops Salonica	Yes	120	Yes	-	1980
Co-Ops of Serres	No	50	No	Yes	1973
Co-Ops of Giannitson	No	40	No	Yes	1979
Egnatia	No	135	No	Yes	1959, 1961, 1967, 1972
Kouroudis	No	15	No	Yes	1964
Eleourgia Daulias-Sporelea Abee	No	125	-	-	1982

Notes: * "pressing out"
** Tonnes/24h

Source: Cotton Organisation, 1985

Table 6.30: Capacity Utilization of Seed-Oil Units 1983/84

(Oil-Seeds in Tonnes)

NAMES	Total Quantity Processed	Potential Capacity Tonnes/Year (300 Days)	% of Capacity Utilization
Manos S.A.	9828	45,000	21.84
Eleourgia Falirou	1656	4,200	39.43
Oliva S.A.	6245	18,000	34.69
Stauraetos	5371	18,000	29.84
Skandalis & Co.	1041	6,000	17.35
Sarelakos	7265	30,000	24.22
Mili Soyas	121000	180,000	67.22
Daker ABEE	27523	36,000	76.45
Markou AEBE	9864	30,000	32.88
Diaulias AEBE	3878	37,500	10.34
Griva BRO	4329	6,000	72.15
Vlitsou BRO	5332	13,500	39.50
Kafandaris-Papakostas	12846	21,000	61.17
Agroinvest	76636	300,000	25.54
Soya Hellas	90000	105,000	85.71
Union of Coop's Darditsas	16247	24,000	67.70
Ser. & SP. Koroni	8654	-	-
Magrizos S.A.	6029	36,000	16.75
Eleourgia of Salonika S.A	14048	39,000	36.02
Oil-Seeds of Salonika S.A	5121	31,000	16.52
Karageorgou BRO	6515	39,000	16.71
Eleourgia of N.Greece	10580	75,000	14.11
Union of Coops of Salonica	34288	36,000	95.24
Union of Coops Serron	3690	15,000	24.60
Union of Coops Giannitson	4011	12,000	33.43
Sporeleourgia Thrace	2130	10,500	20.28
Kouroudis D.	205	4,500	4.56
TOTAL	494,332	1,244,700	

Source: Cotton Organisation, 1985.

Table 6.31: Consolidated Balance Sheets of the Sample of Seed-Oils Firms, 1983-1986

(In million drs)

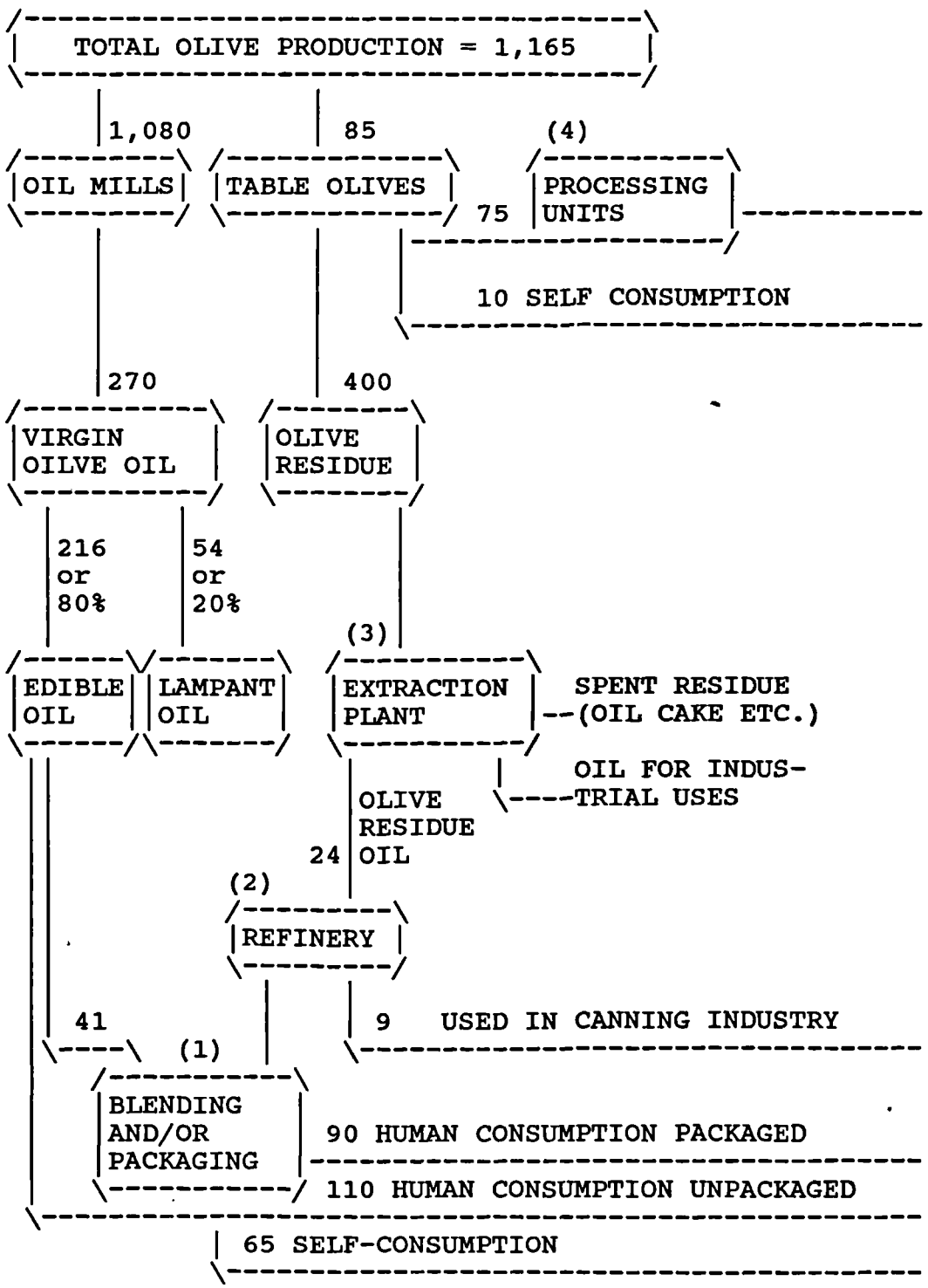
	1983	1984	1985	1986[1]	1987[1]	1988[1]
Current Account						
Fixed Assets	1301.0	1318.8	1400.7	159.0	915.5	1131.8
Current Assets	2702.5	3982.6	5033.8	1409.6	2400.8	2070.8
Total Assets	4003.5	5301.4	6434.5	1611.0	3402.5	3385.8
Liabilities						
Own Capital	964.2	1136.6	1393.2	581.6	1048.2	1444.7
Current Liabilities	2323.3	3658.9	4608.7	968.9	1940.0	1473.9
Long-Term Liabilities	716.0	505.9	432.6	41.4	366.2	337.6
Total Borrowings	3039.3	4164.8	5041.3	1010.3	2306.2	1811.5
Total Liabilities	4003.5	5301.4	6434.5	1611.0	3402.5	3385.8
Net Pre-Tax Profits	201.3	294.3	272.2	-52.4	156.3	184.4

Notes: 1. The sample includes only three units.

Source: Companies' Balance Sheets, I.C.A.P and Official Government Newspaper, 1983, 1984, 1985, 1986, 1987 and 1988.

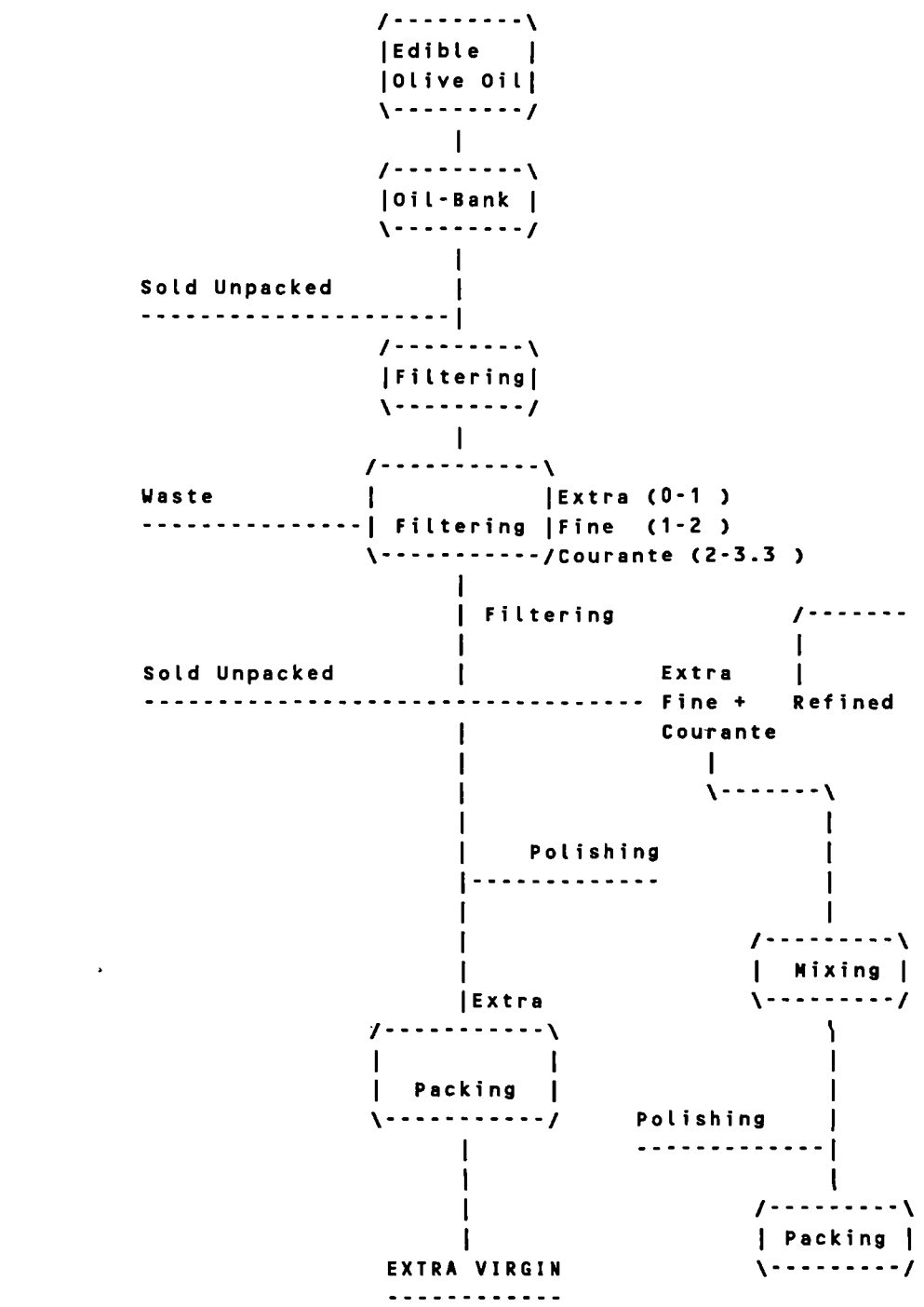
Figure 6.1: A Schematic Presentation of Refining and Packing based on 1988 Throughput Data

(in '000 Tonnes)



Source: Derived from N.S.S.G. and Eleourgiki Statistics, 1988

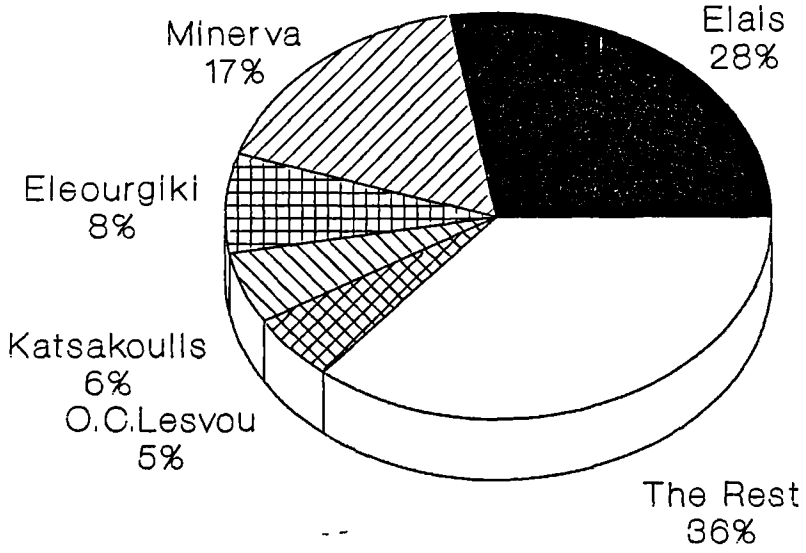
Figure 6.2: The Packing Process of Edible Olive Oil in Eleourgiki C.1988.



Source: Eleourgiki's Production Engineer, Summer, 1988

FIGURE 6.3
1982-1983 SHARE OF THE OLIVE-OIL MARKET

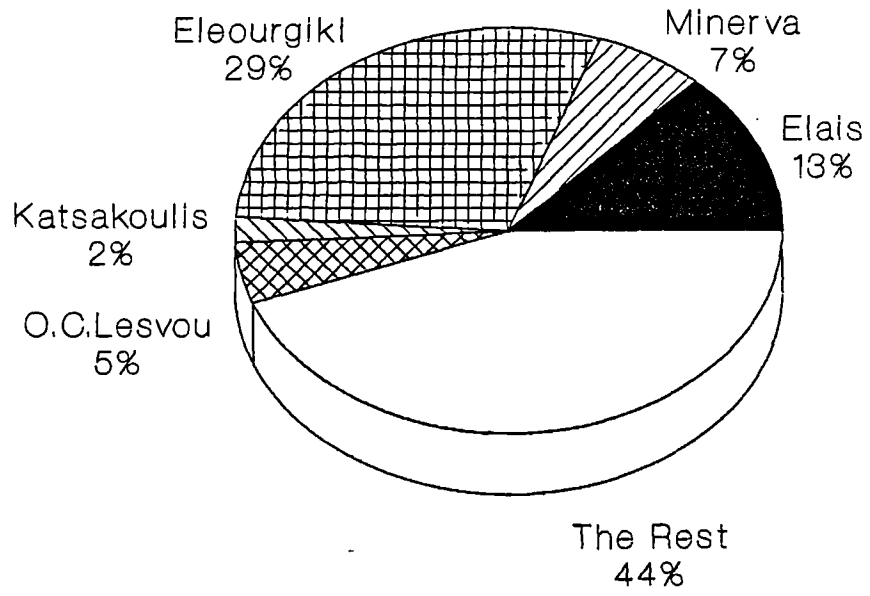
BY THE FIVE LARGEST PACKERS



SOURCE: MINISTRY OF COMMERCE, 1988.

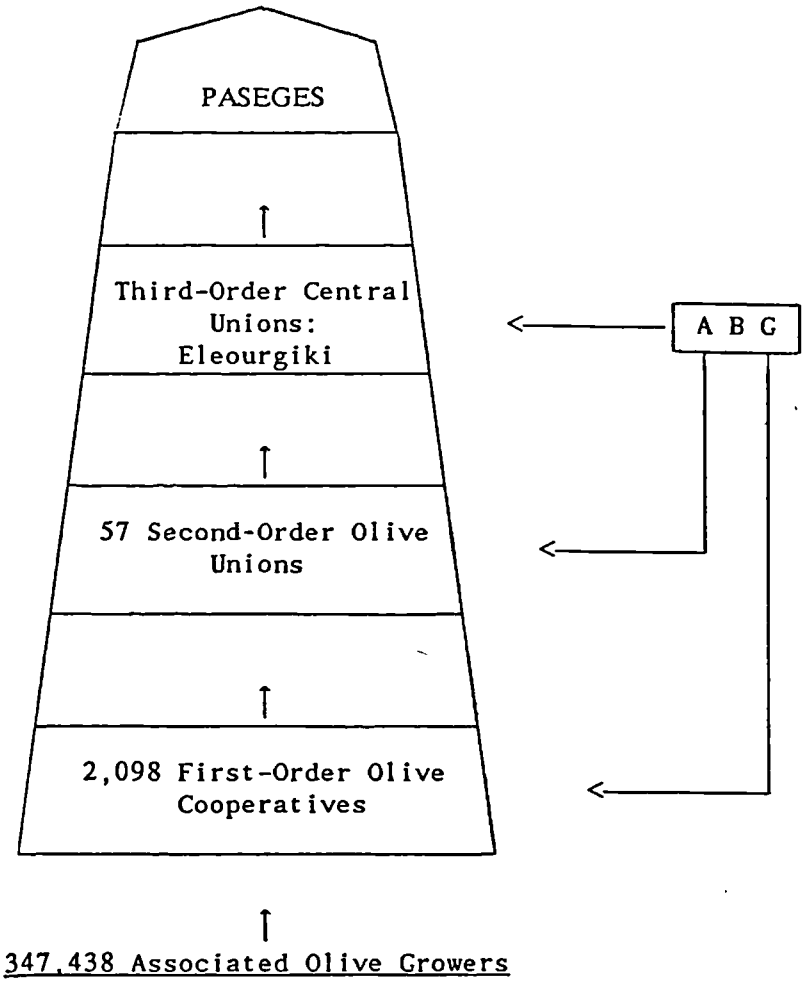
FIGURE 6.4
1985 SHARE OF THE GREEK OLIVE OIL MARKET

BY THE FIVE LARGEST PACKERS



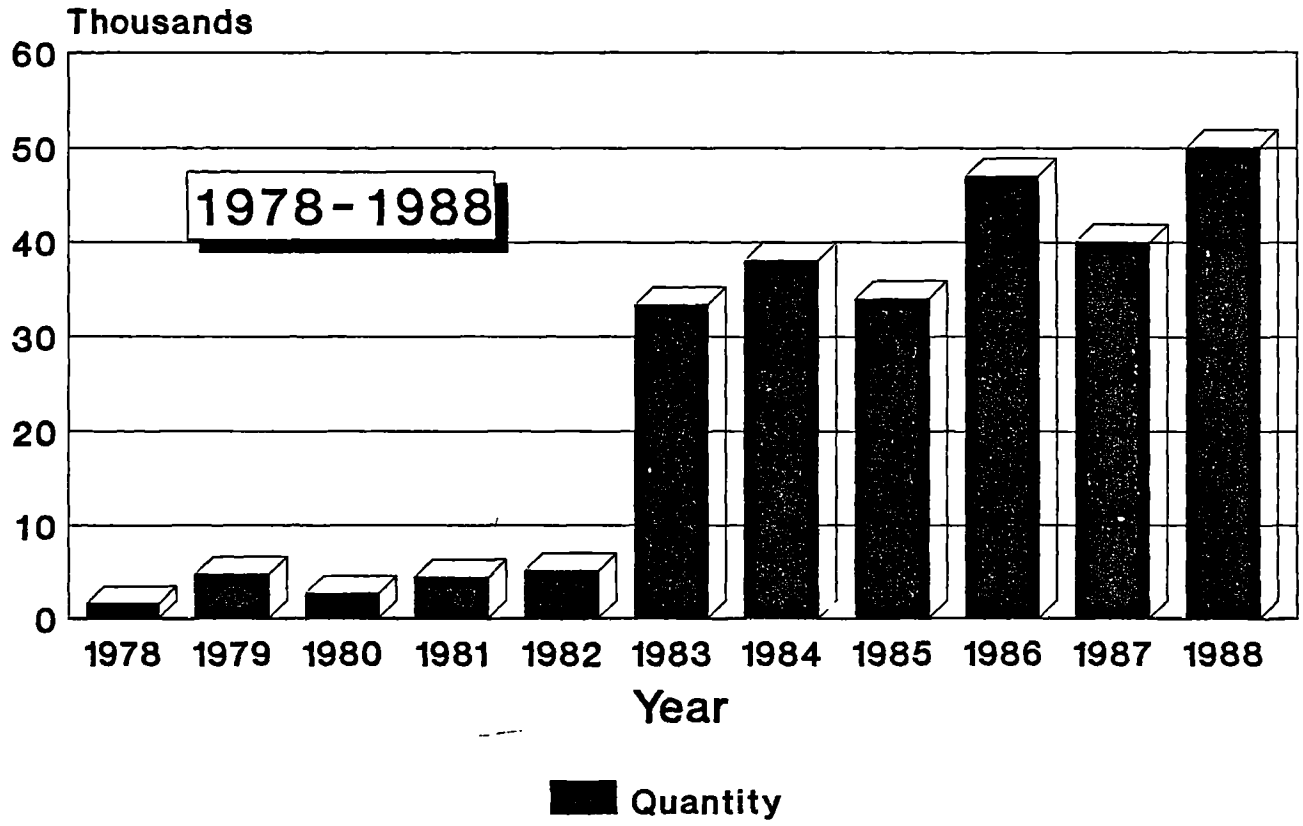
SOURCE: MINISTRY OF COMMERCE, 1988.

Figure 6.5: The Structure of the Olive Cooperative Movement



Source: A B G, Department of Cooperatives, 1988.

FIGURE 6.6
SALES VOLUME OF ELEOURGIKI:IN TONNES



SOURCE: ELEOURGIKI RECORDS,1988.

CHAPTER SEVEN

AN INVESTIGATION INTO THE FINANCIAL PERFORMANCE OF A SAMPLE OF COOPERATIVE AND PRIVATE PACKERS OF OLIVE-OIL

Introduction

In Chapter Six I attempted to show that the expansion of production and the process of modernization which has taken place in the second stage processing and packing units is based on a rather weak and unstable financial structure. An analysis of the balance sheets of a representative sample of firms from the processors of table olives and olive residue plants seemed to confirm this picture - though the amount of information available did not allow for an in-depth examination of the financial operations of the firms. My objective here is to throw some light on the financial performance of a sample of cooperative and private packers located in Messenia province. In particular I seek to examine the question already implicit in Chapter Six, that is, how do these firms actually manage to survive? I argue that a large part of the answer is connected with the CAP price support system. It is further contended that another important factor explaining the survival of the smaller (and indeed some of the bigger) units is the widespread practice of tax evasion. The most recent - and still unpublished study - of this phenomenon estimated that in 1988 Greece's black economy amounted to almost fully one-third (31.6%) of the official GDP.(1) As very little of such earnings appears to be reinvested in the enterprises themselves most, - if not all - of the units in the olive

industry remain commercially viable enterprises; and this is partly captured in their fixed assets ratio.

In Section One the sample of packers operating in Messenia province is discussed. It is argued that their financial performance as shown by their unpublished balance sheets and Profit and Loss accounts strongly suggests an artificial financial base - one highly dependent upon EEC subsidies. Furthermore, it is pointed out that tax evasion is commonplace business practice. Part One deals with definitions. I try to show that there cannot be a generally accepted definition of a small-scale firm. It seems more useful to define "small size" in relation to the specific socio-economic conditions prevailing in each country. Next, a working definition is adopted for the sample firms under investigation. In Part Two the sample units are described individually. It is argued that the majority of these firms are dependent on exports and therefore conditions in those markets directly influence their sales and hence their turnover. It is also shown that the cooperative units of the sample are not as active in the marketing arena - especially in export markets - as the private ones which have experience and have long-established commercial contacts. Part Three shows that there has been a dramatic increase in the level of technological modernisation in the packers of Messenia province. Over 75% of the sample firms use modern equipment for the processing and packaging of olive-oil, and this directly affects the quality of the produce.

Section Two argues that the evolution of the market structure in the second stage processing and packing of olive-oil lends some support to the theoretical findings of the contestable market hypothesis. Nevertheless, it is pointed out that the reliability of the results obtained in the course of empirical research into industrial organisation depends critically on the quality of the data employed. It seems clear that successfully capturing recent developments in the subsector is more than usually dependent upon the extent which valid information can be extracted from the data available.

Section Three discusses the financial situation of the small firms with special reference to the olive processing units. It is contended that the cost of borrowing funds, together with the inflexibility of the Greek financial structure, poses a considerable constraint upon their operations. In trying to find less costly ways of financing their activities the private firms resort to a number of legal and illegal practices which avoid the tight mechanisms of the Greek financial system.

7.1 The Packers of Messenia Province

7.1.1 Definitions

Definitions of "small firms" vary a great deal; most of the literature on developing countries deals with enterprises of between one and ten workers, but in a few cases it includes enterprises of a larger size. The terminology also varies as between the informal

sector, the urban traditional sector, the unprotected sector, petty commodity production and even non-capitalist production. But, by and large, the same core group of enterprises (at least when considering manufacturing) is included.(2) As far as the definition of small size in developed countries is concerned, a small firm is defined broadly as one with no more than 200 employees. This, of course, cannot be regarded as anything more than a rigid definition. The Bolton Committee, which investigated small firms at the beginning of the 1970's, found it impossible to adequately define a small firm in terms of employment, assets, turnover or indeed any other quantitative measure. The Committee focused on three main characteristics.(3) First a small firm had a relatively small share of the market. It was unable to significantly influence prices in the market through its own actions and it could not influence its external environment in a manner which would assist the company's competitive position. Secondly small firms were "managed in a personalised way", with at most a few specialised management functions, or tiers of management. Decision making was controlled by the owners of the business who exercised the principal management functions. Finally, small firms were independent. The owner manager had effective control of the business and were not subject to the controls applied within larger organisations, though they might be limited in their actions by obligations to financial institutions.

Perhaps there cannot be a generally accepted definition because small size really needs to be considered in relation to the specific socio-economic conditions prevailing in each country. In the olive sector of the sample area under examination there are two refineries

which deal exclusively in processing olive residue and market in olive residue oil. All the other units deal mainly with filtering, blending and packaging olive-oil which they market under different brand names. In this sense I would define these units as small size as no actual chemical processing takes place which would transform the nature of the product. On the other hand, the largest of these units, as far as employment and turnover are concerned, depend primarily on exports. Export markets are often unstable, so a small business is often quite unable to influence outcomes acting on its own - indeed it is invariably subjected to the market and not the other way around. Also lack of flexibility (partly due to an inability to diversify production) may be added to the features of small size firms in the sector under consideration.

7.1.2 Description of the Sample

Small businesses, especially in a predominantly rural area like Messenia, have several distinguishing features. This is because of the special type of forward and backward linkages governed by their geographical location. In many cases they have established personal long-term relationships with the larger local olive producers as well as with the cooperatives. On the other hand, most of these businesses rely on exports as Messenia has an important port (Calamata) which makes her a natural centre for olive-oil shipments abroad. Very few firms out of the thirty or so that operate in the province are limited to producing for purely national consumption. The sample surveyed consists of eight businesses mainly involved in olive-oil and olive

production, two businesses which produce olive-residue oil, and two cooperatives, one of the second-order called the "Central Union of Cooperatives of Messenia Province", and the other is the first-order Olive Cooperative of Gargalianoi.(4) A list of the sample businesses with names, employment and year of establishment is given in Table 7.1. All the units included in the sample - apart from the cooperatives- are family businesses.

Table 7.1: Sample Enterprises

NAME	Current Employment	Year of Establishment
1. Linardakis	65	1910
2. Vraka Bros.	10	1928
3. Kalogeropoulos & Sons S.A[1]	100	1948
4. Plemmenou Bros.	14	1952
5. Malamas Stathis	5	1958
6. C.C.U.M.	130	1973
7. Kefalea Bros.	534	1975
8. Koutelas	20	1976
9. Eleourgia Calamatas	10	1982
10. Olive Cooperative of Gargalianoi	25	1984
11. Eleourgia Messenias S.A	20	1986
12. Yefteas Andreas S.A.	365	1986

Note: 1. S.A (Society Anonymous) is equivalent to a PLC

Source: Fieldwork Interviews, Summer 1988.

Not surprisingly it turns out that most of the sample packers descend from families of olive merchants. Some of these families started in the olive business in the early 20th century; they used to buy olive-oil and olives in the weekly market held every Saturday in Calamata.(5) The merchants would make their profit from the difference

between the price they paid to the olive growers and the price they sold to consumers in the non-olive growing areas of the country. Exports were undertaken only by the richest of the merchants who could afford the greater risks. This is because in the pre-war period and even down to the early 1950's, payment was made to the merchant sometimes after the merchandise had been received. Since export involved shipment of the olive-oil abroad long before payment could be claimed mutual trust between the trading parties was crucial. Nevertheless, the risk for the olive merchant was considerable as in many cases he relied solely on the importers' honesty.(6)

The firm Kefalea Bros, in the sample, is the largest of Messenia province and in recent years has been one of the ten largest in the olive industry. The owner is the president of ESVITEL, one of the two trade organisations which represent the packers' interests.(7) The other trade organisation, is SEVITEL, whose members are the multinational subsidiaries and half of the industry's packers. ESVITEL was created in 1986 after an argument over management issues between the members of SEVITEL, whose current president is L. Melas, the managing director of Elais. These organisations act as sources of information to the packers about governmental and EEC decisions concerning the olive-oil market. SEVITEL publishes a monthly information bulletin which is sent to its members' second stage processing units. For the services provided to the packers by their trade organisations there is a contribution 1.4% of the Consumption Aid per kilogram of olive-oil received. The level of this contribution is set by the EEC itself and in October 1986 it was reduced from 1.9% to

1.4% at which it remains until today.(8) From 1986 G. Kefaleas has been the president of ESVITEL and the two organisations coexist and often get involved into arguments over market issues.(9)

The Kefalea business was first established in 1924 by the grandfather of today's owners and was engaged in processing and distributing locally produced figs. In the 1930's, sixty percent of total fig exports from Greece went through this firm. In the 1940's they entered the olive trade. Between 1956-1976 the owner was one Mr. P. Kefaleas, but since 1976 his three sons have taken over as equal partners. Access to the unpublished balance sheets of the business for the year 30/6/1985, 30/6/1986 and 30/6/1987, general information from the business itself and data from the Institute of Trade and Commerce of Messenia permits us to make the following observations.

Table 7.2: Sales Value of "Kefalea Bros"

(In million dr)

1983	1984	1985	1986	1987	
1,208.1	1,956	1,522.7	1,839	2,434.1	(Current Prices)
276.3	377.7	246.5	242.0	275.2	(Real prices)[1]

Notes: 1. Current Prices were deflated by the Retail Price Index

Source: Information obtained from the business itself, Summer 1988.

The quantities produced as well as the production of the unit are presented in Table 7.3. We may observe that the reduction in sales during 1985 was considerably recovered in the years 1986 and 1987 when

the sales value increased (in current prices) by 20.7% and 32.3% respectively. However if one looks at the sales value in real prices, (see Table 7.2), it appears that after the 1985 fall they recovered in 1987 but, even then, the level was lower than that of 1983. As shown in Table 7.3 production during 1981-1987 has fluctuated considerably. In particular, for the three years 1985-1987, the trend of sales of the firm's main export products moved as follows. First let me take olive-oil. This contributed 68% of turnover during 1985-1987 while its contribution in the previous four year period, 1981-1984, was 75%. It must be pointed out that "Kefalea Bros" is mainly an exporter. Its sales and production structure therefore fluctuates, depending on conditions in the export markets. On the other hand such sales fluctuations reflect the nature of the firm as a relatively large commercial enterprise which has the ability to diversify depending on market conditions. In 1986, the volume of the firms' sales fell by 11% due to the introduction of certain national measures which limited exports of unpackaged olive-oil. When in 1987 these measures were partially lifted, the volume of olive-oil sales increased substantially.(10) The lowest level of olive-oil sales was attained in 1985, but since then the product has been the main contributor to the increase in the firms' turnover - particularly so in 1987.

At this point it seems to me that I should report a major irregularity in the sales figures of olive-oil as presented in the firms' records and shown in Table 7.3. The sales figures for olive-oil shown in the firms' official records deviate from the export sales figures kept by the Custom House of Messenia. More specifically, in

1980 the firm admitted sales of 1,102 tonnes of olive-oil valued at 125.5 million dr.(11) The Customs House figures show exports by Kefalea Bros. of 1,685 tonnes of olive-oil. This suggests that in 1980, 66.4 million dr. was not included i.e. accounted for in the company's turnover figures. In 1986, the firm's records showed a sales volume of 5,297 tonnes of olive oil. The Custom's House records showed that in 1986 11,000 tonnes of olive-oil were exported by Kefalea Bros. This means that 1,794 million dr was not included in the firm's turnover in 1986. These findings which puzzled me at the time, obviously meant tax evasion on the grand scale. Upon further probing some part of the increased amount of exports shown by the Custom House records can be explained. That is, Kefalea Bros., being one of the largest exporters of olive-oil in the country, has established strong commercial contacts with export markets. Smaller companies therefore find it advantageous to export through them and use the name in return for a commission of 2-3% of the sales value. The amounts so received are stated - according to the firm - in the Profit and Loss accounts under the item "Various Receipts" (see Table. 7.4). Nevertheless, it is my belief that a substantial part of the increased amount of exports shown by the Customs House records is made by the company itself. I have deduced this from the following pointers. First, since over 80% of the quantity of olive-oil exported in 1986 was unpackaged, the company had nothing to gain by declaring it (as Consumption Aid is only received on the packaged produce). On the contrary, it would greatly serve its interests if it did not include it in its annual turnover (for tax purposes). Secondly, the Agricultural Institute of Messenia informed me that 5,297 tonnes of olive-oil as stated in the company's

records for 1986 was indeed the minimum handled that year by Kefalea Bros. This is because nearly 5,000 tonnes was purchased by the firm from the domestic production of Messenia province alone. Then, depending upon its needs, another 40 or 50% of the firm's sales are usually supplied from other olive producing areas of the country.(12) Thirdly, in the year of my visit, 1988, the company was subjected to tax inspection. After checking through the firm's accounts the inspectorate must have detected serious tax evasion practices and Kefalea Bros. was fined 12 million dr.(13)

As far as olives are concerned this product's contribution to the company's turnover rose from 3.5% in 1983-1984 to 9.3% in 1986-1987. Quantities as well as the sales value of the olives have been following an upward trend - especially during the last two years, 1986-1987, as shown in Table 7.3.

Thirdly let me consider dried figs. This commodity follows olive-oil in importance in the company's production. During 1984 and 1985 their sales volume and contribution to the turnover was 25% and 27.2% respectively. During 1986 though its sales value remained constant (in current 1986 prices) while its contribution to the firm's turnover was reduced to 20.7%. As has already been established the company started out in 1924 as a fig processor and distributor. It was only during the Second World War, when trade in olive-oil assumed great value, that the firm diversified into the olive industry. Furthermore, when it was re-organised in 1975 figs remained its main output. Olive-oil became dominant in the firm's production structure only after 1980 and in

particular after 1981 - which is the year of Greece's accession into the EEC and also the year that Consumption Aid started to be paid for this product to packers.

Table 7.4 presents the Profit and Loss account of the company during 1/7/1984 - 30/6/1987. We can see that cost of sales throughout the period under investigation exceeded the company's turnover.(14) This suggests that gross profit cannot cover the operating expenses of the firm. The negative gross profit (loss) of the firm and its operating expenses are essentially covered by the Consumption Aid paid on its sales of packaged olive-oil and the positive Monetary Compensation Amounts (MCA's) which the company received on its exports.(15) Pre-tax profits of Kefalea Bros. were 10.2 million dr, 19.9 million dr and 39.3 million dr for 1985, 1986 and 1987 respectively. Even though they are positive and increasing, they are mostly created by the item "various receipts" of the company. These chiefly consist of property incomes from the firm's real estate holdings and the commission from the company's role as a mediator between smaller domestic firms and export markets.

A planned investment programme for new buildings and modernisation started in 1985 based on the development Law 1962/1985. With the F.E.K 137/26.7.1985 an amount of 185 million dr was approved as a loan and 28% of it or 51.8 million dr. was given as a subsidy. The company itself contributed towards the investment cost to the tune of 37.5% or 69 million dr. The rest, about 64 million dr. was obtained as a middle term loan from the Commercial Bank of Greece. The investment project

was completed by October 1988. Table 7.5 presents some accounting ratios derived from the company's annual financial statements.

Table 7.5: Kefalea Bros. Accounting Ratios

	1985	1986	1987
Liquidity Ratio[1]	1.05	0.99	1.01
Gearing Ratio[2]	90.7%	97%	94%
Performance Ratio			
a) Profit Margin[3]	2.6%	2.6%	2.1%
b) Own Capital[4] Return	31%	69%	69%

Notes:
1. Current Assets/Current Liabilities
2. Borrowings/Total Assets
3. Net Pre-Tax Profit & Interest/Turnover
4. Net Pre-Tax Profit/Own Capital

Source: Table 7.4 and Unpublished Company Balance Sheets, 1985, 1986, 1987.

We observe that the liquidity ratio moved a little above the unit for 1985 and 1987 while for 1986 was just below it. This, combined with a very high gearing ratio throughout the period under examination, gives a rather worrying picture of the company's financial position. In addition the performance ratios as measured by own capital return and the profit margin, seem uncomfortably low. It therefore appears, by looking at the financial statements of one of the largest packing units in the sector - and certainly the largest of Messenia Province- that its operation is almost solely based on EEC subsidies (the Consumption Aid and the positive Compensation Amounts on exports). In

particular, 64-68% of the subsidies cover the losses (negative gross profits) of the firm during 1985-1987 (see Table 7.4), and the remainder is used to finance part of the operating expenses of the company. This heavy dependence upon EEC subsidies obviously casts a deep shadow over the prospect of increasing profitability in the future. The imposition of the negative Compensation Amounts on the other hand, has had a deleterious effect upon the company's financial accounts for as long as it lasted, 1987-1989.

Eleourgia Messenias is another important firm in the second stage processing and packing of the province. It was first established in 1975 under the name, "Anthanasiou Panagulea Sons", and dealt in wholesaling and distribution of olive-oil. In 1982 it started exporting for the first time to Italy and France. In that year there was a surplus of about 70,000 tonnes of olive-oil in Greece and the markets of Italy and France imported some 300,000 tonnes. Because of these favourable conditions in 1982 the firm packaged and exported 350 tonnes of olive-oil in tin plated containers of 16 kgr. each. In 1983, the company's total sales were 400 tonnes of olive-oil and in 1984 2,500 tonnes of olive-oil. In 1986, the company was re-constituted by the name it is known today. In 1985, 2,000 tonnes of olive-oil were sold and in 1986 production reached 3,500 tonnes. It appears that by 1986 the firm's output followed an upward trend with impressive increases in sales volume recorded for 1984 and 1986. In 1987 and 1988, production fell drastically because of the negative Compensation amounts imposed by the EEC on exports. After January 1988, when seed-oils production and distribution were allowed in the olive producing

areas of Greece, Eleourgia Messenias imports and distributes oil seed-oils in Messenia. The bulk of its imports comes from Italy. Most of the company's exports of olive-oil are directed to Italy and the U.S.A. The main customers of the firm include: Fotis & Son Imports (California, U.S.A); P. Passo & Figl. I Spa (Italy); and Oleifici Mediteranei Spa (Genova, Italy).(16) Table 7.6 shows the export value and total sales value of the firm during 1985-5/1989 in current prices.

Table 7.6: **Export and Total Sales Value of Eleourgia Messenias during 1985-5/1989. (In million dr, current prices)**

	1985	1986	1987	1988	5/1989
Export Value	241.8	790.2	336.9	144.6	1,057.4
Total Sales Value	-	790.2	761	444	1,345.9

Source: **Confidential Company Records**

We can observe that there has been a drastic reduction in the company's total sales value in 1988. In fact it was reduced by 67% in the domestic market and by 33% in the export market. This fall was due to the negative Monetary Compensation Amounts on exports as well as low price levels and import demand from Italy. During the first five months of 1989 though, total sales value made a huge recovery and reached three times their 1988 level. Sales value in the export markets were 1,057.4 million dr, while in the domestic market sales value was 288 million dr by 31/5/1989. For the whole of 1989, the company expected sales to increase even further provided that export demand remained "high", and despite the retainment of the negative

Monetary Compensation Amounts on exports which were 43 dr/kgr on the unpackaged olive-oil and 31 dr/kgr on the packaged olive-oil.(17)

Table 7.7 presents the company's Profit and Loss accounts during 1986-1988. We observe that in 1987 the cost of sales exceeded turnover by about 9%. This led to a negative gross profit (loss) which, after the addition of the company's operating expenses, amounted to 23.4% of the firm's turnover. The huge subsidy received through Consumption Aid and the positive Compensation Amounts on exports (167,871 th.dr or 22% of the turnover), was not sufficient to cover the deficit and the firm ended up with losses (negative net pre-tax profit). After two years of negative net pre-tax profits, 1986 and 1987, the firm presented a small but positive net pre-tax profit in 1988 (2,453 th.dr or 0.6% of the turnover). Furthermore, the reduction in the cost of sales, in 1988, if it were not taken up by sales expenses would contribute a considerable increase in the company's profits. For 1989, the firm's owner and the bank which finances it, expected pre-tax profits to rise.(18) To this effect an encouraging sign is the increase in the company's own capital as a proportion of the total between 1986-1989. Nevertheless, it still remains low relative to the total capital engaged in the firm's activities (about 5% in 1988).

Table 7.8 presents some accounting ratios derived from the firm's annual financial statements. It appears that the liquidity ratio has fluctuated considerably during 1986-1988. It ended up quite low in 1988, just below the unit, which shows that the company can barely meet its current liabilities.

Table 7.8: Eleourgia Messenias Accounting Ratios

		1986	1987	1988
Liquidity Ratio		0.95	1.42	0.99
Gearing Ratio		104%	70%	95%
Performance Ratio				
a)	Profit Margin	0	7.1%	7.6%
b)	Own Capital Return	Negative	Negative	8%

Source: Table 7.7 and Unpublished Company Balance Sheets, 1986, 1987, 1988.

Furthermore, we observe that the gearing ratio shows an increase in 1988 (compared with 1987), and this is because the rise in the firm's total assets account in 1988 was based on borrowed capital. These borrowings mainly concerned short-term loans. The profit margin and own capital return as measures of the firm's performance ratio showed some improvement in 1988. Nevertheless, the financial position of Eleourgia Messenias as presented by its accounting ratios is unfavourable. Moreover, it is once more clearly shown that the net pre-tax profit of this company in 1988 is created by the EEC subsidies, while in previous years net pre-tax profits were negative. It seems to me that the Profit and Loss account of this firm which is typical of many firms operating in this sector, could have been caused by a number of different reasons. First, after extensive discussions with Mr Elias Panaguleas it is not entirely clear that the firm operates as a profit

maximizing organisation. Mr Panaguleas said he was willing to take many risks (by incurring high borrowing) and was prepared to accept a low return on investment in order to secure the future of the enterprise.(19) An additional constraint to those firms operating in this sector, including Eleourgia Messenias, is the instability which characterises market conditions. In particular, the olive is a crop whose fruit bearing capacity is influenced by a number of unpredictable as well as inherent factors already discussed in Chapter One. This suggests that a firm engaged in this sector cannot easily plan far ahead. A third factor was that information about stocks in both the world and domestic markets is essential for intelligent decision making. But this was costly and time-consuming.

In addition to the reasons given by the firm itself I had extensive talks with the Ionian Bank's accountant responsible for the finance of this company Mr P. Katsikeas. The outcome was that it became easier to understand the actual position when due regard was made for the reliability of the figures presented in the Profit and Loss accounts.(20) First the turnover could be deflated. For instance, if transactions took place through payments in cash and not through the bank - as is quite often the case with these firms, certain receipts are not declared. Then, under the bland term "expenses on sales" and "financial expenditure" sums of money may be hidden which do not appear in the net pre-tax profits of the company. Although these irregularities would be revealed under close scrutiny this is something that the Bank does not undertake. It "prefers" to allow the company a certain degree of flexibility as long as it keeps up with repayments on

its loans. The Bank and the owner of Eleourgia Messenias expected the firm to achieve 1 billion dr. turnover in 1989.

Another well known firm in the olive industry of Messenia province in Adreas Yefteas S.A. It was re-constituted in 1986 as a continuation of the company Adreas Yefteas & Son first established in 1975. Its main activities include packaging, exporting and wholesaling of olive-oil, olives and dried figs. It is mainly an export-oriented company. The company's sales value during 1984-1988 in the domestic market as well as the sales value of its exports, are presented in Table 7.9. The main destinations were Italy, U.S.A. and West Europe.(21) We observe that after a substantial increase in 1986 the sales value of the company was drastically reduced in 1987 due mainly to the low level of olive-oil export demand. This came about because of an EEC surplus which meant reduced import demand from Italy and hence reduced market prices. However, in 1987 the company undertook a modernisation project which was partly financed by the Ionian Bank of Greece, and partly subsidised by the EEC. The cost had reached 131.9 million dr by 30/11/1988. The loan approved by the Ionian Bank was 117.930 thousand dr. The total revised cost of the modernisation plans according to the P.3476/11.8.1988 report of the Ionian Bank and investors information, was estimated at 343.6 million dr.(22)

The outline programme was as follows:

Buildings:	182	million dr.
Special Buildings:	15	" "
Other Equipment:	12	" "
Surrounding Projects:	9	" "
Mechanical Equipment:	95.5	" "
Relocation of Machinery:	10.6	" "
Transport Equipment and Special Vans:	11.5	" "
Other:	8	" "
Total	343.590.000 dr	

In view of the considerable expansion and modernisation plans undertaken by Andreas Yefteas S.A, it seems that the firm expects to increase its production and sales to domestic as well as export markets. On the other hand, the rise in its expenditure will place an additional burden on an already weak capital structure based mainly on EEC subsidies. More specifically, Table 7.10 presents the company's Profit and Loss accounts, between 1/1/1985 - 30/6/1988. A similar picture to the one of the previous firms emerges. Negative gross profits and operating expenses are just covered by Consumption Aid and positive Monerary Compensatory Amounts on exports leaving very small net pre-tax profits (only 0.4% of the turnover in 1985, and 0.6% of the turnover in 1986). During the period 1/1/1987 - 30/6/1988 the company suffered losses due to the reduction in its turnover and to the increase in its operational costs as a percentage of its sales,

compared with that of 1986 (see Table 7.10). The firm's own capital contribution is increasing but it is still proportionately low with respect to the total capital engaged in it. In particular, in 1985 the firm's own capital contribution to the total was negative (-0.7%); in 1986 it was 16.3 thousand dr or 4.7% of the total and in 1988 it was 25.8 thousand dr. or 8.6% of the total. Out of the amount shown in 1988 14.2 thousand dr or 55% was the State subsidy towards the cost of the investment plans concerning the firm's modernisation. Table 7.11 presents some accounting ratios derived from the firm's balance sheets during 1985-1988.

Table 7.11: Andreas Yefteas S.A Accounting Ratios between 1985/1988

		1/1-31/12/85	1/1-31/1286	1/1/87-30/6/88
Liquidity Ratio		0.93	0.96	0.83
Gearing Ratio		100.7%	95.5%	92%
Performance Ratio				
a)	Profit Margin	4.2%	4.6%	3.2%
b)	Own Capital Return	Not Defined	28%	Negative

Source: Table 7.10 and Unpublished Company Balance Sheets, 1985, 1986, 1988.

We may observe that during the eighteen months period extending from 1/1/1987 to 30/6/1988, all the accounting ratios of the company have deteriorated considerably compared with 1986. Even though the firm is one of the largest packers and exporters in the province of

Messenia, its sales have been reduced during this last period because of the adverse conditions which dominated the olive market in the EEC.(23) It therefore appears, that the combination of factors such as the large investment cost undertaken by the company, its weak capital structure and instability in the export markets, might prove critical for its survival.

Plemmenou Bros., another firm which operates in the province, engages in packaging, wholesaling and exporting of olive-oil. It was re-constituted in 1952 as a continuation of the family business first established in 1912.(24) Total sales value according to unpublished company records for 1985/86 - 1987/88 and export values are presented in Table 7.12. We may observe that the firm's domestic sales value forms only a small percentage of the total. Most of its turnover is generated from overseas sales.

Table 7.12: **Total and Export Sales Value of Plemmenou Bros, during 1985/86 1987/88**

(In current prices, million dr.)

	1985/1986	1986/1987	1987/1988
Total Sales Value	453.0	485.5	192.6
Export Sales Value	340.6	411.4	113.3

Source: **Unpublished Company Records, 1985-1988.**

The firm exports chiefly to Italy, England and Cyprus. As shown in Table 7.12, after a small increase during 1/7/1986 - 30/6/1987, sales

value dropped substantially during 1/7/1987 - 30/6/1988, mainly due to the imposition of the negative Monetary Compensation Amounts (MCAs) on exports, surplus in the EEC countries, and the consequent low prices and import demand from Italy. However, for 1989, more favourable sales prospects were forecast as the negative MCAs have been further reduced since November 1989 and the demand from Italy has increased.(25) Table 7.13 presents the firm's Profit and Loss accounts between 1/7/1985-30/6/1988. It is worth noting that the Consumption Aid and export subsidies on olive-oil covers the firm's negative gross profits and its operating expenses leaving a small net pre-tax profit for 1986 and 1987. We can also observe that the amount of subsidy has been steadily decreasing over 1986-1988, and this has resulted in a negative net pre-tax profit in 1988. The reason for this is that total sales have been reduced, and also the amount of packaged olive-oil sold to export markets suffered a decrease in favour of unpackaged. However, according to EEC regulations, unpackaged olive-oil does not receive any Consumption Aid hence the reduction in subsidies paid to the company. The firm's own capital contribution to the total is the highest among all the firms included in the sample. More specifically, in 1986 the company's own capital was 17.7 thousand dr. or 8.3% of the total. In 1987 thought it increased to 23.2 thousand dr. or 38.3% of the total and in 1988 it amounted to 24 thousand dr. or 38.7% of the total. This suggests that the company's capital structure is more encouraging than the others in terms of being in a safer financial position. Table 7.14 shows some accounting ratios of Plemmenou Bros., between 1986-1988.

Table 7.14: Plemmenou Bros. Accounting Ratios between 1986-1988

	1986	1987	1988
Liquidity Ratio	1.05	1.27	1.87
Gearing Ratio	92.3%	72.3%	72%
Performance Ratio			
a) Profit Margin	3.3%	3.6%	0.5%
b) Own Capital Return	31.7%	14%	Negative

Source: Table 7.13 and Unpublished Company Balance Sheets, 1986, 1987, 1988.

We may observe that the liquidity ratio goes well above the unit which means that the firm can comfortably meet its current liabilities. Part of the reason for the improvement in this ratio was that short term loans were substituted by long-term loans acquired from the Commercial Bank of Greece.(26) We can also observe a distinct improvement in the gearing ratio which is due to the rise in the firm's own capital contribution to the total. The performance ratio however, deteriorated in 1988 because of the adverse conditions in the export markets for olive-oil. Overall, we can conclude that the net pre-tax profits of the firm are very low compared to the level of sales. Further the dependence of the company upon EEC subsidies such as Consumption Aid and positive Compensation Amounts on exports, is very clear.

The next company in the sample in Vraka Bros, established in 1928 and mainly involved in olive processing and packaging. They chiefly export to the U.S.A., Canada and Australia.(27) These countries have large Greek immigrant communities and this firm established contacts with wholesalers and retailers amongst them from the 1950's. Their product has acquired a "quality name" in these markets so they can afford to be more expensive than their competitors. Over the decade 1960-1970 production did not exceed 250 tonnes of olives and 150 tonnes of olive-oil. In the late 1970's and 1980's production was restricted to olives and was about 200 tonnes a year.(28) During my visit to this firm in the summer of 1988, it became apparent that the building where the processing of olives takes place was in disrepair. It consisted of two ground floor rooms not larger than $50m^2$ in total, where all the processing, packaging and administrative work was done. It was difficult to believe that this firm had a reputation among the olive traders of the province as one of the most profitable smaller enterprises. However, it was possible to identify two reasons for this state of affairs. One was that the owners were coming close to retirement age and after the earthquake in Calamata in 1986, they did not consider any repairs worthwhile since they intended to leave the sector in the near future. The other reason concerns tax evasion. No tax-inspector would surely believe that in such a run-down building a profitable enterprise could be run. In this respect Vraka Bros's. behaviour resembles that of older olive wholesalers who operated in the province in the pre and post Second World War period.(29)

The next company in the sample is Stathis Malamas. This is a small family owned enterprise. The proprietor started as an olive wholesaler in 1953. In 1973 he entered olive processing and olive-oil filtering and blending, but it was only in 1986/87 that the firm started to produce packaged olive-oil according to EEC regulations and so receive the Consumption Aid. Annual average production ranges between 80-90 tonnes of olive-oil, and 10-15 tonnes of olives. This enterprise currently operates quite successfully given that its net pre-tax profit in 1987 was 3 million dr. The firm relies on domestic sales, it mainly supplies retailers of north Greece and consumer cooperatives.(30)

Another relatively small company is Eleourgia Calamatas, established in 1982 with annual olive-oil production not exceeding 180 tonnes. All production is packaged according to EEC regulations so that Consumption Aid can be claimed. About 150 tonnes of olive-oil are packaged annually in 5 lt containers, the rest in containers of 1 lt. In 1988 the firm exported 2.5 tonnes of olive-oil to Sweden. The rest of its production was sold to the urban centres of the country.(31) It appears, given the large building and the modern equipment used by the firm for olive-oil processing, that there is an intention to expand production further provided that favourable olive market conditions will permit it.

The last in the sample of private packers dealing with olive-oil and olives is Kalogeropoulos & Sons. This is one of the largest exporters in the province and has been in the export trade for a very

long time - since 1890 in fact. But it is only after 1948 that it became involved in olive-oil wholesaling. It was the first company which exported branded olive-oil from the province (in 1949). The brand was called Diana. In 1980 the firm's olive-oil sales reached 500 tonnes. In 1987/88 it sold 3,000 tonnes of unpackaged olive-oil. The main importer countries that the company deals with are the U.S.A, Canada and Australia.(32) It therefore appears that Kalogeropoulos & Sons is a firm whose sales have steadily risen through time despite adverse market conditions. This suggests that it will be able to retain its position in the olive sector of the province as one of the most important exporting units.

The next company in the sample is the olive residue processing plant Linardakis also known as Georgiki Viomihania S.A. It was established in 1890. Since 1910 it processes olive residue in order to obtain olive residue oil. It also produces wine, surgical spirits and recently, (after January 1988), oil seed-oils.(33) Well informed people in the province, claim that Linardakis produces oil seed-oils on behalf of Italian firms and there is some sort of subcontracting agreement among them.(34) However, when I interviewed Mr K. Linardakis, he did not confirm this directly (which is not really surprising in view of the sensitivity of the issue). Seventy percent of the firm's annual production is made up of olive residue oil. The average production is 2,600 tonnes per annum.In 1987, the company built a new refinery at a cost estimated at 300 million dr. Forty-three percent of this is subsidised by the State and the E.A.G.G.F. Since 1987 the firm produces olive residue oil and sells it packaged and

unpackaged (i.e. in container sizes which do not follow EEC regulations). Most of its production is exported to Italy but in 1988 80% was sold in the domestic market. The reason was the negative Monetary Compensation Amounts (MCAs) on exports which were 87 dr/kgr on the exports of unpackaged olive residue oil, and 32 dr/kgr on the exports of packaged. This made exports unprofitable. The company's turnover in 1987 was 1 billion and 400 million dr. The total sales value of olive residue oil was 459 million dr. It therefore appears that its contribution to the firm's turnover was only 33% for 1987. However, before the imposition of the negative MCAs the contribution of olive residue oil sales value to the firm's total sales value was over 80%. Nevertheless, Georgiki Viomihania is the largest olive residue processing unit in the province and the whole administrative area of Peloponnesos.(35)

The other olive residue processing unit in the sample, Koutelas, is much smaller and produces on average only some 500 tonnes of olive residue oil annually. It was established in 1976 and recently due to the negative MCAs went through a difficult period where it was unable to pay any suppliers or meet any interest payments due to the Bank.(36) Even though during the 1989 period the market for olive residue oil was more favourable than the previous one, Koutela's future seems doubtful - at least according to the Commercial Bank's report, Calamata Branch. This is because the unit is totally dependent on the export market. With the imposition of the negative MCAs on exports its weak financial structure was not able to survive even temporary pressure. This case

highlights the effect that volatile export markets can have on small units with high gearing ratios.

The first of the cooperatives included in the sample is the second-order Central Cooperative Union of Messenia, (C.C.U.M).[37] Its establishment in 1973 was fully financed by the State. It entered production in 1974/75 with 100 tonnes of olives and 500 tonnes of olive-oil. Until 1980/81 the C.C.U.M owned three oil-mills in the province of Messenia. It processed, packaged and distributed all the olive-oil produced by them. Since 1982 though, only one of the oil-mills is still in operation. In 1987/88 the C.C.U.M sold 3,500 tonnes of olive-oil, almost half of that amount (i.e. 1,500 tonnes) in the domestic market in containers of 5 lt and 1 lt. The rest was exported to Italy in an unpackaged form. Apart from olive-oil the C.C.U.M processes and distributes olives. In 1987/88 it sold 200 tonnes in containers of 1 lt or 540 grs. In 1986/87 it sold 3,878 tonnes of olive-oil, 1,355 in the domestic market and 2,653 was exported to Italy.[38] Even though the number of cooperative oil-mills in the province is about 40, only 15 of them are members of the C.C.U.M. This suggests that the majority of the cooperative mills are small independent enterprises which usually sell their output to the highest bidder - whether private packer or cooperative. In recent years the C.C.U.M changed its name to Union of Agricultural Cooperatives (U.A.C). Until 1981 the U.A.C seems to have made profits, but since 1983 this has been reversed. Two reasons for this were readily identified by the president of the U.A.C in 1988. The first was the unexpectedly high prices which the U.A.C paid to the supplier

cooperatives for olive-oil. The second reason was the additional cost incurred by the U.A.C because of the large amounts of olive-oil kept in oil-banks until a suitable buyer could be found. This happened as the export markets where the largest proportion of the U.A.C's sales is directed, are usually "covered" by sales from the private sector. As a result, for each day that the U.A.C maintains olive-oil in store, it suffers interest losses.(39) It therefore appears that in recent years the role of the U.A.C has been rather to support the cooperative movement of the province (i.e. the olive producers) by offering relatively high olive-oil prices to the local olive cooperatives plus 6% commission on top of the price to its member cooperatives. On the other hand, in the context of its social policy objectives, the U.A.C employees 130 people in its offices and the processing unit. Out of this number only six have had any experience in the olive industry, and their educational level is well below 'O' level equivalent standards. But the marketing of the produce is a difficult task given the competition from private packers. Nevertheless, the U.A.C does not employ any marketing manager who could study market trends and efficiently manage the sales in both the domestic and export markets. It was evident to me that poor internal organisation and low level managerial skills are major problems in the U.A.C. As a member of Eleourgiki, it buys and sells olive-oil to it and it is fully financed by the A.B.G, which bore the burden of the U.A.C's losses until 1989 when cooperative debts were settled. However, the U.A.C's relationship with Eleourgiki, even though it is one of its 57 members, does not always seem to offer many benefits to it.(40) For instance, in 1987 the U.A.C needed to buy 600 tonnes of olive-oil from Eleourgiki in

order to export to Italy. The price of olive-oil was then 340 dr/kgr but the U.A.C had to pay Eleourgiki 410 dr/kgr. This can be explained by the fact that Eleourgiki suffered large debts during that period so it could not afford to be lenient even towards its own members.

The other unit in the sample is the Olive Cooperative of Gargalianoi, a first-order olive cooperative. It is based in Trifilia County and processes about one-third of the county's 11,000 tonnes of annual olive-oil production. It represents the first - and so far only - attempt by the cooperative movement to create an agrobusiness organisation based upon cooperative principles in the county.(41) Its main functions include: pressing its members' olive production (it registers 870 olive growers as members); storage of olive-oil; branding; and marketing oil in the domestic market and abroad. It employees 25 people - 16 seasonal and 9 permanent workers but only one of them is a specialised accountant. The machinery of the cooperative includes an oil-mill with 4 Decanter units by "Alfa Laval" with an installed capacity 8,000 kgr of olives per hour; two oil banks by "Buttler" with a potential capacity 80 tonnes of olive-oil each, and four "Vitou" oil-banks with a potential capacity 23 tonnes each. The Decanters in the oil-mill were installed in 1983 according to the EEC regulation 355/1977. The investment cost was estimated to be approximately 45 million dr, of which 65% was subsidised. The remainder was approved as a loan from the Agricultural Bank of Greece at an interest rate of 13% per annum.(42) Table 7.15 shows the cooperative's olive-oil production before and after the installation of the new equipment i.e., over 1981-1986.

Table 7.15: Olive-Oil Production at the First Stage Processing at Gargalianoi

(in tonnes)

	1981	1982	1984	1985	1986
Olives Processed	1,972	2,979	5,634	4,830	6,156
Olive-Oil Produced					
Extra Virgin, 0-1o	328.6	496.5	1,600	1,790	2,230
Value[1] (In dr.)			308,800,000	345,470,000	430,390,000

Notes: 1. In current prices

Source: Cooperatives' Sales Records, 1988.

It appears that after 1984, olive-oil production rose dramatically. In particular, between 1984-1986, it nearly doubled. Furthermore compared with 1982 and 1981 we observe that there have been very substantial productivity improvements. For instance, in 1982 the extraction ratio was 6 kgr of olives for every kgr of olive-oil produced. In 1984, 1 kgr of olive-oil was produced from only 3.5 kgr of olives. In 1985 and 1986 the extraction ratio improved even further at 1:2.7.

In 1984 the cooperative installed facilities for second stage processing and packaging of the olive-oil which they produced. The investment cost was estimated at 59,984 thousand dr. Sixty seven percent of this was subsidised, with the remaining amount borrowed from the ABG at 15.5% interest per annum. The investment plan consisted of the following programme. There was one unit for filtering and

packaging of olive-oil in containers of 1/2, 1, 2 and 5 lt with a potential capacity of 2,500-3,000 lt/hour and at a total cost 32,688,000 dr. There were ten oil-banks with a potential capacity of 2,000 tonnes of olive-oil which cost 27,296,000 dr. With the completion of the investment plan, total expenditure had reached 70 million dr.(43) Table 7.16 presents production and sales of the cooperative at the second stage processing before and after the installation of the equipment.

Table 7.16: Production at the Second Stage Processing and Marketing, Garalianoi, 1981-1986

(in tonnes)

	1981	1982	1984	1985	1986
Sales of Olive-Oil Packaged	-	-	1,600	1,790	2,230
Sales Value[1] (In th.dr)	-	-	336,000,000	375,900	468,300
Sales of Unpackaged Olive-Oil	328.6	496.5	939	805	1026
Sales Value (In th.dr)	37,810	62,457	181,227	155,365	198,018
Sales of Olive Residue	791	1,263	2,254	1,932	2,415
Sales Value (In th.dr)	1,054	2,136	6,762	5,796	7,245

Notes: 1. In current prices

Source: Cooperative's Sales Records, 1988

In 1984, 141 tonnes of unpackaged olive-oil was sold to Italy. In 1986, 210 tonnes and in 1988, 92 tonnes of olive-oil was sold to Italy. Despite the increase in sales, and even though net pre-tax profits from the first-stage processing stood at 10 million dr and 11 million dr for 1987 and 1988 respectively, the overall net pre-tax profits of the enterprise (including second-stage processing) were negative in

1987 and 1988. That is because of the large pay offs the cooperative had to make to the ABG to service its loans. Any late payments carry the substantial surcharge of 24.5%. It therefore appears that although the establishment and modernisation of the cooperative has been an important step in the autonomous development of the county's olive industry - and taken without the involvement of any olive merchants or private sector packers, it has not been a noted success in terms of business organisation. But this verdict may be too harsh and premature since it has only been modernised four years ago and so it is rather soon to judge. Nevertheless the signs so far are not especially encouraging. The board of directors consists of seven members - all of them olive growers. The president cannot make any decision concerning marketing and sales without consulting all of them. The process of decision making is therefore exceedingly slow. Further none of the members have any formal managerial skills and nor do they possess much experience in formal business procedures.(44) All these factors contribute adversely to the cooperative's competitiveness in relation to the private sector in the province. To date it has not managed to establish firm contacts in the export markets, so they are forced to sell most of their annual production through the U.A.C or to the domestic market.

7.1.3 Technology Used and Buildings

As mentioned in Chapter Six most of the equipment used in the second stage processing olive-oil is currently imported.(45) The major elements are, filters made of carbon-steel and assembled with

polyproline plates with monoblock movable chassis suitable for "brightening up" the olive-oil. Various models are available and their performance ranges from 1,000 lt/hour, up to 5,000 lt/hour. Then there are the washers which can be either automatic or semi-automatic units, with continuous movement. They may be matched up to different shapes of containers, and the washing cycle can be adapted to different requirements. The containers, in the automatic unit are hooked by an automatic hooker and, one-by-one, are turned upside down in order to allow a washing needle to enter the container itself and so properly wash. After washing, the containers are turned again neck up and pushed to the discharging section. The actual washing fluid can be recovered and recycled. All parts touched by the fluids are built with stainless steel and teflon. Each automatic unit needs one operator and maximum production is 10,000 containers per hour. With the semi-automatic unit the containers have to be placed in by hand and taken out at the end of the process - again by hand. Maximum production per hour is 2,000 containers. The fillers are next. Their main components are

(a) a bench unit, completely covered in stainless steel;

(b) a "star" shaped bottle holder with an intermittent movement which drags the bottles from the loading section to the filling and sealing sections;

(c) a filling unit composed of 2 (up to 6), syringes, built with stainless steel, teflon and glass;

(d) a cap-supplying unit, formed by one or more vibrating cap holders also in stainless steel;

(e) a sealing unit with several heads, a flanging threader, flanging, screwer and presser.

The bottle loader and the discharger are built following customer's requirements and according to the kind of bottles, phials or containers that need to be filled. Depending on the model the maximum production per hour ranges from 6,000 to 8,000 bottles. This equipment is used by all the packing units which conform to EEC specifications.

Table 7.17 shows the equipment available to the sample firms, together with an indication of whether their modernisation plans include new buildings for the processing activities. Installation of this equipment is an important indicator of the level of modernisation in Messenia and also tells us something about the quality standard of the resulting processed and packaged olives, olive-oil and olive residue oil.

Table 7.17: Equipment and Buildings Used by 12 Second-Stage Processing Units in the Olive Industry of Messenia Province

	Number of Firms	%
Equipment in Use and Installed After 1983 - EEC Approved	9	75
Equipment in Use Installed After 1975 - EEC Approved	2	16.6
Equipment Installed before 1975 Inferior to EEC Standards	1	8
Modern Buildings, After 1980	5	41.6
Old Buildings, Prior to 1970	7	58

Source: Fieldwork Interviews, Summer 1988.

We may observe that in my sample of 12 firms (out of the 30 which operate in the province), 75% (including the two cooperatives), use modern equipment. This suggests that they have taken advantage of the 1262/1982 Development Law for technological modernisation of manufacturing units. As far as investment in buildings is concerned though, only 41.6% of the firms surveyed have invested in new buildings which shows plans for expanding production in view of the 1992 plans for unification of the European Market.(46) The units which have invested in new buildings are Kefalea Bros, Eleourgia Messenias S.A, Yefteas Andreas S.A, Linardakis and the Olive Cooperative of Gargalianoi. It therefore appears that the overwhelming majority of the firms in the sample (over 90%) use modern equipment for olive-oil processing and packaging. Seventy five percent have taken advantage of Law 1262/1982. This suggests that the quality of the produced packaged olive-oil has improved since 1983 - at least in Messenia.

7.2 Access to Markets

The road to expansion for the small producers is thought to be blocked by the controls which large firms exercise over products, markets, raw materials and credit. Certainly the total market share of the small firms shows no clear signs of growing. The principal reason for this constraint seems to be associated with the role of small firms in a process of economic growth characterised by a growing concentration of markets.(47) In highly concentrated oligopolistic markets small firms cannot go on increasing the volume of their business indefinitely and, in the long-run, despite registering some small temporary gains, they tend to lose market share.(48) In the domestic market for olive-oil, five firms including the two multinational subsidiaries and Eleourgiki currently account for over 78% of branded olive-oil production. The rest of the market is left to 153 small units who operate in niches throughout the country. Nevertheless, there seems to be some room for expansion since wholesaling outside EEC specifications is being gradually reduced and, as a result, the olive merchants (wholesalers) are driven out or limited to their traditional role as mediators between the farmers and the packers. This issue will be discussed further in Chapter Eight.

Although EEC specifications constitute barriers to entry into the second stage processing of olive-oil the cost burden for the installation of modern equipment and new buildings is partly borne by an EEC and national subsidy. So, in the absence of substantial barriers to entry, one would expect the correlation between

profitability and market concentration to be weak, an observation which lends some support to the contestable market hypothesis.(49) In particular, we have seen (Chapter Five) that Elais's and Minerva's profitability - which is always difficult to measure precisely - has increased since the early 1980s - but this was combined with the gradual diversification of those companies' production from olive-oil towards seed-oils.(50) On the other hand Eleourgiki, which administratively sets olive-oil input prices, made losses (revenues did not even cover production cost). So, concentration in the olive industry does not mean higher profits if one did not take into account the EEC subsidies paid to the packers. Also, this evolution of market structure towards greater concentration, was not driven by technological efficiency of the larger companies (in terms of producing cheaper and better olive-oil quality to the consumers).(51) It was rather their ability to create a desire for their products on national level through extensive marketing; this included heavy advertising and fancy packaging which gives the product a better appearance.

The dismal record of performance shown in the sample of both new entrants as well as older firms further supports this proposition.(52) It therefore appears that the main attraction for entry was the expected profits to be made from subsidies. But even then, as shown by the Profit and Loss accounts of the sample firms, the net pre-tax profits just exceeded their accounting costs. This suggests that these firms operated with prices set below their average costs (P<AC). After the EEC subsidy had been received though their price tended to be equated to their average cost (P=AC) which again approximates to the

predictions of contestable markets theory.[53] On the other hand, as we have already tried to point out, Profit and Loss accounts may well hide much data. It is possible to conceal a great deal about the operation of firms. As Schmalensee put it "...the main lesson which seems to emerge from recent developments in empirical research in industrial organisation is that the quality of the results obtained depends critically on the quality of the data employed. Economists unlike historians or anthropologists are formally trained only in the analysis of data sets, not in their construction... Thus progress in industrial organisation may depend critically on the extent to which the construction of informative data sets is supported by government agencies and other sources of research financing".[54] This general comment seems to be very apt for this particular sub-sector.

As far as the export markets are concerned, the smaller units not only compete with each other but also with Eleourgiki - while the two MNC subsidiaries are mainly concerned with the domestic market. The largest importer of Greek olive-oil is Italy, and certainly the vast majority of the firms in my sample depend on exports to that country.[55] But the Italian packers and wholesalers mainly require unpackaged olive-oil, which does not, of course, receive Consumption Aid through the EEC. The reason for this is that the Italians can then repackage the olive-oil and so obtain the Consumption Aid themselves. In an attempt to put an end to this practice which was very harmful to the olive industry of Greece, in 1987 the State did not permit any exports to Italy. The hope was that this would force the Italians to reconsider.[56] This action created surpluses and affected adversely

both the smaller firms and Eleourgiki, so the State had to lift the restriction after a few months.(57) Given the dependence of the small producers on the Italian market, they are directly affected by the action of Eleourgiki which is the largest exporter. For example, in 1988 Eleougiki sold 74,000 tonnes of olive-oil (which was kept in storage for many months), to the France Oil Company. But this action meant that exports of the small olive businesses were blocked for a period of up to 6 months as Italy was able to buy Greek olive-oil from France Oil as well as other buyers of Greek olive-oil.(58) It therefore appears that if Eleourgiki decides to exercise her monopolistic power in the export market, the smaller producers are bound to suffer.

Recently (in 1989) the State created a Department of Export Trade in the Ministry of Commerce in an attempt to start an organised campaign which would boost Greek exports abroad.(59) In this context small olive-oil packers could hope to better develop their export markets in West Europe and America.

7.3 The Financial Situation of the Small Firms

The cooperative sector is financed by the ABG alone. The private firms however, finance their transactions through the commercial banks which compete with each other for the packers' custom.(60) In Messenia one of the main banks financing the second stage processing and packing units is the Ionian Bank of Greece through its local branch. Until 1983 interest on short-term loans through commercial banks was 10.5%,

in 1984 it increased to 18.5% for all manufacturing units except the companies exporting who brought into the country foreign currency. These could borrow at 12.5%. In 1988 the rate of interest on firms' short term loans was raised again to 25%. The amount that each packer can be given as a loan rarely exceeds 150 million dr.(61) Usually the amount lent to an export unit of the olive industry includes input expenses, processing and packaging costs, and the charge for the product's shipment abroad. The terms of sale for the olive-oil and olives varies from firm to firm. Generally 50-100% of the sales value is paid by an irrevocable letter of credit. For some of the firms up to 50% is received after a period of two to three months.(62) The process of obtaining a loan from the bank is slow and awkward. New businessmen are not easily trusted and have to provide the bank with certain guarantees. The value of such guarantees determines the level of the loan that a firm can obtain.(63)

Because of the high interest rate charged, the Greek packers- especially the smaller ones - find themselves at a disadvantage having to compete with their counterparts in Europe. In particular, Italian interest rates currently do not exceed 6-7% which compares very unfavourably with the 25% rate that the Greek packers are charged even after allowing for differences in the rate of inflation. This affects the operating expenses of the second stage processing units by increasing their financial liabilities via the interest paid on the loan.(64) Because of this state of affairs, the units interested in export seek ways of financing their activities which will reduce the level of their costs. For example, they sell foreign currency to the

bank in return for a three to four months loan in Greek currency, that is in three months from the day of the loan the packer has to pay the bank in U.S dollars or any other agreed currency. So, in three months the packer hands over to the bank an amount of olive-oil exports equal to the value of what is outstanding. In this way the cost of borrowing funds in about 3% lower for the businessman which, for a large firm like Kefalea Bros, represents over 10-15 million dr. difference.(65) Another more difficult means is to obtain a loan from a foreign bank. But because of State restrictions on borrowing funds from abroad, once their application for a loan has been accepted by a foreign bank, some packers hire a foreign representative to deposit the amount at a Greek bank in his name. So the firm has to pay the interest on the European currency i.e. 8%, plus 7% for the drachma depreciation plus a further 3% for other expenses. In this way the firm can save up to 7% of the cost of borrowing.(66)

Since the early 1980s even though there has been an increase in the volume of funds and in the range of financial packages available to small firms in the context of the development Law Decree 1262/1982, there are still serious obstacles to financing.(67) Of course, the restrictions to borrowing funds from abroad will be gradually abolished in view of the creation of the single market in 1992, and then the Greek firms - at least the ones which are then financially strong- will be able to obtain loans at a much lower cost in order to finance their operational expenses.(68)

Conclusions

It has been shown that the financial weaknesses of the packers as evinced in the Profit and Loss accounts makes their operation and very existence dependent on EEC subsidies. In most cases sales costs exceed sales turnover and, if it were not for the Consumption Aid and the positive Monetary Compensation Amounts on exports, many of those companies would have to close down. In particular, it was shown that various EEC directives such as the negative Monetary Compensation Amounts (MCAs) on exports caused drastic cuts in the packers' sales abroad and endangered further their already uncertain financial position. This further supports the view that the EEC factor is critical for their survival.

In the second stage processing and packing of olive-oil there exists an eel-shaped oligopoly. The multinational subsidiaries and a few more larger packers on the one side compete with the cooperative sector (as represented by Eleourgiki) whose development and operations have been supported by the government and financed-until recently-through the ABG. The rest of the packing firms are small units who strive to survive in the highly competitive environment created at home and abroad. In the domestic markets small firms operate in the space left by their large competitors. In the export markets the conflict between the private and the cooperative sector intensifies. As technological modernisation of the second stage units was not followed by a State effort to promote Greek branded olive-oil sales in the markets of Europe and America, the packers remain dependent upon the

Italian import market. This will be further substantiated in Chapter Eight. Furthermore, it will be shown that the existence of these firms depends largely on increasing their volume of sales abroad since the domestic market has already started to erode as a result of the entry of oil seed-oils even in traditionally olive producing areas including Messenia. So the conditions in the external market and the cost of sales (especially the input price of olive-oil) in the domestic market appear to be the two decisive factors determining the future of the olive industry packers. Unless a nationally based campaign on marketing and promoting Greek branded sales abroad is undertaken soon, the smaller packers will not be able to withstand competition from the major European olive producing countries such as Spain and Italy after 1992. A possible alternative would be that the domestically produced olive-oil will be sent to be branded in Italy so that the few unofficial subcontracting agreements that already exist in some olive producing regions of the country, might become a common feature after the establishment of the single market.

References

1. This refers to a recent study on the Greek economy by a team of econonomists headed by Prof. A Aggelopoulos. This was undertaken upon the instruction of the temporary coalition administration of X. Zolotas, Nov. 1989 - April 1990. The results were known in March 1990 though they still remain unpublished as G. Houpis states in the Economist, 12-18 May 1990. p.6.

2. See C. Gerry, "Small Scale Manufacturing and Repairs in Dakar: a survey of market relations within the urban economy", in R. Bromley and C. Gerry (eds) (London, 1979) and Souza & Tokman, "The Informal Urban Sector in Latin America". International Labour Review, Vol. 114, No.3, 1976 and H. Schmitz, Accumulation and Employment in Small Scale Manufacturing: Case Studies from Brazil, (London, 1982).

3. See the Report of the Bolton Committee of Inquiry on Small Firms, 21 Sept. 1971. It ws presented to Parliament by the Secretary of State for Trade and Industry, Nov 1971 (London, 1972).

4. The selection of the sample was determined by the following criteria. Firstly in terms of size, the largest packers operating in the province were chosen as far as sales volume, turnover and employment are concerned. Also three of the small size packers were included in terms of sales volume (Eleourgia Calamatas, Vraka Bros. and Stathis Malamas). The two olive residue plants were chosen as they are the only ones operating in the province currently engaging in this function. Finally two cooperatives were included because they represent special cases, one (the olive Cooperative of Gargalianoi) is the very first attempt at vertical integration in the olive industry of the province. The other enterprise was chosen because, as a second - order cooperative, it could provide some insight into the links of the cooperative chain in the olive industry. Secondly the sample was chosen by function (i.e. olive-oil, olives and olive residue oil). Thirdly, the sample was chosen in terms of the owners' past experience in the olive industry. In particular I tried to include olive merchants who, in response to certain external incentives (connected with the EEC regime) decided to upgrade their function and enter processing and packing under EEC specifications. In these respects purposive sampling was undertaken, and I am grateful to Mr V Yannopoulos, Head of the Institute of Trade and Commerce of the province who gave me much advice on procedure. Even though the study is regionally based, given the position of at least one of them in the country's olive industry (Kefalea Bros. is among the ten largest packers) the experience of these firms, reflects trends affecting the whole olive industry.

5. Interviews with members of the sample firms conducted during the summer of 1988.

6. Trade in this period was very much a matter of "oral contracts" as the older businessmen whom I spoke to called them, and on mutual trust between mediators. The export trade was therefore risky and there were many cases of firms which went into liquidation because of the difficulties of such a manner of dealing.

7. Information obtained during the course of an interview with Mr G. Kefaleas during fieldwork visit, Summer 1988.

8. EEC Regulation No. 3193/1986, COM. According to article 11 paragraph 5 of the Regulation 136/66/EEC the contribution paid to trade organisations out of the consumption aid is 1.4%. It was 1.9% but since 14 October 1986 0.4% is retained by the EEC in order to finance an advertising campaign for olive-oil. See L133, Commission, 21/5/1986 p.8.

9. The two multinational subsidiaries and about half of the packers remained in SEVITEL. The other half led by Kefaleas Bros, established ESVITEL. One of the policy issues over which the two organisations came into disagreement was the free entry of oil seed-oils into the olive producing regions. ESVITEL supported the view that if this were allowed to happen the future of the olive industry would be endangered. Recently though Kefalea Bros. and other members of ESVITEL have started to trade in oil seed-oils themselves.

10. During the implementation of these measures there were a series of scandals perpetrated by the officials and which was repeatedly reported in the media. In particular, in order to be able to export unpackaged olive-oil each packer had to have a licence authorised by the Ministry of Trade and Commerce. According to the measures only a limited number of licenses were available (each license allowed the export of approx. 60 tonnes of olive-oil). The packers though managed to bribe officials and obtain as many licenses as they wanted.

11. The whole amount sold in 1980 by the firm refers to exports. Only in 1986 did Kefalea Bros, sell to urban retailers 295 tonnes of olive-oil valued at 83.8 million dr. (wholesale prices). Kefalea Bros. Confidential Records on Sales, 1988.

12. Cooperative and private mills from Lesbos, Crete and Zakenthos are among the main suppliers to Kefalea Bros. Since 1988, the firm has started to trade in oil seed-oils which it imports from Italy and

sells (wholesale) in the domestic market. The quantities though are still very small. Information obtained from Mr V. Yannopoulos, Head of the Institute of Trade and Commerce of Messenia.

13. The exact amount of the fine was disclosed to me by Mr C. Kefaleas but only in order to make a point against the heavy tax burden levied on his firm by the PASOC Administration. It was later, during discussions with Mr P Katsikeas, Head of the Export Units' Financing Department of the Ionian Bank, (Calamata Branch), that the fats about tax inspection of the firm became known.

14. The level of the negative gross profits ranged between 16-19% of the firm's turnover during the period under examination. This is truly astonishing for a company with a sales volume as large as Kefalea Bros.

15. Positive Monetary Compensation Amounts (MCAs) on exports were paid to Greek exports of olive-oil by the EEC until 1987 because of the difference between the "green rate" and the real exchange rate. Exports of olive-oil were lower in price as they were paid for in a currency which was higher in value than the real drachma. Also, the V.A.T. (about 6% of the sales value) is returned to the packers on exports while another 3% of the sales value is not taxable.

16. Information obtained in the course of interviews with E. Panagouleas and N. Eftaxopoulos, owner and managing director respectively, of the company Eleourgia Messenias, during fieldwork visit, Summer 1988.

17. The negative MCAs on exports were implemented by the EEC in order to stop speculation because of currency deviations between the green and current exchange rates. Speculation based on these differences, costs considerable amounts of the EAGGF. Their implementation also aimed to reduce the competitiveness of Greek oils (because of their low price) in the international market. Eleourgiki, No. 8, 1988.

18. Eleourgia Messenias is a relatively new company in its present form, and was established in 1986. According to the Ionian Bank, Calamata branch, which finances it, this is an important contributing factor to the poor initial performance of the unit. Within favorable market conditions, the firm was expected to turn in a healthy profit.

19. In order to obtain loans from the bank and finance the firm's operating expenses, the bank had secured by mortgage all of Mr. E. Panagoulea's personal property.

20. I am also indebted to Mr K. Sugden, Department of Business and Management, University of Salford, whose useful comments helped me to elaborate further on the reliability of the Profit and Loss accounts of the sample firms.

21. Information obtained during discussion with Mr. A. Yefteas at his offices in Calamata, Summer 1988.

22. In the confidential report of the Ionian Bank, Central branch in Athens, No. P.3476/11.8.1988 which became available to me in June 1989, it was suggested that the bank should not approve any further loans to this firm. This means that the modernisation plans will be endangered unless other sources can be quickly found.

23. I refer here to the low import demand from Italy and the negative MCAS on exports which affected sales of the export packing units during this period.

24. Information obtained through an interview with Mr Plemmeno during the fieldwork visit in the Summer of 1988.

25. Indeed in 1989 the company doubled its sales value and increased its net pre-tax profit by 2% with respect to its turnover. This shows how swiftly external market conditions can affect the performance of an export-oriented packing unit of the olive industry. Ionian Bank of Greece, Central branch report, June 1989.

26. In order for these long-term loans to be obtained the Commercial Bank (Calamata Branch) had secured-by mortgage all the personal property and assets of the firm's owners. This information was obtained from the Commercial Bank of Greece, Calamata Branch, Summer 1988.

27. Interview with Vraka Bros at their premises in Calamata, Summer 1988.

28. Table olives receive only a national subsidy and this is gradually going to be phased out by the end of 1990. Because Vraka Bros. have established a good name in a few distinctive export markets, produce only in order to satisfy that demand - and at a price well above their cost.

29. See Chapter Three for a discussion of the behaviour patterns of the older olive merchants in Messenia.

30. Interview with Stathis Malamas at his firm, in Calamata, Messenia Province, Summer 1988.

31. Interview with Mr. Pagakis, the owner of Eleourgia Calamatas at his premises located on the outskirts of the town, Summer 1988.

32. Information received in the course of discussion with Mrs E Kalogeropoulou, managing director and equal partner of the company. This firm has a good reputation (among the packers) in the province for its open dealing with customers. In the past it has repeatedly refused to sell to the Italians because the deals offered involved some "not straight forward" business practices. One of the reasons that the firm can behave this way is because of the "quality name" it has established in export markets (of the U.S.A, Canada and Australia) so it is not dependent on the Italian market like the majority of the other packers.

33. Interview with Mr C. Linardakis, owner of the firm, at his factory in Calamata, Summer 1988.

34. The new refinery which Linardakis built in Trifilia County was equipped and designed according to Italian specifications, and under the supervision of Italian chemists who were employed by Mr C Linardakis in order to see the whole project through. So, there seems little doubt about the close contacts that the firm sustains with Italy and its Italian counterparts. The information about subcontracting agreements was given to me by Eleourgia Messenias (N. Eftaxopoulos) and the Ionian Bank (P. Katsikeas), in Summer 1988.

35. Information received by the Institute of Industry and Commerce of Messenia Province, Summer 1988.

36. Interview with Mr Koutelas at his factory in Zevgolatio Messenias. During the course of the interview we were interrupted by an angry supplier (oil-miller) who demanded payment there and then. Also during my visit to several mills, there were many complaints about delayed payments by this firm.

37. Discussion with Mr. Drakos, the President of the C.C.U.M now called Union of Agricultural Cooperatives (U.A.C), 1988.

38. Confidential Sales Records of the U.A.C which became available to me during my visit to their processing unit in Thouria, outside Calamata, in August 1988.

39. It is not only the interest foregone on the sales value of olive-oil which is lost but also the fact that the quality of the product deteriorates the longer it is kept (in excess of 3-4 months) and this means a lower selling price.

40. This is because (and as already has been mentioned in Chapter Six) Eleourgiki had large quantities of unsold olive-oil which added to the huge burden of liabilities that the enterprise was faced with.

41. I visited the Olive Cooperative in the winter of 1988 and then again in Summer 1988. I had the opportunity of holding extensive discussions with the president and members of the unit, and was granted permission to visit the processing plant.

42. Cooperative's Confidential Records, Gargalianoi 1988.

43. ibid.,

44. This is now recognised by the cooperative members themselves and especially the president who feels very constrained because of the slow, ponderous and inflexible decision making process. Recently however (in 1989) the cooperative has employed - following a unanimous decision - a marketing manager in order to help expand sales. This is clearly a welcome development.

45. Information on the processing equipment used by the packers was obtained from the sample units which also provided me with a prospectus containing the exact mechanical specifications of the machinery. They are mostly of Italian or British manufacture and are imported through commercial representative firms based in Athens.

46. In the hope that free trade throughout the Community, together with an advertising campaign for the benefits of olive-oil consumption will mean an expansion of olive-oil demand from the European markets the packers prepare to meet it.

47. See P Aydalot, "The Role of Small and Medium sized Enterprises in Regional Development : Conclusions Drawn from Recent Surveys" in M. Giaoutzi, P Nukamp and D.J. Storey (eds) Small and Medium Size Enterprises and Regional Development (London, 1988).

48. See D. J. Storey, "The Problems Facing New Firms". Journal of Management Studies, 22(3), 327-45, 1985, and F. J. Bade, "The Economic Importance of Small and Medium Sized Firms in the Federal Republic of Germany" in: D. Keeble and E. Wever (eds), New Firms and Regional Development in Europe, (London, 1986) pp. 256-74.

49. See W. Baumol, J. Panzar and R. Willig, "On the Theory of Perfectly - Contestable Markets", in J. Stiglitz and F. Mathewson (eds) New Developments in the Analysis of Market Structure, (Cambridge, 1986) and J. Bain Barriers to New Competition, (Cambridge, 1956).

50. See Chapter Five.

51. For example, Harold Demsetz (1982) attributes informational and reputational advantages of early entrants as part of the costs of doing business and not barriers to ~~envy~~ entry. But Farrell (1986) argues that such factors can work decidedly against new entrants. See H. Demsetz "Industry Structure, Market Rivalry and Public Policy", Journal of Law and Economics, 27, 91-113, 1982, and J. Farrell, "Moral Hazard as an Entry Barrier" Rand Journal of Economics, 17, 440-9, 1986.

52. ibid,.

53. See W. Baumol, J. Panzar and R. Willig; Contestable Markets and the Theory of Industry Structure, (New York, 1982).

54. See R. Schmalensee, "The New Industrial Organisation and the Economic Analysis of Modern Markets" in W. Hildenbrand (eds) Advances in Economic Theory, 253-85, (Cambridge, 1982).

55. The dependency ratio of the sample firms on the Italian market as well as their marketing strategies will be discussed in Chapter Eight.

56. Apart from this prohibitive action the PASOC Administration sent senior officials from the Ministry of Trade and Commerce to discuss the matter with their Italian counterparts. The discussions were never in fact covered since the Greek representatives were literally ordered by representatives of the Italian trade organisation to turn back. This information was provided to me by Mr. V. Yannopoulos who was one of the Ministry's officials who visited Italy in 1987. Currently he heads the Institute of Trade and Commerce in Messenia.

57. Thousands of surplus tonnes and continuous protests by the packers' trade organisations ESVITEL and SEVITEL, made the State reverse its decision in 1987.

58. Usually Eleourgiki controls about 1/3 of the export market but there are cases when through its cooperative action collects large quantities of olive-oil in order to maintain high producer prices in the domestic market. Then it finds itself in a position where its action can considerably affect the exports of the small firms of the olive industry.

59. In the Autumn of 1989 this Department started to operate in the Ministry of Trade and Commerce in order to promote a national export strategy and organise Greek olive-oil exports.

60. They compete not so much on interest rates (which can of course depend on the individual case for upto 1-2% difference) but on fast services and the minimum period which the firms have to start to repay their loans.

61. This information was provided to me by Mr. P. Katsikeas of the Ionian Bank of Greece, and S. Vavaroutsos, of the Commercial Bank of Greece. They both pointed out that the amount can vary depending on the creditworthiness of the packer.

62. This is an important indicator showing how fast a firm's working capital is recycled and therefore whether or not a firm is in a reasonably safe position as far as meeting its current liabilities is concerned.

63. As already mentioned, most of the businessmen in my sample and certainly the larger packers have their personal property mortgaged to the bank.

64. As shown by the Profit and Loss accounts of the sample firms, financial expenditure constitutes the largest cost component of operational expenses.

65. This way of reducing the cost of borrowing funds is practiced by the largest packers such as Kefalea Bros, Kalogeropoulos & Sons and Plemmenou Bros.

66. This information was provided by Mr. N. Eftaxopoulos, managing director of Eleourgia Messenias and was confirmed by Mr. V. Yannopoulos and Mr P. Katsikeas with whom I held extensive discussions on this matter.

67. These include the general inflexibility of the Greek financial structure which makes it very difficult for a new firm to set up business if satisfactory guarantees are not provided to the banks. Furthermore, the bureaucratic delays act as impediments to small, innovative enterpreneurs.

68. See G. Zavvou, "The EEC policy on Banking in view of 1992" in Economicos Tahidromos, 11 January 1990.

Table 7.3: Production Structure, Sales and Sales Value of Kefalea Bros. 1980-1987.

(In tonnes and million dr.[1])

Products	1980-81 Quantity	Value	%[2]	1981-82 Quantity	Value	%	1982-83 Quantity	Value	%	1983-84 Quant	Value	%	1984-85 Quant	Value	%	1985-86 Quant	Value	%	1986-87 Quantity	Value	%
Olive-Oil	1,102	125.5	39	3,022	420.2	65	4,830	914.5	75.7	8037	1605.3	82	4245	1035.5	68	3791	1,175.5	64	5,297	1,659	68
Olives	211	17.5	5	191	17.7	2.7	584	65.3	5.5	587	68.5	3.5	594.5	75.4	5	1084	149.7	8.2	1,376.6	226.6	9.3
Dry-Figs	2,238	152.5	49	2,669	191.6	29.6	2,501	214	17.8	2730	234	12	3838	384.3	25	4813	503.1	27.2	4,007.5	503.4	20.7
Currants	138	12	3.5	70	6.3	1	143	13.1	1	99	8.4	0.5	153.7	14.3	1	54	5.3	0.3	262	34.5	1.5
Other	507	11	3.5	435	10.4	1.7	3.2	1.2	-	360.2	39.8	2	-	13.2	1	-	5.5	0.3	-	10.6	0.5
Total	4,196	324.5	100	-	646.2	100	-	1,202.1	100	-	1956	100	-	1522.7	100	-	1839.1	100	-	2,434.1	100
Change %	-	-33		-	+99		-	+87		-	+62		-	-22		-	+20.7		-	+32.3	

Notes: 1. In Current Prices
2. % of the total production of the firm

Source: Company's Confidential Records, Summer 1988

Table 7.4: Profit-Loss Account of Kefalea Bros.

(In thousands dr.)

	1/7/84-30/6/85	1/7/86-30/6/86	1/7/86-30/6/87
Total Sales Turnover	1,522,702	1,839,055	2,434,073
Minus: Cost of Sales	(1,776,799)	(2,187,688)	(2,864,751)
Remainder	(254,097)	(348,633)	(430,678)
Minus: Depreciation	(2,613)	(3,380)	(3,244)
Gross Profit	(251,484)	(352,013)	(433,922)
Consumption Aid and PMCAs	385,062	514,826	677,581
Minus: Administrative Expenses	20,398	24,713	53,143
Expenses on Sales	110,015	131,761	175,184
Financial Expenditure	40,082	42,053	24,426
Depreciation (furniture etc)	1,361	1,183	1,659
Other Expenses	3,826	2,943	1,714
Profit	(42,104)	(39,840)	(12,467)
Various Receipts	52,276	59,765	51,767
Pre-Tax Profit	10,172	19,925	39,330
Dividents	5,607	15,858	11,192

Notes: Figures in brackets indicate losses

Source: Company's Confidential Records, Summer 1988.

Table 7.7: **Profit-Loss Accounts of Eleourgia Messenias, during 1986-1988**

(In thousand dr.)

	1986	1987	1988
Total Sales Turnover	790,193	790,972	443,943
Cost of Sales	730,655	830,070	405,367
Remainder	59,538	(69,098)	38,576
Depreciation	0	(213)	(643)
Gross Profit	59,538	(69,311)	37,933
Administrative Expenses	6,113	13,989	13,958
Expenses on Sales	(112,733	17,851	41,188
Financial Expenditure	(	77,869	35,987
Depreciation (Furniture etc)	147	363	1,570
Other Expenses	2,736	515	0
Profit	(62,191)	(179,899)	(54,770)
Various Receipts (Consumption Aid and PMCAs)	44,077	167,871	57,223
Net Pre-Tax Profit	(18,114)	(12,028)	2,453
Dividends	0	0	0

Source: Company's Confidential Records, 1988

Table 7.9: Sales Value of Andreas Yefteas During 1984-1988

(in thousand dr.)

Year / Sales	1/1/84 31/12/84	1/1/85 31/12/85	1/1/86 31/12/86	1/1/87 31/12/87	1/1/87 30/6/87	1/1/88 30/6/88	1/1/87 30/6/88	1/7/87 30/11/87	1/7/88 30/11/88
Exports	525,350	351,438	728,048	456,117	83,787	147,974	604,091	67,207	57,076
Domestic	7,851	34,094	32,059	34,561	22,688	54,251	88,812	10,617	31,139
Total	533,201	385,532	760,107	490,678	106,475	202,225	692,903	77,824	99,215
Change	+61%	-18%	+97%	-35%	-49%	+90%	0	-	+58%

Source: Company's Confidential Records, 1988, 1989

Table 7.10: Profit and Loss Accounts of Andreas Yefteas S.A.
(in thousand dr)

	1/1/-31/12/85	1/1/-31/12/86	1/1/87-30/6/88
Sales Turnover	385,531	760,107	692,903
Minus: Cost of Sales	406,517	758,011	712,084
Remainder	(20,986)	2,096	(19,181)
Minus: Depreciation	2,018	2,203	4,501
Gross Profit	(23,004)	(107)	(23,682)
Consumption Aid and PMCAs	126,046	137,097	156,322
Minus: Administrative Expenses	5,918	9,298	27,884
Expenses on Sales	74,805	98,329	115,861
Financial Expenditure	20,231	36,722	63,764
Depreciation (furniture etc)	341	1,135	957
Other Expenses	395	293	-
Profit	1,352	(8,787)	(75,826)
Various Receipts	-	13,362	39,339
Pre-Tax Profit	1,352	4,575	(36,487)
Dividends	-	-	

Source: Company's Confidential Records, 1988

Table 7.13: Profit and Loss Accounts of Plemmenou Bros.
(In thousand dr.)

	1986	1987	1988
Total Sales Turnover	453,039	485,482	192,602
Minus: Cost of Sales	514,875	514,275	239,349
Remainder	(63,836)	(28,793)	(46,747)
Minus: Paying Offs	1,291	975	994
GROSS PROFIT	(63,127)	(29,768)	(47,741)
Consumption Aid and PMCAs	108,172	93,246	67,239
Minus: Administrative Expenses	10,429	14,391	7,588
Expenses on Sales	12,319	24,659	11,122
Financial Expenditure	13,206	17,874	2,756
Paying Offs (furniture etc)	85	300	120
Other Expenses	3,406	3,009	-
Profit	5,600	3,245	(2,088)
Various Receipts	-	-	650
Pre-Tax Profit	5,600	3,245	(1,438)
Dividends	5,600	2,595	-

Source: Company's Confidential Records, 1988

CHAPTER EIGHT

CHANNELS OF DISTRIBUTION AND MARKETING OF OLIVE OIL

CHAPTER EIGHT

CHANNELS OF DISTRIBUTION AND MARKETING OF OLIVE-OIL

Introduction

Changes in channels of distribution in the olive industry both reflect and in turn help promote change of internal structure over time. By the beginning of this century two basic channels had been established. One was from the producers to consumers via the retailing chain. This was commonly found in olive growing areas located close by urban centres. Producers would go to the town market - if they could afford the transport cost - and there retailers would buy up the olive-oil. The second more usual channel, involved the sale of olive-oil to wholesalers or merchants and so from them to retailers and consumers. From the late 1970's, however, with the rise of second stage processing, the normal channels of distribution goes from producers to middlemen who work on behalf of processors, then to the retailers and consumers in the domestic market; or to processors, retailers and consumers in the export markets. Such a channel yields a wider distribution of the product at reduced cost. Various considerations-sometimes conflicting - play an important role in the selection of distribution channel as modern marketing has begun to influence i.e stimulate, the demand for the product.

The most effective promotional method is through advertising and brand differentiation. The two MNCs subsidiaries now spend considerable sums on advertising campaigns through the media

(television, radio and the magazines). In recent years even Eleourgiki has also increased its expenditure on advertising. However, advertising campaigns undertaken by the private sector in the olive industry not only focus upon the promotion of olive-oil sales but also the promotion of seed-oils as well. Price has become another key element in the marketing of olive-oil and obviously influences demand. The full adoption of the Community's CAP has resulted in higher consumer prices of olive-oil and the free entrance of competing seed-oils; indeed each of the new Mediterranean member countries have been forced to dismantle any restrictive measures remaining. Demand has also been faltering in the Mediterranean countries and Greece seems to be in the most vulnerable position at present because she still has the highest per capita consumption and, until recently, had the most protectionist olive-oil regime.

In this Chapter, I hope to show that from the late 1970's and more specifically, with the rise of the second stage processing and packing of olive-oil, rapid change has taken place in the distribution channels and consumer expenditure patterns with respect to olive-oil. At the same time the promotion of seed-oils by domestic producers and through imports has resulted in a marked increase in consumption and a decreasing trend in the demand for olive-oil. The main reasons behind these developments are effective advertising and lower prices for seed-oils. On the other hand, it is argued that Greek exports of olive-oil improved considerably since accession into the European Community, even though in 1987 and 1988 they suffered a set back because of the implementation of the negative MCAs. However, during this period,

Greece was further subordinated to the Italian market without being able to influence Italy's dominance in the Western European markets.

In Section One the domestic marketing arrangements for olive-oil are discussed. It is argued that the entry of the packers into distribution has been occasioned by two forces: the weight of increasing productive volume, and the desire to exert control over the market. Consumer demand stimulated by brand identification through advertising is perhaps the strongest weapon in the hands of a packer seeking to establish control of his outlets. However consumer information about the different categories of olive-oil and the different brands has been neglected by the appropriate authorities.

In Section Two it will be contended that in addition to the usual factors which determine demand the prevailing social habits and style of living play an important part in consumption decisions. It is likely that urbanisation, the general process of modernisation, and the pressures of everyday life have important implications for the industry. At base they seem more responsible for the falling demand than the rising price trend of olive-oil. In order to put this into long-term perspective Part One attempts to establish the pre-war importance of consumption and trade in olive products. Part Two deals with post-war developments in demand and consumer expenditure. As the home village increasingly becomes remote memory for migrants, links with rural origins appear to be alternating and many "traditional habits" are dying out. Thus olive-oil consumption is now coming to depend upon how frequently home cooking is undertaken and the extent of

"take away" foods and self-service. Whereas many housewives may well continue to appreciate the value of olive-oil - despite its price, the restaurant owner or proprietor of the fast food outlet naturally is only interested in economising an expensive oil and, where possible, substituting away. Part Three examines the domestic table olive market. It is shown that two features have become dominant after accession. First there has been a gradual reduction in the national support scheme and export subsidies. Secondly, there is the uncertainty this action has caused which has been further reinforced by constant domestic level of demand. Finally, Part Four focuses on the markets for olive residue and seed-oils which are generally classified as substitutes for olive-oil. It is argued that even though domestic consumption of olive residue oil has increased in recent years, most of its production is still absorbed in export markets. However, domestic consumption of seeds-oil has nearly doubled in the last ten years. The reasons for this state of affairs are highlighted.

In Section Three I report the results of my empirical investigation of the Greek demand function for olive-oil between 1958-1988. I try to argue that olive-oil still has a unique hold for Greek consumers and this affects the nature of demand.

In Section Four, the marketing strategies of a sample of surveyed firms in Messenia are examined. I argue that demand in the Italian market is crucial.

Finally, Section Five focuses on the marketing of olive products and seed-oils. It is contended that since Greece's accession the export of olive products have improved. The main reason has been the growth in demand from Italy - the main importing country for all products of the Greek olive industry. However Greece also experienced a large increase in the import and domestic consumption of seed oils. This state of affairs is bound to have a deleterious effect on the future of the olive products, and this is already apparent in the negative annual growth of olive-oil consumption in Greece. Part One deals with olive-oil. It is argued that after the Spanish and Portuguese accession, the EEC by implementing negative MCAs on olive-oil exports, attempted to deal with any surplus quantities within its market. However, it appears that the only way surpluses can be balanced is by an increase in olive-oil consumption in the north European countries as well as an increase of EEC exports to third countries. Part Two discusses the marketing of table olives and olive residue oil. It is contended that the observed increase in the demand for table olives was chiefly caused by effective worldwide marketing, general improvements in the standard of living and the "dual" use of the product as a dietary complement and as a luxury. On the other hand, the rising importance of olive residue oil as a consumption good, due to the lifting of all restrictions on its availability, makes it another substitute for olive-oil consumption. Part Three examines the trade in seed-oils since 1981.

8.1 Domestic Marketing

Distribution is, of course, the link between production and consumption so that changes in its pattern and disposition must be set against the background of the national economy. This is because as the channels of distribution change, they not only reflect group conflict between distributors but also the impact of the deeper forces within the economy.(1) Distribution and wholesaling in the olive industry have had to conform to the changing patterns of society. Naturally, in the past better quality control on olive-oil and emerging new centres of demand especially in urban areas have altered consumer behaviour but have had little impression upon the mode of distribution. Wholesalers continued to dominate the industry right up until the early 1970s. The reasons for this have been identified in Chapters Two and Three and basically are connected with the low level of development of the cooperative movement and the inactivity of the State with respect to helping improve the method and standard of distribution. Why then should the current forces acting upon the distributors produce any different results? Part of the answer has to lie with the greater knowledge of marketing now available to the trade. However, there can be little doubt that it has been Greece's accession to the EEC which has made the real difference. As we have already seen earlier (Chapter Six), entry to the EEC promoted a growth in the number of processing units. The owners of these units mainly originated from the ranks of olive merchants and wholesalers plus a sprinkling who diversified into the trade from other activities. Those wholesalers who did not seem inclined to take the risk of upgrading their function and penetrate the

processing part of the industry were marginalised, experienced a decline and were forced to limit their activities to mediation between the olive growers and the processor - packers.

The private packers on the one hand and the cooperatives on the other, competed in the domestic and export markets, and were now able to find outlets themselves to match their expanded production capacity. This impetus was reinforced by the knowledge that distributors, wholesalers and retailers alike had no exclusive interest in any one packer's product. The resulting changes in distributive methods aimed at direct dealing with the consumers and to retain control of the product as far down the distributive chain as possible.(2) The increase in the size and cost of the packaging units dictated a smooth and continuous process of marketing. Fluctuating and inconsistent demand seemed quite incompatible with an efficient and low cost mode of production and, as both cooperative and private firms grew in scale and concentration their movement into distribution became necessary.(3) This growth in scale, alongside the successful application of concentration techniques by the large packers in the industry, produced a new awareness of their strength and ability to control the market. The shorter the supply line the closer the processor-packer was to his market and the greater the control of both product and market. For firms such as Elais, Minerva and Eleourgiki this seemed a natural step. These two forces i.e, the weight of increasing productive volume and the desire to control the market, have prompted the entry of the processors into distribution, an expansion which signifies vertical organisation.

In 1981/82 out of a total consumption of 190,000 tonnes of olive-oil, 24.2% was packaged. By 1987/1988, 90,000 tonnes of olive-oil was packaged out of the 200,000 tonnes consumed i.e. 45%.[4] It therefore appears that within a period of only six years the amount of olive-oil which is sold packaged according to EEC specifications has doubled. One-third is now distributed through the cooperatives[5], and the rest through the private units. There is also a decreasing amount of unpackaged olive-oil distributed by small wholesalers. This is now probably less than 10%.[6]

We may now pose the question why the wholesalers have been unable to prevent the packers and the cooperatives from competing in their own territory, and why have they accepted the condition of controlled activity and dependence? Perhaps the main reason is the processors' role in olive-oil packaging, advertising and branding. Consumer demand, responding to guaranteed quality and stimulated by brand identification, is the strongest weapon in the hands of a packer seeking to establish control of his outlets. Though this falls short of ownership and contractual obligation, it nevertheless confers a greater degree of power than other conceivable methods.[7] Branding seems effective in proportion to the amount of promotion it is accorded, and is therefore dependent upon the weight of advertising undertaken. The main purpose of advertising in this sector is to create goodwill (which is demonstrated by the willingness to buy a new commodity or brand, or by a repeat purchase of a previous one). What seems important here is that the good will so created is attached more to the advertisers than to the distributors when these two functions

are distinct. Product diffentiation by branding creates demand power and it is therefore no accident that the increasing similarity between products should have been offset by the creation of brand distinction.(8) Where no real product difference exists the greater then is the need to influence the consumer by the brand name. Eleourgiki, currently the largest packer of olive-oil in Greece, sells three brands in the domestic market. More specifically, out of the 25,000 tonnes it sold in 1988, 12,000 tonnes were Spitiko, 5,000 tonnes were Alki and 8,000 tonnes were Liotrivi olive-oil. The whole amount was marketed in containers of 1 lt and 5 lt, and bottles of 1 lt according to EEC specifications.

Eleourgiki equally promotes all three of its brands.(9) Table 8.1 shows Eleourgiki's expenditure on advertising during 1981-1984, by different media.

Table 8.1: Eleourgiki's Expenditure on Advertising, 1981-1984
(In thousand[1] dr.)

Year	Media				Total Sum
	Newspapers	Magazines	Radio	T.V	
1981	186.8	-	-	-	186.8
1982	29.2	_	_	_	29.2
1983	285	2,717	1,005	13,104	17,110
1984	987	654	-	19,298	20,939

Notes: 1. In current prices

Source: Eleourgiki, Department of Marketing, 1988

We may observe that since 1983, the year when Eleourgiki moved decisively away from being just an intervention agency on behalf of the State, and entered the domestic and foreign markets, expenditure on advertising increased dramatically. As advertising is one of the arenas where Eleourgiki competes in the domestic market with Elais and Minerva, expenditure on advertising followed an increasing trend after 1984. With regard to Elais, out of the 15,000 tonnes of olive-oil which is sold in 1988, 60% was Altis. This brand is the main competitor of Liotrivi.(10) On average, Eleourgiki occupies 28% of the olive-oil market, Elais 15% and Minerva 10%.(11)

Another important factor in the marketing of olive-oil and especially virgin olive-oil, is whether the packing units have in their possession oil-banks where the product can be collected and kept for a specific time period. The general procedure is to retain the olive-oil in such banks for 3-4 months, so that maturity, clarity and homogeneity can be obtained before it is packaged and sold. This guarantees high quality olive-oil.(12) The total capacity of oil banks owned publicly and cooperatively, on a national level was 173,930 tonnes in 1980. The cooperatives owned oil-banks with a capacity of 127,230 tonnes, and the State owned the rest with a total capacity of 46,700 tonnes.(13) For the private oil-banks no aggregate data was available. Since 1981 though, Eleourgiki alone has spent 254,133 thousand dr. on oil-bank construction. Today, Eleourgiki's total oil-bank capacity is 233,000 tonnes. Therefore, it can be deduced that since 1981(14) the country's total oil-bank capacity has more than doubled. If we take into account the fact that modernisation plans of

the private as well as the cooperative sector included oil-bank construction together with their new buildings, this confirms such a trend.

The factor of quality in the marketing of olive-oil and olives has occupied the attention of State policy since at least the Second World War. The main reason for State intervention to protect the purity of olive-oils was the disparity in the price of olive-oil, oil seed-oils and edible olive residue oil.(15) This allowed potential adulterators (olive-oil wholesalers and retailers) to make windfall gains. The blending of olive-oil with oil seed-oils or olive residue oil is considered as adulteration and is punishable under Law Decree 136/1946 of the "Market Code". Market inspectorates made sporadic quality checks and some protective consumer measures have been applied over the years. The most important and the one implemented before January 1988, was that the import and trade of oil seed-oils was not allowed in the main olive producing centres of Greece such as Hania, Heracleo, Lasethi, Rethymno, Lesbos, Kerkera, Messenia, Lakonia, Lefkada, Zakenthos, Kefallonia and Preveza. After that date though, the restriction was lifted in the context of EEC regulations. The measures also specify that during the process of selling, the wholesalers and packers have to hand over to the retailers sealed samples of the olive-oil they intend to sell to them. Further, when olive-oil is exported, all transactions include a quality certificate stamped by the National Institute of Chemistry.(16)

According to the EEC regulation 1915/1987 the placing of olive-oil into quality categories has changed and is now as follows: the Extra olive-oil (0-1o), was called by the new regulation Extra Virgin. That previously known as Fine olive-oil (1-1.5°), was called Virgin olive-oil and includes oils with acidity of 1-2°. The term Fine could only be used at the production and wholesaling levels; retailing had to comply with the new regulation. Courante or Semi-Fine olive-oil was redefined to include oils with 2-3.3° oleic acid content per 100 gr, and the new name given to it was Ordinary Virgin. Even though this is considered edible its retailing was prohibited except when blended with Extra or unless it has been processed in a refinery. Lampante olive-oil remained inedible and now includes oils with an acidity count of 3.3° - 12°. Refined olive-oil was redefined to chemically processed oil with an acidity of less or equal to 0.5°; and as it is not suitable for immediate consumption, retailing is prohibited. Pure olive-oil was now called Olive-Oil while the use of the previous term Coupee could be extended until 31/12/1989 exclusively for exports to third countries. The acidity of Olive-Oil may not exceed 1.5°.

With regard to olive residue oil we now have two categories, the first is called Unrefined olive residue oil and the second Refined with a maximum acidity of 0.5°, but its retailing in an unblended form is prohibited. Finally, the term Blend of Refined Olive Residue Oil and Virgin Olive-Oil was substituted by the term Olive Residue Oil with a maximum acidity of 1.5°. Summarising we note that since November 1st, 1987 a new terminology has been applied on marketed categories to the EEC market, export to third markets and , from 1/1/1990, is applied to

the domestic market. Retailing of olive-oil is limited to the categories Extra Virgin (0-1°), Virgin (1-2°), Olive-Oil (0-1.5°) and Olive Residue Oil (0-1.5°).(17) The issue which arises is how well consumers are informed about these marketing categories, and what they really mean. Through advertising and branding information about the quality of the olive-oil (concerning acidity levels, and the distinction between extra virgin and refined) does not appear to come across. Furthermore, the State and especially the Ministry of Trade and Commerce, has not taken any initiative in order to remedy the situation. It therefore seems that even though rapid change has occurred in the domestic marketing and distribution of olive-oil, the flow of relevant information has not kept up with the pace of change and, as a result, consumer preferences for the different brands and categories are formed through the advertising campaigns of the firms.

8.2 Changes in the Patterns of Consumer Demand and Expenditure

8.2.1 Pre-War Consumption and Trade

Prior to the Second World War around 90% of olive-oil production, and around 55% of table olive production, was consumed domestically. According to the official estimates the average per capita consumption of olive-oil in 1939 was 10.5 kgr.(18) However since total consumption amounted to approximately 90,000 tonnes a more realistic figure of consumption per head would be 12.8 kgr of olive-oil.(19) During the pre-war period exports varied in accordance with the fluctuations in international trade. Table 8.2 shows that during the 1930s the lowest

quantity of olive-oil was exported in 1937 and the highest in 1932. Generally speaking olive-oil exports were used for blending with other oils. Some good quality olive-oil was also exported, and naturally this was suitable for immediate consumption. Even then Italy was the largest importer of Greek olive-oil, and there were years when that country absorbed up to 75% of the total Greek export. More normally, the average amount of exports to Italy over 1932-1939 comprised 36.5% of the total. The U.S.A., Britain and Egypt (together with the other minor markets) followed. According to the official sources 50% of exports originated from Crete, Lesbos and Kerkera. Messenia province exported only small quantities and other areas even more modest amounts.(20) Olive-oil exports were traded in barrels. As Greece was a net exporter, imports were negligible. However, during these pre-war years the processing of olive residue for export developed considerably. In years where the domestically produced olive residue was not sufficient, olive residue was imported from Turkey and Albania. It was processed in Greece and then re-exported within a nine month period from the day of arrival. Although there are statistics on olive residue imports there are none for olive residue oil exports for the period 1929-1938. In order to estimate such exports I therefore assumed that 100 kgr of olive residue contained around 10 kgr of olive residue oil. In this way I deduced that in 1927 4,869 tonnes of imported olive residue after crushing produced 486.8 tonnes of olive residue oil. In that year since olive residue oil exports were 1,217 tonnes the difference represented net national exports.(21) Finally in the pre-war period Greece occupied second place (after Spain) in the export of edible olives. In the last decade before the War these

exports accounted for 45% of total average production, while before this period they amounted to approximately 30% of the total.[22]

In the early post-War period per capita consumption of olive-oil reached an annual of 15.5 kgr which means that 107,000 tonnes of olive-oil were consumed domestically. Furthermore up to the early 1950's, no olive-oil exports were allowed. This was due to the high domestic demand for the product caused by the absence of foodstuffs as a result of the destructive effects of the Second World War. During the War years, olive-oil was used as a means of exchange, and one could literally buy a piece of land in an urban area for a 16 kgr tin container.[23] In 1947 the export of 5,000 tonnes of olive-oil to the U.S.A. was allowed in return for importing the same amount of oil seed-oils.[24]

8.2.2 Post-War Olive-Oil Consumer Demand and Expenditure

The pattern of consumer demand and expenditure has changed consistently - if slowly - throughout the post-War years. At first the distributive channels responded even more slowly but nonetheless a gradual adjustment to the new demands came about. In the economy at large new goods and new methods of retailing began to evolve, while some of older traditional methods of retailing faded away. The Second World War was an incubation period for the shift changes in the pattern of consumer spending and demand that were to emerge after the rationing and shortages of the immediate post-War period ended. Urban population rose at an unprecedented rate after 1948. Of course for many years,

people in the urban centres kept their contacts with the rural sector, and the old methods of retailing through relatives and friends persisted.(25) As the new generations grew up though, preferences tastes and modes of shopping changed. The increase in real incomes has been a fundamental cause of the changes, but it is also pertinent to enquire how far secondary influences (i.e. those apart from income) such as the changing conception of class and social status, and the widespread diffusion of education have been responsible for altering the patten of consumer expenditure. Greek olive consumers now appear to react to advertising in the predicted manner and to respond to image created characteristics of the product. This seems to presage a new attitude and there is certainly the means now available to follow it through in the market place. For example in 1988, Minerva sold 1 lt bottles of corn oil at 214 dr, Elais's price for exactly the same product was 200 dr and all the rest of the firms sold at 185 dr. Despite the price difference Minerva's brand remains in first place and it has even managed to increase its market share.(26)

Olive-oil consumption per capita in the domestic market in 1988 was about 20 kgr and total average consumption (of annually consumed olive-oil) amounted to 200,000 tonnes. This quantity is consumed as follows: 65,000 tonnes takes the form of self-consumption in the olive producing regions, and the balance of 135,000 tonnes is consumed in the urban areas. The consumption in the olive producing areas is 100% Virgin Olive-oil while consumption in the urban centres is 70% Courante and 30% Virgin. Refined olive-oil is seldom used for home-hold consumption.(27) Naturally consumption per capita is much higher than

the average in the olive producing regions and much lower in the areas with low production such as Macedonia, Thrace and Thessaly.(28)

In the urban areas there is increasing consumption of olive-oil substitutes such as sunflower oil, soya oil and cottonseed oil which, since January 1988, are also being consumed in the olive regions. In addition to the promotion and advertising campaigns launched by large firms like Elais and Minerva, the lower price of these products relative to that of olive-oil has been an important factor in explaining this trend. The price ratio is currently of the order of about 2:1 and in some instances can even assume values of 3:1 - a very worrying trend for the future prospects of maintaining olive-oil demand.(29) Table 8.3 presents patterns of olive-oil consumption by region in 1981/82. We may observe that out of the total consumption (190,000 tonnes) 24.2% was sold packaged, 44.2% unpackaged and 31.6% was self consumed. It is clear that the heaviest consumption per household is found in Peloponnesos and the Islands, and the least in the greater Athens area. By 1984/85 out of the total domestic consumption of 200,000 tonnes, 78,299 tonnes or 39% was sold packaged, 30% unpackaged and 30% was self-consumed. Three years later 1987/88, out of 200,000 tonnes domestically consumed 45% was sold packaged, 25% unpackaged and 30% was self-consumed.(30) So in less than a decade a combination of a rise in disposable income and the effect of advertising has indeed changed the pattern of expenditure on olive-oil and just about doubled the quantity of packaged olive-oil, while total consumption demand remained little changed.

8.2.3 The Table Olive Market

Table olives are distinguished by variety, category, type and size. Each variety has its own shape and taste and the best known varieties are: Conservolia, Halkidikis, Megaritiki, Kalamon, Throubolia and Kolovi. The category makes a lot of difference to the processing of the olive because each has its own maturity period, organoleptic characteristics and chemical composition. The three principal categories are green blonde and black.(31) According to the way they are processed table olives are distinguished by type and to each of these types a different commercial value is attached. For example, after special processing from the green we get the Spanish type. Another method of processing yields the Sikelian type, the stuffed type and many other local variations. From black olives we get the natural salt type, the dry type and locals. Ordering the table olives according to size is one of the most important tasks of processing because it makes the produce more obviously presentable. Moreover size, variety, category and quality are the main determinants of the selling price. Quality is a function of taste, odour, colour, shape and any alternations which the product might have suffered during processing and preservation. Following these criteria table olives are distinguished into two main qualities: first and the second order.(32)

Annual per capita consumption of table olives in Greece is estimated at 3 kgr and this seems to have remained rather constant over the last few years.(33) Some varieties are only exported, but domestic consumption is primarily covered by varieties such as Throubolia-

exclusively absorbed by the domestic market, Megaritiki, Kolovi and others which meet special consumption needs and represent particular olive growing regions. On average 10,000 - 12,000 tonnes of table olives are self-consumed and processed in small containers in households every year (including producer and non-producer families). A further 10,000 - 25,000 tonnes a year (depending on the level of production) is processed in containers owned by the olive producers themselves or by small olive merchants. The remaining amount is processed in the private and cooperative processing units. Average annual production of table olives between 1980/81-1986/87 was 84,000 tonnes out of which about 47,000 tonnes were exported. Each year the domestic market absorbs some 29,000 tonnes of table olives, average (1980/81 - 1986/87), with an average annual stock of about 36,000 tonnes.(34)

Table 8.4 shows annual consumption in Greece between 1981-1986. The overall trend is downward, especially after 1984. Cooperatives process about 40% of the total, but with an increasing tendency and now amounts to around 50%. They market 25% of the produce themselves while a further 15% is sold through the olive merchants. Clearly marketing is still an area where cooperatives lag behind the private sector and the main reason for this is the lack of experienced marketing personnel in the cooperative sector. Before Greece's accession into the EEC the State had established a national table olive market organisation.(35) Its aims were to support the income of table olive producers through stabilization of market demand for processed and unprocessed olives in the domestic (and export) market. It also set out to keep the final

processed produce at a reasonable price and high quality. The national measures were decided at the beginning of each crop year by the Commission of Prices and Incomes. The type and intensity of these measures differed from year to year according to the quantity produced, the level of stocks and to international conditions. The main features of this national intervention system were: a guaranteed "lowest price" for unsold annual production; a production subsidy to the olive growers; and a subsidy to the olive producers and cooperatives for the purchase of storage and processing facilities. An export subsidy for all exported olives quite independent of the country of destination was also granted. In the year of Greece's accession to the EEC, export subsidies ranged between 23-38% on top of the F.O.B value of the produce. By this policy the State aimed at improving the quality of table olives while maintaining the income of producers and the processors-exporters.(36)

By article 70 of the Rome Treaty on Greece's accession the country was allowed to keep national measures for table olives until 31 December 1985. Also, Article 42b of EEC Regulation 136/1966 concerning Common Market Organisation of fats and oils (which was modified to include table olive), stated that the Council would adopt special measures for table olives, the latest until 31st December 1985. But after taking into account the Commission's proposal that it was not necessary to introduce a scheme of Common Market organisation for table olives the Council, decided on the 20th December 1985 that the Greek State could extend their national measures until 31st December 1987.(37) This proposal was in recognition of the fact that the table

olive sector was still in need of a national support scheme. Despite the fact that the two-year extension and the uncertainty about the future constituted obstacles to the development of the sector, the problem appeared with grater intensity after the 1st of January 1987. Then the Greek government were forced to reduce the percentage of export subsidies on the produce by 55% (when exported to EEC counties) and by 40% when exported to third countries. These reductions will continue (until the subsidies are abolished later in 1990) on transactions with EEC countries and (by 1992) on transactions with third countries.(38) One would expect that by 31st December 1987 the EEC would have adopted some Common Market scheme for table olives. Instead, uncertainty and the reduced export subsidy have become major features in the domestic table olive market after accession.

The problems created in the domestic market become clearer if we take into account the following factors. Over the seven year period 1980-1986, as mentioned Greece produced on average 84,000 tonnes and consumed 29,000 tonnes of olives. Average exports were 47,000 tonnes and the stock at the end of each period reached 36,000 tonnes of table olives. Domestic consumption and exports during the period between the end of an olive year and the beginning of the marketing of the newly produced table olives seldom exceed 16,000 tonnes.(39) It therefore appears that there is a stock of 20,000 tonnes or 24% of the total production. While this is happening in the domestic market the EEC market of table olives has annual stocks of the order of 98,000 tonnes (table 8.5), which presents the Community with a problem as EEC produces 45% of the world production, consumes 34% of world consumption

and accounts for 78% of the world trade in table olives. Table 8.6 shows the index of wholesale prices of table olives between 1968-1983 and the index of producers' costs over 1978-1983 against the wholesale prices over the same period. We may observe that while the wholesale price index nearly doubled, producers costs nearly tripled. The figures in Table 8.7 present prices paid to the producers of table olives in dr/kgr for 200 olives/kgr during 1978/79 - 1986/87. Over the period 1987/88 no minimum price was set. Prices were determined by the free market through the interaction of supply and demand. For 1985/86, those producers who kept storage facilities for processing received increased prices for the black table olives and Kalamon by 4 dr/kgr in the beginning of the year, and 1 dr/kgr on top for each additional month. Cooperatives on the other hand, received a subsidy of 5.5 dr/kgr for the green and blonde types, while for the black Kalamon and Throumbes, they received 6.5 dr/kgr. Also, for 1986/87 the marginal increase to producers with storage facilities was set at 5 dr for January and 1 dr for each additional month.(40) It therefore appears that if the national support scheme ceases to operate and no other provision is made in the context of an EEC common market organisation for table olives, Greek producers will face grave problems.

8.2.4 The Olive Residue Oil and Seed-Oils Markets

The olive residue oil market forms the final part of consumption and expenditure of the industry. According to acidity, olive residue oils are distinguished into three categories. First there is low-grade, with acidity up to 15% in free oleic acids. Secondly there is

the midgrade, with acidity greater than 33% in free oleic acids. After refining these two are made suitable for human consumption while the third, the highgrade, are only used in the production of green soap.(41)

Edible olive residue oil is available for consumption in two types: Refined and Refined Demargarined olive residue oil. A small percentage of the refined produce is used as raw material for margarine and cooking fat. The two types of olive residue oil are marketed in 1 lt plastic bottles and 5 lt metallic containers. A minimum price for the marketed olive residue is set each year by the local provincial administration. To determine this price, the content of olive residue in oil is taken into account as well as the cost of extraction of olive residue during the previous year. Another consideration is the price of olive residue in previous years.(42) The processing units in most cases buy the olive residue at a higher price than the one set by the authorities. This happens because of competitive action between the different plants - especially when export demand for the produced olive residue oil is buoyant. The price of olive residue varies from region to region and is also dependent on the methods of production. For example, the cost of the olive residue which is produced by classical type presses at oil-mills is higher than that produced by modern centrifugal type of equipment. The reason is that in the former case the olive residue holds less water and therefore more olive residue oil can be extracted out of a given amount.

The main factor which influences the price of olive residue oil is its acidity. To support the price of olive residue oil and create a public regulatory stock so that there are few price fluctuations in the domestic market, the State has intervened.(43) Until 1980 national intervention prices were determined by the Ministry of Agriculture (YDAGEP). After 1981 the product is under the Common Market Organisation for Oils and Fats. Intervention prices are therefore set by the EEC and Table 8.8 shows EEC prices and subsidies over the period 1982/83 - 1987/88. Production aid is 8% on top of the production aid paid for olive-oil. This is because the olive residue contains olive oil estimated at 8% of the total content of olives in olive-oil. The production aid is paid to the producer together with that for olive-oil. Consumption aid on the other hand is paid to the refiner-packer. It is only received for the blend of refined olive residue oil and virgin olive-oil. Until 1986/87 it was only paid on quantities exported but, since 1987/88, it is paid on domestically consumed amounts as well. Furthermore, since 1981, unrefined olive residue oil with acidity levels up to 15% in free oleic acids is collected by YDAGEP on behalf of the EEC.(44) According to their content in free oleic acids, olive residue oils are now placed into three categories : Category A, which contains oils with up to 5% oleic acids; Category B, contains oils with 5.1-8% oleic acids; and Category C which contains oils with 8.1-15% oleic acids. Table 8.9 presents the amounts collected by YDAGEP during 1981-1984.

Table 8.9: Olive Residue Oil Collected by YDAGEP during 1981-84

(In tonnes)

Year	Category A	Category B	Category C	Total
1980/81	-	831	3,622	4,453
1981/82	-	735	4,165	4,900
1982/83	-	404	998	1,402
1983/84	-	48	353	401

Source: Ministry of Agriculture, (YDAGEP)

Since 1984/85 there has not been any olive residue oil collection by YDAGEP because of the export activity which earned the producers higher prices. According to the International Olive Oil Council domestic consumption of olive residue oil between 1975/76 - 1982/83 did not exceed on average the 16,000 tonnes. Even though in recent years it has ranged above this average, it is still below 20,000 tonnes a year. This seems to be due to a lack of effective advertising by the refiners since the product is edible.(45) But if olive residue oil is not considered by Greek consumers as a serious substitute for olive-oil, oil seed-oils definitely are.

The consumption of oil seed-oil has increased considerably over the last few years as an edible product as well as an input to margarine production. At present, the needs of the domestic market are estimated at about 90,000 tonnes but on a rising trend towards the

120,000 tonnes mark. Between 1977-1980, average domestic consumption was 48,000 tonnes.(46) An important factor here was the improvement in the quality of edible oil seed-oils and for more effective advertising (mainly by Elais and Minerva) emphasising its role in a healthy diet : this succeeded in convincing consumers that oil seed oils were equally as good as olive oil - yet could be obtained for a much lower price. This is because the input price of seed-oils is much lower than that of olive-oil on account of a lower production cost.(47) Thus the diversification by the larger packers from olive-oil to oil seed-oils has proceeded apace. On the other hand, as Greece is the third major world producer of olive-oil, the product was under the national protection scheme long before the country's accession into the EEC. This scheme meant that production and trade of oil seed-oils in olive growing regions was strictly prohibited. This delayed the development of the seed-oils industry and, as a result, the preferences of Greek consumers were shaped by the availability of olive-oil - especially virgin olive-oil. However the major competitors of Greece inside Europe - Italy and Spain, have developed their own seed-oils industries to a point where the annual consumption of oil seed-oil is now very close to that of olive-oil. More specifically, in Italy average consumption per capita of oil seed-oils over 1977-1980 was estimated at 12.6 kgr, and olive-oil consumption at only 8.8 kgr. In Spain, oil seed-oils consumption is 10 kgr and that of olive-oil is just above it at 10.1 kgr.(48) It therefore appears that in both countries consumer preferences have been shaped so as to accommodate the supply of both types of oil. Furthermore, the largest part of olive-oil presently consumed in Italy and Spain is a blend of refined and extra virgin, and

this makes for a different pattern of consumption than that prevailing in Greece. There per capita consumption of oil seed-oils was only 5.2 kgr in 1988, compared with nearly 20 kgr of olive-oil. Since April 1986, the restriction on oil seed-oils imports have been gradually lifted as the adjustment period has ended. From January 1988 oil seed-oils have been freely imported and cultivated in the olive producing regions.(49) Per capita consumption of oil seed-oils in Greece compared with that of olive-oil and other oils and fats is presented in Table 8.10.

Table 8.10: Per Capita Consumption of Oils and Fats in Greece, 1988 (in kgs)

	Per Capita Consumption	% in the Total
Olive-Oil & Olive Residue Oil	20.8	73.4
Oil Seed -Oils	5.2	18.2
Butter-Lard	0.6	2.3
Margarine and Other Animal Fats	1.7	6.1
Total Consumption of Oils and Fats	28.3	100

Source: Eleourgiki, Department of Marketing, 1988.

We may observe that only 26.6% of the diet of the Greek consumer is made up of oils and fats other than olive-oil and olive residue oil. But ten years ago consumption of other oils and fats was below 10%, so the figure of 26% indicates a rapidly growing consumption demand.

Quite clearly the retail price of oil seed-oils in comparison with that of olive-oil is an important factor. Table 8.11 presents retail prices in the super markets, of the main oils and fats products consumed in the country.

Table 8.11: Retial Prices of Oils in Greek Supermarkets, 1984-1985 (dr/lt)

	Nov' 84	Feb' 85	Change %	Apr' 85	Change %
Sunflower Oil	178.8	185	3.5	189	1.9
Cotton Oil	173.8	196	12.8	194	1.1
Corn Oil	204.5	211	13.2	245	16.1
Olive Residue Oil (refined)	186.4	-	-	234	-
Olive-Oil, Virgin	245.5	320	30.3	326	1.9
Olive-Oil, Coupee	239.6	275	14.8	302	9.8
Relationship Sunflower/Virgin Olive-Oil	1:1.37	1:1.73		1:1.73	

Source: Eleaourgiki, Department of Marketing, 1988.

The prices shown are representative of the retail prices in the super-markets and are expressed in dr/kgr (they are an average of several different brands). The inclusion of olive-oil retail prices (virgin and coupee) as well as of olive residue oil makes a comparison possible. We can observe that in the period November 1984 to February 1985 the price of virgin olive oil increased 30.3% while the price of its substitutes, especially sunflower oil, increased by only 3.5%. So the price relationship changed from 1:1.37 to 1:1.73; within a period of three months.(50) It appears that the domestic market for olive-oil

has been eroded by imports and domestic production of cheaper seed-oils. Greek consumers have responded to the change in relative prices and there has been a steady increase in the consumption of seed-oils. On the other hand, the annual rate of change of domestic olive-oil consumption over the last eight years 1981-1988 is -0.3%: this of course, is a very worrying trend for the olive-oil producers. In order to quantify the main variables which affect olive-oil consumption a time-series estimation of the Greek olive-oil demand function is undertaken next.

8.3 An Estimation of the Greek Olive-Oil Demand Function, 1958-1988

8.3.1 The Data

C_t denotes the annual consumption of olive-oil over 1958-88. The series has been extracted from data provided by the N.S.S.G and the Ministry of Agriculture. Y_t denotes personal disposable income over 1958-1988. The series has been extracted from the National Accounts, 1958-1975. Since personal disposable income is not calculated by the N.S.S.G after 1975 I have extracted the data from O.E.C.D sources. In order to find the annual growth of olive-oil consumption for the period, an O.L.S estimation was performed. The first estimation gave:

$$C_t = \underset{(27.8)}{124.6} + \underset{(11.7)}{2.8}\ TIME$$

$$R^2 = 0.82,\ D.W. = 0.88$$

Re-estimation by the Cochrane-Orcutt procedure to take care of 1st order auto-correlation produced the following:

$$C_t = \underset{(15.9)}{122.4} + \underset{(7.0)}{2.9}\ TIME$$

$$D.W = 2.3$$

The compound rate of growth of olive-oil consumption during the same time period was calculated at 2%. So olive-oil consumption increased on average by approximately 2,900 tonnes a year. However the annual compound rate of growth of olive-oil consumption during 1981-1988 was calculated at -0.3%. Next, in order to find the marginal propensity to consume an O.L.S estimation was performed.

$$C_t = \underset{(29.6)}{157.8} + \underset{(3.9)}{0.01Y_t}$$

$$R^2 = 0.33 \quad D.W = 0.3$$

Re-estimation by the Cochrane-Orcutt procedure produced the following:

$$C_t = \underset{(7.2)}{151.2} + \underset{(1.18)}{0.007Y_t}$$

$$D.W = 2.6$$

It appears that the marginal propensity to consume olive-oil out of personal disposable income is statistically insignificant and indicates that a 10% rise in income would cause a 0.07% rise in the consumption of olive-oil. Table 8.12 presents the data used in estimating the Greek olive-oil consumption function for the entire period 1958-1988.

8.3.2 Specification of the Model and of the Variables Used

All variables were used in their logarithmic form. It is assumed that olive-oil consumption in year t, is a function of the retail price of olive-oil, LP_t, personal disposable income LY_t, the retail price of the substitute seed-oils, LPS_t, population, N_t, and consumption of the previous year LC_{t-1}. In detail the variables used were the following:

$$LC_t = f\ (C,\ LP_t,\ LY_t,\ LPS_t,\ LC_{t-1},\ N_t, TIME)$$

(a) Consumption of Olive-Oil, LC_t, on an annual year-by-year basis for 1958-1988 was given in thousands of tonnes. The data source was the N.S.S.G and the Ministry of Agriculture. An extra explanatory variable was added to the model, LC_{t-1}, to allow for consumer preferences.

(b) Retial price of olive-oil, LP_t, during 1958-1988. The data source was the N.S.S..G, Statistikes Epetirides (various years). The price series used was the average retail price of olive-oil (acidity 3^o), prevailing in the main urban centres of the country i.e. Athena, Pireas, Thessaloniki, Heracleo and Hania. The price series was used with a base of 1970=100. The real olive-oil price was used after being deflated by the Retail Price Index (with a base of 1970 = 100).

(c) Personal disposable income, LY_t, during 1958-1988. The data source was the National Accounts, N.S.S.G, (various issues). As already mentioned, since 1975 the N.S.S.G has not estimated annual personal disposable income figures so they were extracted from O.E.C.D, Economic Indicators (various years). The series was used at current market prices and also with a base year of 1970=100. Per capita personal disposable income was also used.

(d) Retail price of substitute seed-oils during 1958-1988. The data series was extracted from the N.S.S.G, Monthly Statistical Bulletin (various years). This is an average weighted price of sunflower-oil, corn-oil and cotton-oil. The price series was used with a base year 1970=100. The real seed-oils price was also used, and the price series was deflated by the Retail Price Index with a base of 1970=100.

(e) Population, N_t, during 1958-1988 was extracted from the National Accounts, various years. Given that olive-oil is an important dietary product in Greece it was felt that this should be included.

(f) A constant term, C, was used, since an important part of total olive-oil consumption is self-consumed (i.e. by the producers themselves).

(g) TIME was used to take account of social habits, preferences and the increase in population.

8.3.3 The Results

The estimation of the model was by the Ordinary Least Squares (O.L.S) method. The results are presented in Table 8.13. The first equation, where all variables are present, showed consumption of the previous period, LC_{t-1}, to be statistically insignificant. This suggests that there may be collinearity between this variable and income, given that both increased over the period.

In the second equation, the LC_{t-1} was dropped and the statistical significance of all variables increased. Income LY_t nearly became statistically significant. In the third equation the real price of olive-oil and seed-oils was used but the results were unsatisfactory. This may be because in the deflator - (the Retail Price Index), the price of other goods are included which do not influence the decision of the olive-oil consumer. After all the Greek public traditionally purchases this product in large quantities. It appears that the following equation performed best:

$$\begin{array}{lcccccc} LC_t & = & 4.86 & -0.10LY_t & - & 0.5LP_t & +0.44PS_t \quad +0.04TIME \\ & & (11.8) & (-1.9) & & (-3.3) & (2.4) \quad\quad (8.5) \end{array}$$

$$R^2 = 0.91, \quad D.W = 2.10$$

We observe that all variables are statistically significant apart from income which also has a negative sign. This suggests that a 10% increase in personal disposable income will, ceteris paribus, cause a 1% reduction in the consumption of olive-oil. This may be explained by the fact that higher incomes which go together with urbanisation and

"modernisation" are factors which take the consumer away from their traditional dietary product of olive-oil. The price coefficient shows that a 10% increase in the price of olive-oil ceteris paribus, cause a 5% reduction in consumption. Also the price coefficient of seed-oils shows that a 10% increase in price will cause a 4.4% increase in the consumption of olive-oil. This cross elasticity of demand shows the substitution possibility between seed-oils and olive-oil. Overall it appears that olive-oil remains a highly valued product to the typical Greek consumer since the income elasticity of demand is much lower than its price elasticity.(51) Next, per capita consumption and personal disposable income were used. Here tourist consumption is taken into account as countries like Greece, Italy and Spain attract many tourists every year. The following equation performed best:

$$L\ \frac{(C)_t}{N_t} = \underset{(-7.9)}{-4.5} \quad \underset{(-2.2)}{-0.11L}\ \frac{(Y)_t}{N_t} \quad \underset{(-3.0)}{-0.45LP_t} + \underset{(2.0)}{0.37LPS_t} + \underset{(7.7)}{0.04TIME}$$

$$R^2 = 0.82,\ D.W = 2.2$$

We observe that there is a good fit of the regression with $R^2 = 0.82$, but this is not as high as in the total consumption formulation. The value of the coefficients has not changed, but income has become statistically significant while keeping its negative sign. We may conclude that this modelling exercise shows that the usual economic variables do not seem to be the major determinants of olive-oil consumption. However, a combination of high consumer prices, relatively lower seed-oils prices and higher incomes, has led to a negative annual compound rate of growth (-0.3%) in the consumption of olive-oil since 1981. This suggests that a national campaign is

required in order to inform the consumers in the urban centres about the properties of healthy unprocessed foods in their diet including olive-oil.

8.4 Marketing Strategies

The approach to marketing of the sample of firms surveyed in he province of Messenia may be discussed at two levels : the market level, i.e. the use of agents in foreign markets, and at the customer level, i.e. the management of actual customer relationships. Generally, the policy of the firms in relation to their international operations is designed in a stepwise manner where only a limited number of alternatives are analysed and where the experience and the results of earlier activities continuously affect policy. One very important constraint upon the firms is the nature of the product they deal in. They cannot easily plan in advance and their policy cannot be designed on a once-and-for-all basis because there are often unexpected fluctuations in production which influence the export price. In my experience the longest time these firms can effectively plan ahead is three to four months.

A specific relationship between the firm and the market can be seen as an exchange process whereby the firm faces several different problem situations, carries through certain activities, monitors reactions in several ways from customers, distributors and competitors, adapts its activities and then reacts again.(53) During this process of "muddling through" the firm's approach towards the market develops. As

far as the international market is concerned there are many different kinds of subprocesses, which are all interrelated. Changes in one may well cause change in all the others. Four of these processes as substantiated in the literature were used with reference to the sample of firms surveyed.(54)

The first process is the perception of the export market for olive oil and olives. This perception is partly based, on earlier experience and upon the knowledge of the existing social environment. Table 8.14 presents the percentage of total sales exported by the sample firms.

Table 8.14: **Percentage of Total Sales Exported by the Sample Firms 1985-1988.**

Sample Firms	1985/86	1986/87	1987/88	1988/89
Eleourgia Messenias	100	44	32.5	78.6
Plemmenou Bros.	75	84.7	58.9	N.A[1]
Kefalea Bros.	100	100	96.3	N.A
Yefteas Andreas	91.1	95.7	87.1	N.A
Eleourgiki	46	45	50	N.A
Kalogeropoulos & Sons	92	90	85	N.A
Vraka Bros.	95	90	100	N.A
Eleourgia Kalamatas	-	-	5	N.A
Georgiki Viomihania	100	100	20	N.A
Koutelas	85	90	-	N.A
C.C.U.M	-	20	60	N.A
Olive Cooperative Gargalianoi	20	14	10	N.A

Notes: **N A = Not available**

Source: **Company Confidential Records and Interviews, 1988.**

We may observe that a majority of firms in the sample are export oriented and their export share can comprise between 80-100% of their total sales. Italy is (and has for a long time been) a very important

area for Greek olive exports (see Table 8.15). In recent years Italy has imported 80-90% of Greek olive exports (by value). In 1983 the exact figure was 81.2%, in 1984 88.5%, in 1985 88.1% and in 1986 94%. All the other markets except France and Cyprus (which have absorbed up to 7% of the total export value) have been - and still remain marginal. So, the frame within which the Greek firms operate is a virtual monopsony. Therefore, if we assume the perceived importance of different markets is related to the sales volume of the companies, it is the Italian market and the domestic market which have the highest priorities.. Then follows, France, Cyprus, U.S.A, Canada, Britain and lastly Africa. If we allow this information to be complemented by the comments given during my interviews, this ranking also appears to be consistent.(55) Italy is given the highest priority. This can be explained by the fact that perceptions are influenced not only by experience by also by expectations. There is however, a clear variation among the different firms. The reason is that the perceived market potential of individuals firms is not only dependent on the size of the total market, but also on the competitive situation and on the structure and characteristics of the purchasing side.

The second process is supplier-customer relationships. The interaction between sellers and customers in export markets develops into relationships over time. Generally one could characterise such relationships in quantitative and qualitative ways. The quantitative dimension applies to the volume dependence between the two sides, while the qualitative dimension concerns the function that each party accords the other. The quantitative dimension can be detected by seeing how

customers use a certain supplier as a main source and in this way some of the customers evolve into comprising the seller's main outlet. Let us first look at it from the selling firm's point of view by determining the importance of individual export markets. For our sample we have tried to discover the relative importance of customer relationships by calculating the share of sales accounted for by the buyers. The figures are presented in Table 8.16.

Table 8.16: Percentage of Sample Firms' Exports to Italy, 1985-1989.

Sample Firms	1985/86	1986/87	1987/88	1988/89
Eleourgia Messenias	100	100	100	100
Plemmenou Bros.	73	66	80	-
Kefalea Bros.	50	70	65	-
Yefteas Andreas	70	85	69	-
Eleourgiki	10	30	57.2	-
Kalogeropoulos & Sons	28	50	60	-
Vraka Bros.	None	None	None	-
Eleourgia Kalamatas	-	-	None	-
Georgiki Viomihania	100	100	100	-
Koutelas	100	100	-	-
C.C.U.M	-	100	100	-
Olive Cooperative Gargalianoi	100	100	100	-

Source: Confidential Company Records and Interviews, 1988.

We observe that for those olive firms which are mainly exporters beyond and doubt the largest market is Italy. If the relationship now is looked at from the buying firms' point of view, on a national level we can deduce from Table 8.17 that Italy has never imported more than 30% of her imports from Greece. So, it seems reasonable to assume that in Italy there are many examples where the Greek olive firms and

especially the sample ones, are not more than marginal suppliers.(56) Therefore the trade between Greece and Italy has something of an in-built inequality of exchange process. In this type of dependency the buyer has a very large need in relation to the supplier's capacity, since it takes the greater part of the supplier's sales yet still purchase its main volume from elsewhere.

The qualitative dimension in this relationship relates to the function the partners play in each others business. This can be seen from two points of view: the customer's and the supplier's perspectives. Italy as the key customer for Greek olive-oil can dictate to Greek suppliers. For example, it prefers to import unpackage virgin olive-oil because then it can blend it with its own production, package it and receive the consumption aid offered by the EEC. Even when it imports packaged olive-oil its acts as a price setter since it will usually buy at cost price (plus some mark up plus of course transport expenses). As entrepreneurs in the sample firms indicated representatives of the Italian firms visit frequently the areas where Greek firms operate in order to personally estimate the cost price and, on this basis make an offer to the suppliers. In other words it is the (largest) customers who choose the rules of the exchange. Buyers also take advantage of their strong bilateral position through a variety of other means. But this can also work to the benefit of the sellers too. Thus there are indications that sellers try to gain ideas of how to improve their own production and distribution. For example modern equipment used in the second stage processing of olive-oil to be found in the sample firms actually

originated (i.e was imported) from Italy. Also the way Italian firms operate has given their Greek suppliers several ideas about how to improve their international marketing performance.

The third process is that of channel organisation. This is the attempt of firms acting either alone or together with some external unit, to facilitate the interaction process in several possible directions. As the Italian market is generally considered to be an unsafe place for independent business dealings, the firms - even the larger ones like Eleourgiki and Kefalea Bros. - do not wish to commit resources to set up their own sales organisations.(57) So the firms trade either directly with the customer or they use an agent. The agent may be particularly strong in a certain region or have an extensive distribution network covering the target customers. Regardless of whether a firm has some form of representation in the foreign market or not (via an agent or an office), it seems important for the firm itself to possess knowledge and experience of the market in order to derive maximum benefit in its dealings.

The fourth process concerns the Greek olive firms' experience and knowledge of export markets. This is a factor which should improve through time and as a result of natural and continuous exposure to the market in question. It seems reasonable to suppose that a firm's behaviour in a market is very dependent upon the knowledge and experience it has managed to accumulate.

We may conclude with the observation that the Greek olive export firms, at least those in Messenia, are highly dependent on the demand from the Italian market. This suggests that the buyer - supplier relationship is an unequal one. The Greek supplier finds himself subordinate to Italian needs. The obvious way to remedy this situation is diversification through a campaign to promote olive-oil to the rich markets of Western Europe, U.S.A and Canada. But this itself raises many issues and questions which I will now try to address.

8.5 National, EEC and International Marketing of Olive Products and Seed-Oils

8.5.1 Olive-Oil

Until the accession to the EEC, Greece's exports of olive-oil ranged from 8,000 - 12,000 tonnes a year except for 1978 and 1979 when they increased significantly (to reach 52,000 and 23,000 tonnes respectively). Another exception was 1977 when exports touched their lowest level of the decade. Table 8.18 presents Greek exports during the period 1975-1986. We may observe that since 1981, exports of olive oil display a marked improvement compared with that of previous years. Record levels were achieved in 1983 and 1984 when 147,500 and 108,500 tonnes were exported. This unprecedented increase was due to the increased demand from Italy where bad weather conditions destroyed olive production.(58)

Apart from Italy other markets in order of significance include, France, the Soviet Union, Cyprus, U.S.A, Canada and Egypt. In 1985

certain national measures were implemented aimed at encouraging the export of packaged olive-oil so that the EEC consumption aid could be received by the packers.(59) But in fact these measures affected exports in a negative way since the largest part of export demand is unpackaged olive-oil from Italy. In 1986 when restrictions on exports were lifted, we observe an increase to 66,730 tonnes of packaged and unpackaged olive-oil i.e. an increase of 24.4% compared with the previous year. In 1987, exports did not rise since bad weather conditions destroyed a large part of the crop (about 27%), as well as part of the olive trees.(60) As a result, domestic olive-oil stocks had to absorb a substantial proportion of production instead of exports. For the first time since Greece's accession to the EEC, as of the 1/7/1987 negative Monetary Compensation Amounts (MCAs) were imposed by the Community which acted as a subsidy on the import of olive-oil into Greece and as a flat tax rate on exports.(61)

The negative MCAs are calculated by multiplying the product of the intervention price (expressed in ECU) and the green rate of exchange of the national currency, by the percentage difference between the green rate of exchange (of the drachma) and the flexible exchange rate between the drachma and the ECU. According to tax classification and type of packaging the negative MCAs in the olive oil market in the last week of June 1987 are summarised in Table 8.19.

Table 8.19: Negative Monetary Compensation Amounts on Olive-Oil Exports (in dr/kgr)

Tax Classification	Unpackaged[1] Olive-Oil or in Packaging over 5 lt	Packaged Olive-Oil in Containers up to 5 lt
1507 AI a2	-99.40	-60.36
1507 AIb[2]	-94.19	-55.14
1507 AIIa[3]	-97.96	-58.91
1507 AIIb[3]	-47.52	- 8.47

Notes: 1. The amounts presented are not constant but change according to the difference between the green and flexible rate of exchange between the dr and ECU during the period of export or import of olive-oil.

2. Refers to virgin olive-oil

3. Refers to refined olive-oil

Source: Ministry of Trade and Commerce, 1988.

The negative MCAs are implemented on exports in intra-Community as well as inter-Community trade. But let us examine what the situation is as far as consumption of olive-oil is concerned in the EEC countries. First of all and not surprisingly the chief consumer countries are the olive oil producers themselves. Tables 8.20 presents consumption per capita in 1988 in the EEC. It is apparent that EEC-north countries have a negligible consumption per capita.

Table 8.20: The Consumption of Olive-Oil per Capita in the EEC 1988

(In kgs)

Countries	Per Capita Consumption
Italy	8.8
EEC-North[1]	0.1
Greece	20.0
EEC-10	2.6
Spain	10.0
Portugal	4.8
EEC-12	3.5

Note: 1. EEC of eight apart from Greece and Italy.

Source: Eleourgiki, Department of Marketing, 1988

According to the available information, per capita consumption of those countries in oils and fats is 26.2 kgr. Within this figure the contribution of olive-oil is 0.1 kgr; oil seed-oils 12.7 kgr, butter 6.3 kgr; while margarine and other animal fats contribute 7.1 kgr. In Italy per capita consumption of oils and fats consists of 12.6 kgr oil seed-oils, 1.7 kgr butter, 2.2 kgr margarine and 8.8 kgr olive-oil, a total of 25.3 kgr. In Spain, the total per capita consumption in oils and fats is 21.6 kgr, oil seed-oils 10.1 Kgr, butter 0.3 kgr, margarine 1.2 kgr and olive oil 10 kgr. Greece, on the other hand, has the highest level of per capita consumption in olive-oil at 20.0 kgr, then 5.2 kgr in oil seed-oils, 0.6 kgr in butter and 1.7 kgr in margarine and other animal fats thus yielding a total of 27.5 kgr.(62)

Table 8.21 shows consumption of olive-oil in the EEC and other countries for the period 1975/76 to 1984/85 according to information proved by the IOOC. We may observe a small but steady increase in consumption for all countries. The EEC-10 group consumed 932.3 thousand tonnes in 1984/85 which, compared with their 1975/76 level of consumption, shows a 56.1% change over a period of only ten years. Over the last three years however, (i.e. 1987 - 1989), consumption has tended to stabilise at 930 thousand tonnes a year.(63) It is also apparent that Spain has increased its consumption from 278.2 thousand tonnes in 1975/76 to 365 thousand tonnes in 1981/82 and 1982/83 even though this was followed by a small reduction in 1984 and 1985. World consumption also rose to 1,710.1 thousand tonnes in 1984/85 compared with 1,280 thousand tonnes in 1975/76 i.e. an increase of 33.6% over the decade.

A significant reduction however, can be observed in Turkey's consumption, since from 100 thousand tonnes in 1978/79, the amount fell to 60 thousand tonnes in 1984/85 following a decreasing trend in the years in between.(64) Table 8.22 presents intra-EEC trade as well as trade between EEC and non-member countries.

Table 8.22: Imports and Exports of Olive-Oil in the EEC-10, 1983-85
(In tonnes and '000 ECU)

Years	Intra EEC Trade		Imports of EEC-10		Exports of EEC-10	
	Quantity	Value	Quantity	Value	Quantity	Value
1983	128,241	282,480	82,673	118,616	45,502	87,339
1984	115,281	242,905	52,353	73,075	47,980	101,137
1985	57,751	135,275	294,754	294,754	70,620	137,340

Source: Eurostat, Imports-Exports, 1983, 1984, 1985

Out of the three olive producer countries in the EEC-12, Greece and Spain are the net exporters and therefore the main suppliers to the other member States and especially to Italy (which is the main importer and consumer member State) France and Portugal. We can see from Table 8.22 that in 1985 trade suffered a significant reduction compared with that of 1983 and this was because Greece limited its exports of olive-oil that year. The EEC has been the largest importer of olive-oil in the World. After Greece's accession though imports were reduced by half. After the accession of Spain and Portugal imports were further limited to quantities coming in from Tunisia - largely thanks to the special measures taken by the EEC-Council to perpetuate exports of that country to the Community.(65) On the other hand, the export by the EEC to third counties is increasing continuously. Before 1981, the average exports were about 17,000 tonnes. After Greece's accession EEC exports increased to 45,500 tonnes in 1983, 48,000 tonnes in 1984 and 70,600 in 1985. At present EEC-12 exports exceed 130,000 tonnes. Table 8.23 presents the trade balance of olive-oil in the European Community.

Table: 8.23 Trade Balance of Olive-Oil in the EEC, Average of 1975/76-1984/85. (In thousand tonnes)

	EEC-10	Spain and Portugal	EEC-12
Production	711	492	1203
Imports	137	3	140
Quantity Available[1]	848	495	1343
Consumption	780	370	1150
Exports	79	78	157
Demand[2]	859	448	1307
Production - Demand	-148	+ 44	- 104
Change in Stocks[3]	- 11	+ 47	+ 36

Notes: 1. Quantity Available = Production + Imports
2. Consumption + Exports
3. Change in Stock = Available - Demand

Source: Eleourgiki, Department of Marketing, 1988

We can see that demand for olive-oil in the EEC-10 was in excess of production during this period. The difference was covered by imports from Tunisia, Morocco and one or two other counties. In the EEC-12 however, during the same period we observe that supply exceeded demand (i.e. there was a positive change in stock levels). All this represented the situation until 31/12/1985. After the accession of Spain and Portugal the positive picture tends to change significantly for the following reasons. First, it is reasonable to assume that Spanish production will increase since producer prices will rise by 70% in the adjustment period until they are set equal to the EEC level. Also, on the demand side, we will see important changes. It seems likely that the Spanish consumer will probably start to desert olive-oil and consume more oil seed-oils instead since the price of olive oil will inevitably increase despite the consumption aid, and therefore the price relationship will further encourage Spanish consumption of oil seed-oils which is already considerable. Another factor contributing to this increase will be the abolition of the national protection scheme for olive oil. Similar changes tend to appear in the Greek market for olive-oil. The only ways such forces can be neutralised is through structural increase in the consumption of olive-oil by the north European countries, or an increase in EEC exports to third countries. Both measures do not at present look promising.

8.5.2 Table Olives and Olive Residue Oil

Over the period 1981-1986 (and in previous years too) Greece did not import olives of any type or category. Exports account for more than half (52%) of the total production Main countries which import Greek table olives are Italy, Rumania, Boulgaria, U.S.A, Yugoslavia, Lybia, Saudi Arabia, Canada and Egypt. Table 8.24 presents table olive exports during 1981-1986.

Table 8.24: Greek Exports of Table Olives over 1981-1986. (Quantity in tonnes, Value in '000 dr, current prices)

Year	Quantity	Value
1981	35,414	2,427,207
1982	39,826	3,272,612
1983	39,782	3,803,810
1984	37,738	4,269,834
1985	48,465	6,747,756
1986	59,615	9,561,157
Average of 6 - years	43,473	

Source: N.S.S.G, Exports - Imports, 1981-1986.

We observe that there has been an increase in the volume of exports for the last two reported years 1985 and 1986, while the average of the 6-year period is 43,473 tonnes. In 1985 exports increase by 28.4% compared with the previous year, while in 1986 they further increased by 23% compared with 1985. Table 8.25 shows the prices F.O.B for the three main types of table olives. All categories and types of green table olives, the black Conservolia type and the black Kalamon type are in demand. Also, the black Kalamon olives are sold at premium

prices because they are considered as the luxury type. To encourage exports, subsidies on top of the F.O.B price are given. Table 8.26 presents the national subsidies valid until 31/12/1986 and those applied since 1/1/1987 according to the type of the olive and the size of packaging. Apart from these subsidies until 31/12/1986 exporters of table olives received 5.5% return on the stamp duty and another 3% when the foreign currency was received. Since 1/1/1987, the respective amounts became 1.52% on the stamp duty and 3% with the arrival of the foreign currency. In 1988, the return on the stamp duty was set at 1,216 dr while the subsidy for importing foreign currency in the country was abolished.(65) All this happens in the context of the gradual abolition of the national price support scheme due to be completed in 1990.

World consumption of table olives between 1981/82-1984/85 was 730,000 tonnes,. The EEC-10 consumed 21.4% of this but since the accession of Spain and Portugal, the EEC-12 consumes about 33.5% of the total world consumption of table olives. The U.S.A. consumes 15.7%, Turkey 15.1%, Roumania 2.2% and Algeria 0.7% of the total amount consumed worldwide.(66) Table 8.27 presents annual consumption per capita of table olives in the most important consumer markets.

Table 8.27: Annual Consumption of Table Olives Per Capita (in Kgs)

Countries	Consumption	Countries	Consumption
Italy	1.7	Argentina	0.5
France	0.4	Roumania	0.3
Greece	3.0	Boulgaria	1.1
West Germany	0.07	Turkey	3.4
Spain	1.2	Morocco	0.7
Portugal	1.9	Syria	4.0
U.S.A	0.4	Egypt	0.2
Canada	0.4	Lebanon	4.0
Brazil	0.2		

Source: A.B.G, Department of Vegetable Production, 1986.

Consumption obviously does not coincide with incomes per head in the particular country. It depends more upon custom, since in some countries it is consumed as a basic dietary complement (Mediterranean countries, Arabia, Middle East) while in others, it is used as a starter (U.S.A, France, Canada, Germany). In a few countries it is not consumed at all (China, India, Japan). Table 8.28 shows consumption for the EEC-10 and EEC-12 over the period 1981/82 - 1984/85. Consumption in the EEC has remained almost constant since the changes in the years between are rather negligible. Italy, the largest consumer of table olives in Europe, makes up 37.3% of the total EEC-12 consumption (average 1981/82 - 1984/85) while it produces 18.3% of the total EEC-12 production. France also consumes 11.1% of the total while producing 0.5% of total production. Finally, Greece consumes 10.7% of EEC-12 consumption and produces 24.4% of the total EEC-12 production. On the other hand, the EEC-10 imports of table olives over the period 1981/82 - 1984/85 were 68.3 thousand tonnes, and exports were 55.6

thousand tonnes (see Table 8.5). Main importer countries of the European Community members are France (50% of total imports), Italy, Germany, Great Britain and Belgium. Imports for the EEC-12 were 68.3 thousand tonnes while exports were 158.9 thousand tonnes. The major exporter countries are Spain and Greece. They sell to the U.S.A, Brazil, Canada, Bulgaria and Rumania. The small rise in the last few years-of total world consumption resulted in an increase in exports from the EEC-12. It appears that population increases, improvements in the standard of living and effective marketing of table olives as well as the dual use of the product as a basic dietary complement or a luxury, are the factors contributing to the observed changes in demand.

The other important product of the olive industry is olive residue oil which, unlike table olives, is under the Common Organisation of the EEC market for oils and fats. According to the Council of Agricultural Ministers' decision of 1/7/1987, negative MCAs had to be imposed on the export of olive residue oil from 7/9/1987.(67) The system of negative MCA operates exactly the same way as for the olive-oil. Table 8.29 presents negative MCAs based on the currency exchange rate of the last week of June and according to tax classification and packing size.

Table 8.29: Negative MCAs on Olive Residue Oil from 7/9/1987
(In dr/kgr)

Tax Classification	Description	NMCAs Unpackaged	NMCAs Packaged
1507 AIc	Pure Olive Residue Oil	-39.60	-0.55
1507 aIIb	Blend of Olive Residue - Oil and Virgin Olive-Oil	-47.52	-8.47

Source: Ministry of Agriculture, YDAGEP, 1988

The amounts shown are not constant but vary according to the currency exchange rate at the date of import or export of the product. Concerning imports from third countries into the EEC, the amounts paid are the same as those in the case of packaged olive residue oil independently of the import packaging (i.e. less or over 5 lt). Table 8.30 presents exports of olive residue oil during 1976-1986.

Table 8.30: Exports of Olive Residue Oil during 1976-1986

Year	Quantity	Value	Year	Quantity	Value
1976	4,635	0.15	1981	4,751	196.31
1977	1,586	36.97	1982	7,861	406.47
1978	2,779	56.75	1983	26,152	1,857.37
1979	4,272	102.80	1984	26,771	2,285.34
1980	1,645	44.61	1985	16,457	1,675.39
			1986	47,389	6,331.35

Notes: 1. In Current Prices

Source: N.S.S.G, Exports-Imports, 1976-1986

We may observe that until 1982 exports moved at modest levels, averaging over the 7-year period only 3,900 tonnes. Since 1982 however, exports have showed a marked improvement and reached 47,400 tonnes in 1986, which is record high for Greek exports in that particular product. In 1985 exports fell compared with the two previous years, but this was the only year of exception. The largest part of Greek exports was absorbed by EEC member States (about 80% mainly by Italy). Other important markets for Greek exports outside the EEC are the Arabic counties which absorbed the total volume of exports in 1978 and 1980, and the COMECON countries - with Yugoslavia figuring to a smaller extent.(68)

The largest part of exported olive residue oil concerns unrefined (rather than refined) oil. During the period 1981-1986 the ratio between exports of refined and unrefined can be deduced from Table 8.31. Until 1986, imports were non-existent and domestic consumption was covered exclusively by domestic production 1981-86.

Table 8.31: Exports of Refined and Unrefined Olive Residue Oil
(In tonnes)

Years	Unrefined	%	Refined	%	Total
1981	2,966	62.4	1,785	37.6	4,751
1982	4,533	57.7	3,328	42.3	7,861
1983	17,605	67.3	8,547	32.7	26,152
1984	22,547	84.2	4,224	15.8	26,771
1985	15,856	96.3	601	3.7	16,457
1986	43,338	91.4	4,051	8.6	47,389

Source: N.S.S.G, Exports - Imports, 1981-1986.

Italy is the largest EEC market. The main supplier to both Italy and the other EEC member countries is Greece. But as Italy demands unrefined olive residue oil, it deprives the sector of a significant amount of value added which could be gained with the refining. Imports from third countries have increased in 1985 compared with 1983 by as much as 88.8%. Main supplier countries were Spain and Tunisia.(69) Table 8.32 presents the trade balance of olive residue oil in the EEC-10 over 1983-85.

Table 8.32: Trade Balance of Olive Residue Oil in EEC-10, 1983-1985
(In tonnes & million dr[1])

Years	Intra EEC Trade		Imports of EEC-10		Exports of EEC-10	
	Quantity	Value	Quantity	Value	Quantity	Value
1983	31,138	35,613	3,201	8,211	9,593	7,979
1984	26,854	30,100	5,914	4,007	28,524	22,109
1985	26,152	31,110	6,045	5,261	12,291	13,041

Notes: 1. In Current Prices

Source: Eurostat, Imports-Exports 1983, 1984, 1985

We can see that exports to third countries increased in 1984 by 197.3% compared with 1983, a reduction followed in 1985, but generally exports remained at levels higher than those of 1983. After accession of Spain and Portugal the EEC-12 cover about 95% of total world olive residue oil production (i.e. about 100,000 tonnes), and consume around 85% of world consumption. Italy is the largest producer with an annual average production of 40,000 tonnes. It consumes well in excess of that amount mainly as a blend of refined olive residue oil and virgin olive-oil. Standing second in both production and consumption is Spain. Its

annual average production is 35,000 tonnes and she consumes on average 28,000 tonnes p.a. Greece follows as a producer country.(70) Until 1987, the blend of olive residue oil and virgin olive oil was not available in the Greek domestic market in order to protect olive-oil consumption. From the Spring of 1987 though all restrictions were lifted.(71) It therefore appears that olive residue oil might well become another substitute for olive-oil. Until today the product has been virtually ignored by the Greek consumers.

8.5.3 Oil Seed-Oils

Finally, the trade in the oil seed-oils sector will be considered as any change occurring in this area is likely to influence the future pattern of consumption for olive oil. At present the domestic production of oil-seeds is insufficient to cover the needs for processing and production of oil seed-oils. In 1983/84, it was estimated that out of the total quantity of oil-seeds processed in Greek units, 38.9% was domestically produced and 61.1% imported.(72) Table 8.33 shows imports of soya-seed, cotton-seed, sunflower, sesame and linen-seed between 1982-1986. In Greece soya is not produced, therefore all quantity required for processing is imported. The Ministry of Commerce, in order to protect the consumer from adulteration, made the addition of sesame oil by 2.5-5% in all oil seed-oils compulsory. Therefore, pure sesame oil is not available but only as a small percentage in all seed oils marketed. In this manner the State control agencies can easily detect any adulterations.(73)

According to information presented in Table 8.34, in 1986 Greece imported from EEC countries only 2.6% of its needs.

Table 8.34: Suppliers of Greek Oil Seed Imports during 1982-1986

Countries	1982	1983	1984	1985	1986
EEC-12	88.0	40.4	49.2	95.3	5,128.8
Third Countries	137,541	193,085	66,971	179,692	191,874
Total	137,629	193,125	67,020	179,787	197,003

Source: **Derived from N.S.S.G Statistics, 1982-1986**

We may observe that he main bulk of Greece's imports made up of soya seed imports from the U.S.A and rather smaller amounts from other countries such as Honduras and Lebanon. Also, linen seed is not processed for linen seed oil but for industrial usage or as an animal feed. Imports of oil seed-oils in Greece over 1982-1986 are presented in Table 8.35. Since April 1986 imports of oil seed oils are not restricted as in previous years, so the most important measure for the protection of olive-oil has been abolished. Therefore, as Table 8.35 suggests the import of oil seed oils was negligible until 1984. In 1985 though imports doubled compared with 1984 and in 1986 tripled compared with 1985. The largest increase is observed in corn seed oil and sunflower oil. Imports mainly include unrefined products which are then processed, refined and packaged in the Greek manufacturing plants. Table 8.36 shows that the largest volume of oil seed oils imports comes from EEC member States - in contrast with oil seed imports. This is

because (as explained in Chapter Five) the EEC is deficient in oil seeds and has to import about half of its needs from third countries. The main supplier countries of oil seed oils to Greece are West Germany (soya oil), Holland, Belgium and Luxembourg (corn oil and sunflower oil).(74)

Table 8.36: Origin of Oil Seed Oils Imports during 1982-1986.
(In tonnes)

Countries	1982	1983	1984	1985	1986
EEC-12	925.8	1,735.4	930.9	4,228.8	15,308.6
Third Countries	97.4	810.8	1,044.6	508.3	935.1
Total	1,023.2	2,546.2	1,975.5	4,737.1	16,243.7

Source: Derived from N.S.S.G Statistics, 1982-1986

Greece is deficient in oil seeds and in order to cover its requirements has to take recourse to importing. Exports over 1982-1984 were negligible (a mere 49 tonnes in 1984 valued at 5,272,500 dr). But after that time there has been a significant increase in exports, 20,000 tonnes in 1985 and a record high in 1986 of 104,000 tonnes. The increase in 1985-1986 is mainly due to the domestic production of sunflower seed as 98% of exports consisted of this product.(75) The chief importers for Greek sunflower are France, Holland, Belgium and Italy (Table 8.37).

Soya oil is the main seed oil exported by Greece, while sunflower oil and cotton oil are also exported but in far smaller quantities. Table 8.38 presents Greek exports of seed oils over 1982-1986. We may observe that there is an increasing trend in the exports over 1982-1986 with the exception of 1985 when quantities exported were reduced compared with those of 1984. The largest market for Greek seed oils (soya oil) is provided by non-EEC countries - mainly Cyprus which absorbs 30%, followed by Egypt, Syria, Turkey and Yugoslavia. According to a Commission report in 1986, the EEC currently satisfies less than half of its requirements in seed oils. The ratio of self sufficiency in 1985 was about 47% as far as oils were concerned (apart from olive-oil). In 1985 the EEC imported more than 3 million tonnes of oils. Its policy therefore, is to encourage domestic production of seed oils. A system of subsidies is adopted by the EEC for some of the oil seed oils.(76) This consists of production aid and a guaranteed return on exports. For example, the average subsidy on vegetable seed for 1985/86 was 25.4 ECU/100 kgr and the return on exports ranged from 9 to 27 ECU/100 kgr. The average production aid for sunflower was 34.96 ECU/100 kgr. No return on exports were allowed since EEC is deficient in this particular oil seed. Production Aid for soya was, on average, 35.89 ECU/100 kgr.

The administrative arrangement for the determination of prices is conducted in the following manner. At the start of each marketing year an estimate is made of the harvest. Production Aid, the return on exports and the intervention prices are set using the relationship between the estimated production and the maximum of guaranteed quantity

the Community will pay production aid for, as a basis. The estimated production of vegetable seed in 1986/87 was less than this maximum and therefore the subsidy level was not reduced; while the estimated production of sunflower for the same year exceeded the maximum quantity guaranteed. As a result the subsidy was reduced by 2,918 ECU/100 kgs. EAGGF's expenditure on sunflower seed and vegetable seed was 982.8 million ECU in 1985, and increase of 60% compared with that of 1984. In 1986 expenditure was 1,549 million ECU. For soya seeds, expenditure amounted to 115.5 million ECU in 1985 compared with 32.8 million in 1984. In 1986 it increased further to 141 million ECU.(77)

Soya oil stands first in per capita consumption of the EEC member States with 3.9 kgr, while sunflower is second with 2.1 kgr. Table 8.39 presents the quantities of oils consumed in the ECC-10 and EEC-12 by category, proportion of each category to the total of oils, as well as consumption per capita for each of the categories of oils. We can see that the consumption of oil seed oils is the highest in total oils consumption of the EEC member States. Even in the southern countries where olive-oil is produced, oil seed oils consumption still stands in first position. The exception here is Greece where olive-oil retains, at least up to now, first place in consumer preferences.(78) The trade balance of oils in thousand ECU is presented in Table 8.40 for the period 1983-1985. Soya oil and vegetable oil are the main exported oils (38.1% and 44.3% of total exports in 1985). The increase in vegetable oil exports in 1985 is 101.4% compared with that of 1983, while the export of soya oil has kept constant. An increase in other oils' exports can also be observed and is to be mainly found in

sunflower oil and cotton oil - where exports of the former were tripled and exports of the latter increased by no less than 12 times in 1985 compared with those of 1983. Imports concern sunflower oil : in 1985 they made up 52.7% of total imported oils and represented 46.9% of their value.

We can also observe (Table 8.40) that the total trade balance of oils in the EEC is positive and increasing. However, this is mainly due to the export of soya and vegetable oils. All other imports of oils exceed their exports from the Community. We may conclude that since 1981 Greece has made an increasing contribution to inter and intra - EEC trade developments in seed-oils. This state of affairs seems destined to have a deleterious effect on the domestic olive-oil market if an effective national campaign to promote olive-oil is not undertaken soon.

Conclusions

Given the structural shifts taking place in the second stage processing of olive-oil which formed the basis of the previous Chapter, I have tried to show here how these changes influenced - and in turn were themselves affected by - new trends and tendencies in the marketing of olive-oil. Recent evidence suggests that while the consumption of seed-oils has increased dramatically inside Greece, that of olive-oil has experienced a downward pressure. Despite the rising awareness of the importance of a healthy, balanced and unprocessed diet - which would favour olive-oil above its new

competitors, it seems that only an energetic, sustained and imaginative promotional campaign based on the particular hygienic properties of unrefined virgin olive-oil (which currently accounts for over 80% of Greece's annual production) will be able to reverse this pattern of demand. Any improvement in the price ratio as between olive-oil and seed-oils would facilitate such a strategy but this is not enough. Broadcasting the undoubted virtues of olive-oil seems the only method of penetrating the retail market in the northern European countries- obviously a key target area. The main issue here is who should perform this task? Producer cooperatives would appear to be the logical candidates to undertake such a role. This is because olive producers themselves have the greatest incentive to sell the product and to supplement their income, especially in those rural communities with few alternative employment opportunities. For their part the big private enterprises with their international links have found it more profitable to be involved with seed-oils and the production of margarine - now at the expense of olive-oil. In addition to the cooperatives a supra-national institution seems also to be necessary. The natural choice here is surely the I.O.O.C which is well placed to promote the sale of virgin olive-oil.(79) In 1976, the I.O.O.C did in fact launch an initiative after a significant research effort. A number of specific promotional activities were conducted. The purpose was to better inform consumers of the importance of using natural oils in their daily diet, particularly virgin olive-oil.(80) Though some ground was gained, in my view no real breakthrough was achieved. In the final analysis unless the promoting agent reaches down to the mass of individual consumers in the rich Western markets - starting must the

EEC, success will be elusive. Time is not on the side of the olive interests and the producers and distributors of margarine and oil seed oils (some of whom also retain a presence in olive-oil) are likely to yield market share easily. Whilst a market niche for olive-oil will surely remain intact - especially in the rural areas of Greece itself, a question mark hangs over the long-term viability of this ancient industry.

References

1. See J. Thompson, Organisation in Action, (New York, 1967).

2. For a general statement of such strategies see ibid, and P. Doust, Marketing Management - Planning and Control, (London, 1986).

3. See J Thompson, 1967, op.cit.

4. Information obtained from the Department of Marketing of Ekleourgiki, 1988.

5. ibid.

6. Information obtained from the Ministry of Agriculture, Department of Information. Mr N. Sarros; Head of the Department put his figure, in an internal Ministerial Study which was completed in 1987.

7. See K. Konstaninou, "International Marketing of Olive-Oil", Eleourgiki, No. 8 May-June 1986.+

8. See P. Doust, Fundamentals of Marketing, (London, 1986).

9. Information obtained through discussion with Mr. A. Manatos, Head of the Marketing Department, Eleourgiki, 1988.

10. Information obtained in an interview with Mr. L. Melas, General Director, Elais, March 1988.

11. According to figures provided by the Ministry of Agriculture, YDAGEP, the three largest packing units, Elais, Minerva and Eleourgiki account for over 50% of the packaged olive-oil production, March 1988.

12. Information obtained in an interview with Mr V Evagellou, Head of Agrobusiness Department of A.B.G, 1989.

13. Ministry of Agriculture, Department of Information, 1988.

14. The information about the total oil-bank capacity of Eleourgiki was obtained from Mr. A. Kiriakoulako, Head of the Department of Supplies, Eleourgiki, 1988.

15. N.S.S.G, Monthly Statistical Bulletin, various years.+

16. Information obtained from the Ministry of Agriculture, E. Papamarkaki, Department of Marketing and Agrobusiness, 1988.

17. See EEC Reg. 1915/1987 and V Zambounis, Eleourgiki No. 12, 1987.

18. In Spain the average annual per capita consumption of olive-oil was estimated at 11.8 kgr. In Italy it was estimated at 4.8 kgr while seed-oils consumption was 0.9 kgr. Further, the Italian Export Organisation estimated that in the 1930s the average annual per capita consumption of olive-oil in Spain, Italy and Greece was 7.3 kgr. See Economiki Epetirida, 1983, p.148, N.S.S.G.+

19. N.S.S.G, Economiki Epertirida, 1939, p.130.+

20. Information obtained from the Institute of Trade and Commerce in Messenia, Export Records, 1930-1940.

21. See N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949).+

22. N.S.S.G, Economikes Epetirides, 1931-1939.+

23. Oral evidence through discussion with Mr Y. Xiloyiannis, PASEGES, 1988.

24. N. Lihnos, 1949, op.cit.

25. See P. S. Avdelidis, The Agricultural Cooperative Movement, (Athens, 1986).

26. Information obtained from Mr. Vasilopoulo, Head of the Marketing Department, Minerva, 1988.

27. Ministry of Agriculture, YDAGEP and Eleourgiki, Department of Marketing figures, 1988.

28. Per capita consumption according to YDAGEP is much lower in non-olive producing areas like Macedonia and Thrace. Here I should point out that the figure for total domestic consumption refers to annual purchases of olive-oil. The large increase in per capita domestic consumption therefore between 1939-1988, could be partly due to high unrecorded self-consumption by the producers themselves in the early years.

29. N.S.S.G, Monthly Statistical Bulletin, 1987, 1988.+

30. Eleourgiki, Department of Marketing and ABG, Department of Agrobusiness, Summer 1988.

31. See V Evagellou, Th. Apostolakos and K. Veziri, Analysis of Different Sectors of Agricultural Industries, (Athens, 1986).+

32. ibid.

33. Eleourgiki, Department of Marketing, information obtained in an interview with Mr. A. Manatos, 1988.

34. Eleourgiki, No.15, July 1988, p.18 and No.16, Nov. 1988 p.11.

35. Information on the aims and objectives of this system was obtained from the Ministry of Agriculture, Information Department, (Mr N. Sarros), in 1988.

36. ibid.

37. In that report the Greek support system for table olives is described and the Greek government's proposals are analysed. The report ends by asserting that the implementation of a common market organisation for table olives would result in:

    (a) a significant EEC-12 budget expenditure of 100 million ECU;

    (b) Technical difficulties in the market intervention for fresh or processed olives;

    (c) Problems of market stabilization through surplus disposal with the possibility of destroying the produce;

    (d) An intervention scheme would mean that Greek prices would be higher than other producer member States.

    In addition, the whole issue presented difficulties with regard to agreement with other EEC producer counties. Italy which was especially interested, Spain which is very well organised in this sector and France whose production is negligible compared to the others, all played a part in these deliberations.

38. Eleourgiki, No.15, July 1988 p.20.

39. ibid, and V Evagellou et.al 1986, op.cit.

40. Information obtained from th Ministry of Agriculture, Information Department, 1988.

41. See V Evagellou et.al, 1986, op.cit, p.61.

42. Information obtained from YDAGEP, 1988.

43. ibid.

44. Information and figures obtained from Ministry of Agriculture, YDAGEP, 1988.

45. ibid.

46. Information extracted from Sectoral Plan for Olive Products, 1987-1992, Ministry of Agriculture, Jan. 1988.

47. Olive-Oil is the only oil which has to be extracted from the middle part of the olive-fruit and it therefore has to bear a greater production cost in comparison with the seed-oils. See G. Balatsouras, The Olive-Tree, (Athens, 1986). p.462.

48. I.O.O.C, Feuille D' Information, various issues.

49. Information received from the Ministry of Agriculture, Department of Information, Summer 1988.

50. Of course this is only an example, limited as it may be because of the short time period involved, but it shows how olive-oil price increase is passed on to the consumer despite the consumption aid paid to the packers by the EEC.

51. H. Gravelle and R. Rees, Microeconomics, (London, 1981).

52. See W. A. Cohen, The Practice of Marketing Management, (New York, 1988).

53. See P. M. Chisnall, Strategic Industrial Marketing, (U.K, 1989).

54. ibid, and H. Thorelli and H. Becker, International Marketing Strategy, (New York, 1984).

55. Interviews wit the sample firms of Messenia Province, Messenia, Summer 1988.

56. Here I should point out that although the sample firms are found to be marginal suppliers to their Italian buyers, there might be Italian firms which are wholly dependent on Greek supplies.

57. Interviews with the sample firms of Messenia Province, Messenia, Summer 1988.

58. Information supplied by the Department of Marketing, Eleourgiki, 1987, and Ministry of Agriculture, Department of Information, 1988.

59. By these measures the State hoped that Italians would reconsider and buy packaged Greek olive-oil since export of unpackaged was restricted. This of course did not happen and the State lifted the restriction.

60. As mentioned earlier (Chapter Seven), the negative MCAs were implemented by the EEC in order to stop speculation because of currency deviation between the green and the current exchange rate. Speculation based on these differences cost the E.A.G.G.F considerable sums. Their implementation was also motivated by the wish to reduce the competitiveness of Greek oils (because of their relatively lower price) in the international markets.

61. Ministry of Agriculture, Department of Information, 1989.

62. I.O.O.C, Feuille D' Information, No. 620, 1/9/988.

63. See Table 8.21, I.O.O.C.

64. See EEC Reg. 3463/1987, Commission, L329/3 and EEC Reg. 814/1987 and 3170/1987.

65. Ministry of Agriculture, Department of Information, 1988.

66. Eleourgiki, 1988, 1989, various issues.

67. There are two issues concerning the imposition of NMCAs. The first concerns the relationship between the green and the current value of the ECU. The second concerns the process of decision making : i.e who decides the green value of the ECU for the national currency of each member State. The decision, as far as the second issue is concerned, is made after a general assessment of the overall economic situation of the particular member State is completed. If a deflationary policy is followed in a country, then the green currency value is appreciated; if not, it is depreciated. EEC Regulations concerning NMCAs:

    EEC Reg. 1677/85 (Modifications: 1889/87)
    EEC Reg. 3135/85 (Modifications: 590/86, 1442/87)
    EEC Reg. 1955/87, 1956/1987, 2391/87.

68. N.S.S.G, Imports-Exports, various years.+

69. ibid.

70. Eurostat, Agricultural Accounts, 1981-1988.

71. Ministry of Agriculture, Department of Information, 1988.

72. A.B.G, Department of Vegetable Production, 1988.

73. According to information received from YDAGEP, this measure was implemented in April 1985.

74. N.S.S.G, Imports-Exports, 1981-1986.

75. ibid.

76. See K. Parris and C. Ritson, EEC Oil seed Products Sector and the Common Agricultural Policy, (Kent, 1977) and Commission of the European Communities, The Situation of the Agricultural Markets, 1985-1989.

77. See Commission of the European Communities, The Situation of the Agricultural Markets, various issues.

78. Eleourgiki, No.16, Nov. 1988.

79. International Olive-Oil Council. In 1956 some olive producing countries signed an agreement for cooperation on olive-oil trade and research. In 1963, the member States of the I.O.O.C signed a long contract of 42 articles which specified the character of the Organisation. It included definitions and distinction of the different types and categories of olive-oil member States of the I.O.O.C. Today, apart from the EEC-12 countries, members of the I.O.O.C are Algeria, Egypt, Yugoslavia, Libya, Morocco, Turkey and Tunisia.

80. See C. Aravanis, "The Greek Islands Heart Study", Proceedings of the Third International Congress on the Biological Value of Olive-Oil. Hania, Crete and I.O.O.C (eds), 8-12 September 1980. Also see G Christakis, M. Fordyce and Kurtz, "The Biological Aspects of Olive-Oil", ibid, 1980.

Table 8.2: Exports of Greek Olive Oil by Country of Destination, 1932-1939

(In Metric Statires[1])

Countries	1932	1933	1934	1935	1936	1937	1938	1939
Germany	-	-	-	2494	7282	576	11234	7636
Bulgaria	1495	816	772	569	392	49	903	951
France	8955	6229	783	2441	513	60	34541	26,680
Britain & Ireland	27816	36523	8868	7308	4901	2730	13769	23,222
Italy	206441	114014	24417	37567	20309	37291	51061	57,252
Rumania	1667	2133	1742	2732	1325	276	2313	2083
Russia	-	1961	2564	929	295	-	-	-
Argentina	-	-	-	9001	7656	6634	17963	30,980
Brazil	-	-	-	10717	9589	726	815	322
U.S.A.	10463	27658	2308	18046	17560	13566	63176	125,520
Palestine	-	3599	927	14	9	-	-	-
Syria	-	9638	32	-	-	-	-	-
Lybia	3083	2839	978	273	38	-	_	-
Egypt	12136	16638	11269	8832	3940	2559	4688	5,809
Other	6220	9937	13173	10554	6485	2840	4794	7437
Total	278,276	231,985	67,833	111,477	80,294	67,307	205257	289,486

Notes: 1. One metric Statira = 100 kgrs

Source: N.S.S.G, Economiki Epetirida, 1934, 1938, 1939.

Table 8.3 : Olive Oil Consumption Patterns 81/82

Regions	Households in 000	Production of Olive-Oil in 000 tonnes	Consumption of Olive Oil in 000 tonnes				Consumption per Household in Lt.	% of the Average Consumption per Household-Index
			Packaged	Unpackaged	Self-Consumption	Total		
Greater Athens	992.4	-	18.4	23.6	-	42.0	42	66
Thessaloniki	258.0	-	4.6	7.9	-	12.5	48	75
Macedonia-Thrace	470.2	5	9.2	11.8	5.0	26.0	55	86
Central Greece	594.0	38	8.7	17.0	26.5	52.2	88	138
Peloponnesos-Islands	639.1	192	5.1	23.7	28.5	57.3	90	141
Total	2953.7	235	46.0	84.0	60.0	190.0	64	100

Sources: Production 1981/82. Ministry of Agriculture, National Statistical Service of Greece (N.S.S.G).

Table 8.4: Consumption of Olives, 1981-1986

(In thousand tonnes)

Years	Production	Imports	Exports	Apparent[1] Consumption
1981	75.5	-	35.4	40.1
1982	97.1	-	39.8	57.3
1983	74.6	-	39.8	34.8
1984	88.0	-	37.7	50.3
1985	85.3	-	48.5	36.8
1986	80.0	-	59.6	20.4
Average of 6 years	83.4		43.4	40.0

Notes: 1. During the last few years, the table olives kept in producers' storage rooms were taken to the mills for olive oil extraction because their quality had been impaired. So consumption shown is only apparent in the sense that the above fact is not taken into account.

Source: Ministry of Agriculture and N.S.S.G.

Table 8.5: World Trade Balance in Table Olives, Average of 1981/82-1984/85

(In thousand tonnes)

Countries	Stocks A[2]	Production	Imports	Supply	Consumption	Exports	Stocks B[3]
EEC - 10[1]	66.6	149.7	68.3	284.6	156.6	55.6	72.5
EEC - 12[1]	85.2	347.7	68.3	501.2	244.3	158.9	98.0
Tunisia	0.8	9.6	-	10.4	9.1	0.8	0.5
Morocco	2.2	47.5	-	49.7	17.2	29.3	3.2
Algeria	0.6	6.7	-	7.3	5.3	1.3	0.7
Turkey	34	107.5	-	141.5	110.6	7.1	23.8
U.S.A	23.8	70.2	46.9	140.9	114.3	1.9	24.7
Rumania	-	-	16.4	16.4	16.3	0.1	-
Other	16	161.9	77.2	255.1	212.6	24.3	18.2
Total[4]	162.6	751.1	208.8	-	729.7	223.7	169.1

Notes:
1. Intra EEC trade is included
2. At the beginning of the period
3. At the end of the period
4. Self sufficiency of the World is 102.9%, of the EEC -10 is 95.7% and of the EEC - 12 is 142.3%.

Source: I.O.O.C

Table 8.6(a): **Index of Wholesale Olives' Prices 1968-1983**

Year	Index (1970=100)
1968	100.85
1969	100.37
1970	100
1971	98.38
1972	98.35
1973	109.57
1974	141.32
1975	149.17
1976	171.29
1977	226.38
1978	268.35
1979	292.94
1980	341.61
1981	405.63
1982	476.06
1983	504.07

(b) **Comparison of the Producer Cost and Wholesale price Index**

Year	Wholesale Price Index (1970=100)	Producer Cost Index (1976=100)
1978	268.35	121.9
1979	292.94	146.4
1980	341.61	197.2
1981	405.63	243.4
1982	476.06	279.8
1983	504.07	349.1
1978-83	235.72	227.2

Source: **N.S.S.G, Department of Prices, 1988.**

Table 8.7: Intervention Prices to Olive Producers 1978/79 - 1986/87

(In dr/kgr)

Category	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87
Green	26	28	36	42	50	60.5	66	65	74
Black	32	36	41	50	60	71.5	84.5	80	91
Kalamon	36	42	50	63	85	94.5	102	105	120
Throumbes	26	28	34	43	50	60.5	80	85	92

Notes: 1. In Current Prices

Source: Eleourgiki, Department of Marketing 1988

Table 8.8: EEC Prices for Olive Residue Oil 1982/83 - 1987/88

	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
Intervention Price In dr/kgr	77.09	86.02	94.71	107.07	108.79	115.57
Production Aid	8% on top of olive oil production aid					
Consumption Aid In dr/100 kgr	Since 6/5/82 829.4	Since 1/11/82 1952	Since 1/11/84 3770.89	Since 16/3/85 2829.1	Since 21/5/86 6330	Since 1/11/87 10330
	Since 17/5/82 843.7	Since 21/11/83 2856.6		Since 1/11/85 5046.6	Since 1/11/86 9910.2	

Source: Ministry of Agriculture, YDAGEP, 1988.

Table 8.12: Data Used in Estimating the Greek Olive-Oil Demand Function, 1958-1988

Consumption[1]	P.D.Y[2]	Population[1]	R.O-O Prices[3]	R.S-O Prices[4]
106.3	105.748	8173.129	55.4	62.91
124.4	107.789	8252.162	58.2	62.78
126.7	112.144	8327.405	58.9	69.37
123.3	124.825	8398.050	59.9	70.77
157.8	130.218	8448.233	62.0	71.13
129.9	141.941	8479.625	72.3	77.46
135.9	155.251	8510.429	74.7	75.83
140.9	171.094	8550.333	79.3	80.02
146.7	182.171	8613.651	82.5	81.28
148.6	192.496	8716.441	83.5	80.88
153.1	203.809	8740.765	86.7	86.85
165.0	221.332	8772.764	92.9	93.25
185.8	240.023	8792.806	100.0	100.00
182.3	267.289	8831.036	103.2	106.44
177.0	288.887	8888.628	103.2	106.92
185.9	322.477	8928.086	129.8	119.46
182.0	301.575	8926.023	182.7	156.60
181.0	320.728	9046.542	205.8	168.92
180.4	337.100	9167.000	201.9	181.84
186.4	792.090	9308.479	203.5	206.00
190.0	947.199	9429.959	279.8	261.25
201.7	1154.845	9548.300	326.9	281.15
200.0	1390.332	9642.500	387.8	330.35
205.6	1764.024	9729.400	403.8	376.36
190.0	2159.825	9789.500	468.9	376.56
200.0	2528.591	9846.600	560.6	464.57
190.0	3098.661	9895.800	740.4	548.97
200.0	3844.099	9934.300	793.3	630.17
190.0	4498.646	9965.800	896.8	635.29
190.0	4827.732	9990.000	839.1	584.19
200.0	5246.204	10030.000	881.4	601.99

Notes:
1. Consumption in thousand tonnes and Population in thousand.
2. Personal Disposable Income in th.dr current market prices.
3. Retail Olive-Oil Prices with base 1970=100
4. Retail Seed-Oils Prices with base 1970=100

Sources: N.S.S.G, National Accounts, Statistikes Epetirides and Monthly Statistical Bulletin, various years.
Ministry of Agriculture, Department of Information.
O.E.C.D, Economic Indicators, various years.

Table 8.13: Results of the Greek Olive Oil Demand Fucntion, 1958-1988

Dependent Variable: LC_t

C	LY_t[2]	LP_t[3]	LPS_t[3]	LPO_t[4]	$LPSO_t$[4]	LC_{t-1}	TIME	R^2	D.W
1. 5.24	-0.09	-0.49	0.42			0.03	0.04	0.91	2.15
(5.5)[1]	(-1.6)	(-2.8)	(2.1)			(0.17)	(4.4)		
2. 4.86	-0.10	-0.50	0.44				0.04	0.91	2.10
(11.8)	(-1.9)	(-3.3)	(2.4)				(8.5)		
3. 5.07	-0.07			-0.31	0.45		0.03	0.92	2.3
(32.8)	(-1.7)			(-1.7)	(3.0)		(5.1)		

Dependent Variable: $L\left(\frac{C}{N}\right)_t$

C	$L\left(\frac{Y}{N}\right)_t$	LP_t	LPS_t	LPO_t	$LPSO_t$	LC_{t-1}	TIME	R^2	D.W
1. -4.5	-0.11	-0.45	0.37			0.01	0.04	0.82	2.1
(-5.0)	(-1.9)	(-2.6)	(1.8)			(0.07)	(4.1)		
2. -4.5	-0.11	-0.46	0.37				0.04	0.82	2.1
(-7.9)	(-2.2)	(-3.0)	(2.0)				(7.7)		
3. -5.3	-0.10			-0.3	0.42		0.03	0.83	2.2
(-11.3)	(-2.4)			(-1.6)	(2.8)		(4.6)		

Notes:

1. The numbers in parentheses are t-statistics.
2. Personal disposable income with base year 1970=100
3. P_t is the price of olive-oil and PS_t is the price of substitute seed-oils. Both series are expressed with base year 1970=100.
4. Real olive-oil price, PO_t and real seed-oils price PSO_t i.e deflated by the Retail Price Index with base 1970=100.

Sources: N.S.S.G, National Accounts, Statistikes Epetirides, and Monthly Statistical Bulletin, various years.

Ministry of Agriculture, Department of Information.
O.E.C.D, Economic Indicators, various years.

Table 8.15: Export Markets for Greek Olive Oil, 1968-1982
(In tonnes)

	France	Belgium & Luxemburg	Holland	West Germany	Great Britain	Denmark	Italy	Total EEC	% of EEC in Total
1968	4	-	4	96	33	-	31,707	31,844	91.6
1969	4	-	4	85	43	-	9,087	9,223	82.3
1970	-	3	-	103	43	-	72	221	6.8
1971	-	7	-	179	63	-	214	463	12.3
1972	2	1	2	157	60	3	7,900	8,125	85.6
1973	3	2	3	101	36	5	2,442	2,592	71.6
1974	215	2	2	56	41	1	1,115	1,432	25.5
1975	7	18	37	64	128	11	5,145	5,410	50.3
1976	452	6	25	30	182	8	9,575	10,278	80.5
1977	1	1	1	27	107	3	914	1,054	37.3
1978	1,031	14	5	64	293	9	47,127	48,543	93.4
1979	205	2	5	82	322	11	16,023	16,650	72.2
1980	10	8	8	76	400	9	5,397	5,908	56.1
1981	1,158	4	4	76	433	15	3,430	5,120	62.9
1982	15,665	11	37	107	423	13	8,737	24,993	74.3

Source: N.S.S.G, Exports-Imports, 1968-1982.

Table 8.17: **Production, Consumption, Imports and Exports of Olive-Oil, 1968/69 - 1983/84**

	PRODUCTION				CONSUMPTION				IMPORTS				EXPORTS			
	68/69 71/72	72/73 75/76	76/77 79/80	80/81 83/84	68/69 71/72	72/73 75/76	76/77 79/80	80/81 83/84	68/69 71/72	72/73 75/76	76/77 79/80	80/81 83/84	68/69 71/72	72/73 75/76	76/77 79/80	80/81 83/84
Greece	155	192,5	214,5	280	162,8	162,8	188,4	201,4	6,8	2,9	-	-	8,3	6,8	23,2	56,6
Italy	474	413,1	395	521,6	580,9	504,7	471,8	630	116,2	109,5	110,5	99,9	15,5	15,4	16,9	47,4
France	2,3	1,7	1,8	1,8	21,1	18,8	21,2	26,2	27,4	26,9	28,4	34,2	8,6	8,1	8,0	13,0
Spain	417,1	416,5	429,2	415,3	300,1	296,6	325,6	362,5	0,7	-	-	-	130,5	93,8	105,1	51,8
Portugal	58,4	48,1	40,5	39,5	61,1	50,5	39,0	39,5	11,6	7,1	2,6	3,2	9,7	4,2	2,2	3,0
EEC North	-	-	-	-	7,7	6,3	6,7	7,5	7,9	6,6	7,6	8,2	0,2	0,4	0,9	0,7
EEC-9	476,3	414,8	396,8	523,4	609,7	529,8	499,7	663,6	151,5	143,1	146,5	142,3	24,3	23,9	25,9	61,0
EEC-10	631,3	607,3	611,3	803,4	772,5	692,6	688,1	865,0	158,3	146,0	146,5	142,3	32,6	30,7	49,1	117,6
EEC-12	1106,8	1071,9	1144,0	1258,2	1133,7	1039,7	1052,7	1267,0	170,6	153,1	149,1	145,5	172,8	128,7	156,4	172,4
World	1408,4	1446,9	1415,8	1612,2	1429,1	1355,0	1439,8	1626,7	270,8	245,7	268,4	270,4	270,7	248,5	268,0	293,3

Source: I.O.O.C.

Table 8.18: Exports of Olive-Oil, 1975-1986

(Quantity in tonnes and Value in million dr)

Year	Quantity	Value	Value (In 1975 prices)
1975	10,762	662.2	100
1976	12,671	554.8	83.8
1977	2,823	161.6	24.4
1978	51,953	2168.8	327.5
1979	23,055	1346.8	203.4
1980	10,538	989.5	149.4
1981	8,145	950.8	143.6
1982	41,504	4241.2	640.5
1983	147,519	20663.8	3120.5
1984	108,418	16681.3	2519.1
1985	53,621	9714.0	1466.9
1986	66,730	19479.0	2941.5

Source: N.S.S.G, Exports-Imports, 1975-1986.

Table 8.21: World and EEC Consumption of Olive Oil 1975/76-1984/85
(In thousand tonnes)

Countries	1975/76	1976/77	1977/78	1978/79	1979/80
Italy	400.9	415.8	450	500	521.5
France	19.5	20.7	21.8	20.6	21.5
Greece	172	172	180	201.7	200
Other	4.9	6.4	5.8	7.0	7.6
EEC-10	597.3	614.9	657.6	729.3	750.6
Spain	278.2	294.3	328	330	350
Portugal	46.1	43.3	34	38.9	39.8
EEC-12	921.6	952.5	1019.6	1089.2	1140.4
Turkey	77.3	90	100	100	90.8
North Africa	131.5	144.9	155.6	122.4	119.4
Middle East	65.2	66.1	67.7	70.0	65.7
Other	84.4	86	94.3	86.5	88.9
World Total	1280	1339.5	1437.2	1477.1	1505.2

Source: I.O.O.C

Table 8.25: F.O.B Prices of Olives (In U.S dollars per tonne), 1979-1985

Category and Type of Olive	1979	1980	1981	1982	1983	1984	1985
Green Jumbo Type 181-200 olives/kgr	1080-1120	1200-1220	1100-1200	1000-1100	900-1000	700-850	700-800
Black Konservolias Jumbo Type 180-200 olives/kgr	1300-1340	1300-1350	1300-1400	1200-1300	1150-1200	950-1050	850-950
Black Kalamon Jumbo Type 181-200 olives/kgr	1510-1530	1700-1750	1700-1750	1650-1700	1500-1600	1100-1300	1100-1100

Source: A.B.G, Department of Vegetable Production, 1988.

Table 8.26: National Subsidies on Olive Exports

Category and Size of Packaged Exported Olives	Percentage of the Subsidy, Until 31/12/1986	% F.O.B Price From 1/1/1987	
		Exported to EEC countries	Exported to Third Countries
All Types of Green Olives			
- Packaged in Containers of up to 5 kgr net weight	24	10.8	14.4
- Packaged in Containers above 5 kgr net weight	20	9.0	12.0
All Types of Black Olives			
- Packaged in Containers of up to 5 kgr net weight	20	9.0	12.0
- Packaged in Containers above 5 kgr net weight	16	7.2	9.6

Source: Ministry of Agriculture, YDAGEP, 1988.

Table 8.28: Consumption of Table Olives in the EEC-10 and EEC-12, 1981/82-1984-85

(In thousand tonnes)

Countries	1981/82	1982/83	1983/84	1984/85	Average
West Germany	8.8	9.6	8.8	9.0	9.0
France	25.2	27.5	27.8	28.0	27.2
Britain	1.9	1.9	2.1	2.2	2.0
Italy	95.0	90.0	90.0	90.0	91.2
Greece	21.0	28.0	26.0	30.0	26.3
Other	0.8	0.7	8.8	0.8	0.8
Total EEC-10	152.7	157.7	155.5	160.0	156.5
Spain	69.0	71.0	70.0	70.0	70.0
Portugal	17.7	17.7	18.0	18.8	18.0
Total EEC-12	239.4	246.4	243.5	248.8	244.5

Source: A.B.G, Department of Vegetable Production, 1988

Table 8.33 : Imports of Oil Seeds, 1982-1986 (Quantity in tonnes and value in 000dr)

	1982		1983		1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Soya Seed	118680	2011037	170134	4062062	48311	1748236	151692	5356408	142897	4665896
Cotton Seed	5357	72442	7491	137412	8288	217843	17059	416367	36553	667758
Sunflower Seed	2981	62322	5005	117965	69	20880	456	67778	4221	353649
Sesame Seed	7213	370544	7243	482330	8385	794132	7311	882539	6963	817576
Linen Seed	3398	87045	3252	82381	1967	72953	3269	147955	6369	2205
Total	137629	2603390	193125	4882150	67020	2854044	179787	6871047	197003	6507084

Source: N.S.S.G, Imports-Exports, 1982-1986

Table 8.35: Imports of Oil Seed Oils, 1982-1986

(Quantity in tonnes, value in 000dr)

	1982		1983		1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Soya Oil	274.5	11768.8	710.9	42112.7	781.3	80285.2	1237.6	153381.6	2907.4	212791.1
Cotton Oil	1.5	78.9	0.5	98.3	0.2	120.6	0.4	80.2	4.2	495.3
Sunflower Oil	52.3	1872.7	-	-	0.2	77.1	1002.0	117,329	3359.9	264181.6
Corn Oil	694.9	41532.9	1834.8	106014.4	1193.8	111612.6	2497.1	318389.8	9972.2	1001083
Total	1032.2	55253.3	2546.2	148225.4	1975.5	192095.5	4737.1	589180.6	16243.7	1478551.1

Source: N.S.S.G, Imports-Exports 1982-1986

Table 8.37: Importers of Greek Oil Seeds and Oil Seed Oils' Exports, 1982/1986

(Quantity in tonnes)

	OIL SEEDS					OIL SEED OILS				
	1982	1983	1984	1985	1986	1982	1983	1984	1985	1986
EEC Countries	3328.5	1149.7	833.8	2000	2005.2	21.2	30	11.5	19936.5	102239
Other Countries	22446	27287.1	38632.3	31312	45061	7.0	12	37.7	138.9	1818.9
Total	25774.5	28436.8	39466.1	33312	47066.3	28.2	42	49.2	20075.4	104058.0

Source: N.S.S.G, Imports-Exports, 1982-1986.

Table 8.38: Exports of Oil Seed Oils, 1982-1986

(In tonnes and thousand dr.)

	1982		1983		1984		1985		1986	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Soya Oil	22,355.4	879476.1	27816.1	1777069.9	37480.9	3159495.5	33297.8	3219401.2	43254.4	2424705.9
Cotton Oil	-	-	0.3	54.4	0.1	12	13.8	2785.6	2505.1	255229.4
Sunflower Oil	0.5	47.5	-	-	1500.3	119985.9	-	-	1300.2	108356.2
Corn Oil	3418.6	191748.1	620.4	50666.7	484.8	42432	0.6	132.8	6.6	1508.8
Total	25774.5	1071271.7	28436.8	1827791	39466.1	3321925.4	33312.2	3222320	47066.3	2789800.3

Source: N.S.S.G, Imports-Exports, 1982-1986

Table 8.39: Analysis of Oils Consumption in the EEC

Average 1977-80

Countries	Total Consumption in Tonnes					Consumption of Each Category/Total, %					Per Capita Consumption, in KGR				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
Italy	716	500	97	125	1438	49.8	34.8	6.7	8.7	100	12.6	8.8	1.7	2.2	25.3
EEC-North[1]	2624	28	1293	1455	5400	52.8	0.5	25.9	29.1	100	12.7	0.1	6.3	7.1	26.2
Greece	48	193	6	16	263	18.2	73.4	2.3	6.1	100	3.2	20.8	0.6	1.7	28.4
EEC-10	3388	721	1396	1596	7101	47.7	10.1	19.7	22.5	100	12.4	2.6	5.1	5.9	26
Spain	363	360	11	42	776	46.8	46.4	1.4	5.4	100	10.1	10	1.2	1.2	21.6
Portugal	97	42	6	15	160	60.6	26.3	3.8	9.4	100	11	4.8	0.7	1.7	18.2
EEC-12	3548.6	1123	1413	1653	8037	47.9	14	17.6	20.5	100	12.1	3.5	4.5	5.2	25.3

Notes: 1. EEC-10 without Italy and Greece

A : Oil Seed Oils
B : Olive Oil and Olive Residue Oil
C : Butter and Lard
D : Margarine and Other Animal Fats
E : Total of A+B+C+D

Source: EEC and Eleourgiki

Table 8.40: Trade Balance of Oils in the EEC 1983-85 (Value in '000 ECU)

Oils	1983			1984			1985		
	Imports	Exports	Balance	Imports	Exports	Balance	Imports	Exports	Balance
Soya	12.2	222.3	210.1	27.9	341.0	313.1	9.8	331.8	322.0
Sunflower	59.5	26.0	(33.5)	149.5	73.8	(75.7)	149.6	91.5	(58.1)
Vegetable	15.7	126.5	110.8	22.8	281.4	258.6	13.2	347.2	334
Cotton	5.5	0.3	(5.2)	11.3	6.2	(5.1)	10.3	6.4	(3.9)
Corn	33.9	26.5	(7.4)	58.2	44.1	(14.1)	69.1	47.9	(21.2)
Linen	53.2	26.4	(26.8)	79.5	32.5	(47.0)	67.3	53.1	(14.2)
Total	180.0	428.0	248.0	349.2	779.0	429.8	319.3	877.9	558.6

Source: Eurostat, Imports-Exports, 1983, 1984, 1985

CONCLUSION

This study has been concerned with an analysis of the socio-economic processes which underly the development of the Greek olive industry. Because this industry is so widely diffused, my attempt to understand its workings has been made in the context of social as well as economic considerations. Special attention has been given to recent structural and organisational changes due to Greece's accession into the EEC. Under the umbrella of rural industrialization my analysis has highlighted the inter-relations of the different parts of the industry. An attempt has been made to show how capital intervenes at as many points as possible between production and consumption to maximise its control. In order to identify recently accelerated processes in the specific context of the long-run path of capitalist development I examined the structural and organisational response of the industry to change.

The argument put forward in the first part of the thesis, which has concentrated on the rural sector, is based on the recent experience of olive growing in response to accession of the EEC. In order to identify the main trends which characterise the process of development in olive growing, primary data was used. This was derived from two olive producing villages of Messenia province, those of Avia and Coryfasi. While their long-run economic development has been slow, constrained by a number of political and socio-economic factors, recent changes due to the imposition of the EEC regime decisively influenced the structure of production and the mode of organisation. In

particular, it has been shown that two of the alternative lines of development are currently underway in olive growing. On the one hand, development is taking place through accumulation by larger farmers who are seeking to mechanise production (thus reducing their dependence on wage labour) while sustaining - as far as possible - the quality of the produce. On the other hand, capitalist small market-oriented farmers are engaging in the capitalist process through cooperation. Although the argument is underpinned by the findings of my investigation into the experience of the two villages, published data on a national level supports the view that these observations are not isolated phenomena. Instead they represent processes already in train. However, as these processes are still unfolding today, it is clearly difficult to offer predictions about the direction of events in the years to come.

This discussion of the impact of the EEC suggests that the growth of the productive forces in the rural sector, including agriculture and the primary transformation of the olive, has been aided by deliberate policy decisions in the context of the C.A.P. In particular policy makers have attempted to solve the social problem of low farm incomes with improved technology and price support systems. It is claimed that the main aim of supporting agricultural prices is to reduce income disparity between farmers and non-farmers. However, in reality, rising product prices have tended to raise income only in the short-run. The long-run effects are complex and have been questionable on several counts. If the generation of a more equitable pattern of income distribution is a key policy objective in the European Community, a more effective policy might consist of direct income transfers to low

income farmers, rather than price support schemes. Furthermore, oral evidence obtained in interviews with cultivators convinced me that the growth of part-time farming in these areas is not due to more people entering olive growing (a possible consequence of the prices support system); rather it is the result of full-time farmers finding alternative jobs to supplement their farm incomes. Even though farm restructuring has taken place in the form of larger size farms in irrigated flat and semi-mountainous areas, the most widespread consequence of agricultural change in the olive sector is the formation and growth of farmer cooperatives. They are primarily marketing cooperatives and their rapid growth was based on government support. Their presence in the industry (as a form of social organisation of production) seems important as a defence of producers' incomes, but certain endogenous weaknesses within the movement do not allow them to act as dynamic vehicles for a cost effective restructuring of olive cultivation. The majority are regionally independent small olive cooperatives with a pronounced lack of management skills, and few obvious direct channels for export.

On the issue of inter-relations within the olive industry, the following processes have been identified. First, the links of the rural processing units with the "upstream" industry which supplies them with technological equipment have created conditions for the establishment of manufacturing units within Greece. One of the most successful attempts was a firm, producing oil-mill equipment, built by Eleourgiki in Crete. Other, private ventures, are more modest in size and scope but nevertheless have emerged within the last decade.

However, most of the oil-mills are still dependent on Italian technology which they acquire through Greek agencies acting on behalf of the foreign firms.

Secondly, the links with the "downstream" industry or the second stage processors are relatively newly established in the sense that most processors come into contact with the mills, through the olive-mediators. The mediators only ten years ago acted independently in the olive-oil trade; but now some of them - with special reference to the province of Messenia - have established a form of "spoken" contract with the oil-millers so that they are regularly supplied with given quantities of olive-oil. Such an arrangement helps the processors in dealing with the export market. This is a form of vertical integration found in the private sector. Even though the processors do not become involved in rural processing themselves, through their links with oil-millers they are guaranteed a regular minimum supply of olive-oil to meet their requirements. The same form of vertical integration can be found in the cooperative chain. The second-stage processing cooperatives buy the required quantities of olive-oil form their member oil-mills. The difference is that they also guarantee to buy from their members any quantities of olive-oil which cannot be sold in the market. This means that the olive-oil, once bought by the processors, will be stored until a suitable buyer is found. Interest payments as well as a lower selling price because of deteriorating quality of the stored produce, result in additional burdens on the second stage processing cooperatives which have further impaired their financial base.

The argument put forward in the second part of the thesis reflects the processes generated during the transformation of the Greek olive industry into a part of an integrated European food industrial system. On the one hand, we have seen concentration of output and economic power into the hands of Eleourgiki and the subsidiaries of two multinational corporations, Elais and Minerra. Both companies have a long tradition in the world markets of seed-oils, margarine, soap and detergents. Nevertheless, they entered the Greek market through acquisition of well-known olive companies. Since the early 1980's they supply the domestic market with olive-oil as well as seed-oils - mainly corn and sunflower oils. Elais became directly involved in the production of sunflower seeds in Macedonia and then followed this by processing, storing, packaging and marketing of the produce. Gradually, these highly profitable institutions have created conditions in the domestic market through heavy advertising, which has allowed them to shift away from olive-oil production, (due to high input costs) into seed-oils production.

The immediate endogenous response of the olive producers to the entry of the multinationals, was the growth and strengthening of Eleourgiki (based upon government support), the largest rival of the private sector. We have seen though that Eleourgiki, in an attempt to cover its financial liabilities due to its price support policy operations, has recently entered the seed-oils market. On the other hand, this trend towards concentration was combined with a process of expansion and creation of small units which operate in specific market niches. This expansion reflected an entrepreneurial desire to take

advantage of EEC directives concerning subsidies on packaged quantities of olive-oil and exports. My investigation into a representative sample of firms has shown that their operation and profitability is unquestionably based squarely upon EEC support schemes and tax evasion practices. Therefore, this expansion can be seen as temporary; indeed as such support schemes are gradually withdrawn the future of the small firms in the olive industry is in serious doubt.

Our consideration of the final part of the industrial chain includes distribution and marketing activities. We have seen that recent changes in the distributive methods aim at selling olive-oil as close to the consumer as reasonably practical, that is the packers try to retain control as far down the distribution channels as possible. The way in which they try to achieve this is through branding and advertising. On the demand side, the pattern of consumer expenditure on olive-oil has been changing in response to heavy advertising, modernisation and the general rise in incomes. Overall, total consumption demand has remained the same over the last ten years with a decreasing trend since the early 1980s. This trend goes hand in hand with domestic production, and the promotion of seed-oils at prices twice or three times below that of olive-oil. In the export market, the majority of olive-oil is exported to Italy. The reason is that the markets of Western Europe, already dominated by the Italian oils, do not seem to be particularly well informed about the biological superiority of Extra Virgin Greek oil, and people are used to the taste of blended Extra and Refined olive-oil. Yet the Italian packers, taking advantage of their dominance over Greek exporters, can dictate

their own rules and "tighten up" the subordination of the Greek processors. Furthermore, the expansion of the European Community to incorporate Spain and Portugal means that Greece now has to compete with cheaper olive-oil surplus in the domestic as well as in the export markets.

Our analysis has offered a number of conclusions all pointing towards the eventual contraction of the Greek olive industry into a more cost effective and certainly more fully integrated part of the European food industry. The contradictory nature of the development process, and the conflict and struggle between the different interest groups in the olive sector and the Greek economy has been emphasised throughout. The natural mediator between these interests - the State- has pursued policies which have clearly affected access to the means of production and the process of accumulation. However, I should like to point out that the transformation of the olive industry currently under way is likely to change irreversibly the entire character of this ancient activity.

Appendixes to Chapter Three

1. Questionnaires* Used for the Collection of Field Data.

A. Farmer

Village .....

Date of Interview .....

1) Serial No. .....

2) Status

a)..... b)..... c).....

3) Holdings

a)	Total Holdings	.....	stremma
b)	Rented Out	.....	"
c)	Rented In	.....	"
d)	Types of Irrigation	.....	"
e)	Crops Grown	.....	"
f)	Area Under Olives	.....	"
g)	Who Operates the Farm?	Self Family Members Hired Labour	
h)	Type of Cultivation	.....	

4) Production

a) Total Production of Olive-Oil during the Season .....kgrs

b) Retained for Home Consumption .....kgrs

c) Marketed Surplus .....kgrs

d) Wages Paid .....Drs

e) Total Costs of Production (including all expenses incurred for one kgr of olive-oil). .....Drs/Kgr

5) Labour

a) Do you hire in Labour Yes ..... No .....

b) Do you hire out labour Yes ..... No .....

6) Family

a) Total no. of family members .....

7) Education and Experience

a) Describe the level of your education obtained .....

b) Age ..... years

c) Farming experience .....years

8) Initial Capital

a) Cash money .....Drs

b) Land .....Stremma

9) Origin/Sources of Capital

a) Inherited cash money .....Drs.

b) Inherited Land .....Stremma

c) Loan from non-institutional sources .....Drs

d) Loan from institutional sources .....Drs

e) Any other source .....Drs

10) Method of Buying Agricultural Inputs

a) Purchase through Cooperatives .....percent

b) Purchase through merchants .....percent

c) Miscellaneous methods .....percent

11) Price Determination

a) How is the price of olive-oil determined at the time of sale?

By open bargaining
By Auction
By Contact
Fixed price by Government

b) Do you receive Government fixed price of olive-oil if you sell olive-oil to an agency or an individual other than the government. Yes ..... No.....

c) If no, please state if you receive a better price .....

12) Sales

Distribution Channels

a) Olive merchants .....kgrs

b) Cooperative .....kgrs

c) Oil-Miller .....kgrs

d) Retailers .....kgrs

c) Government Agency .....kgrs

Total quantity sold .....kgrs

13) Borrowing and Credit System

a) Do you obtain a loan? Yes ..... No. .....

b) Do you pay interest on the loan? Yes ..... No. ....

c) If you obtain a loan give the following information

Money	Sources	Interest Rate	Purpose

d) Do you sell olive-oil to traders or the cooperative from whom you borrow? Yes ..... No. .....

e) Do you offer price concessions to money lenders when you sell your commodity? Yes ..... No. .....

If yes, how much concession do you give to your financier?

f) Do you encounter difficulties in obtaining government loan Yes ..... No. .....
If yes, describe the difficulties.

14) Transportation

a) What are the means of transportation used by you in the marketing of olive-oil?

b) Do you have your own transportation or do you hire it?

Own ..... Hire it .....

15) Weight and Measures

a) Do the buyers of your olive-oil and olives or those responsible for the weighment in the marketing use approved weights and measurements?

Yes ..... No. .....

b) If no, roughly how much excess olive-oil per Kgr do you have to give due to defective measurements and weights? Please state. .....Kgr.

16) Market Information

a) Do you get market information? Yes ..... No. .....

b) If yes, through which means? Radio ..... T.V .....

Newspapers ..... Other .....

17) Please describe your problems in the marketing of olive-oil.

.....

B. Oil-Miller/Merchant/Processor

Village/Town .....

Date of Interview .....

1) Serial No. .....

2) Business History

a) Date of start of your business

b) The firm is owned by: Individual ..... Family .....

Partnership .....

c) Initial starting total capital drs .....

d) Sources of origin of capital

(i) Inherited .....drs

(ii) Non-institutional loan .....drs

(iii) Institutional loan .....drs

(iv) Others .....drs

3) Which other commodities do you deal in? .....

.....

4) Family

a) No. of dependents .....

5) Education and Experience

a) Describe the level of your education obtained .....

b) Age .....years

c) Experience in the present trade .....years

6) Money Lending and Borrowing

a) Money Borrowed .....drs

Money	Sources	Interest Rate	Purpose

7) Employment in the Firm

a) Family labour No. ..... Job Description .....

b) Non-family labour No. ..... Job Description .....

8) Property

a) Do you have other property? Yes ..... No.....

b) If yes, give details .....

9) Price Determination

a) How is the price of olive-oil determined when you buy it?

(i) By bargaining .....percent

(ii) By auction .....percent

(iii) By contract .....percent

(iv) Other .....percent

b) When you sell olive-oil

(i) By bargaining .....percent

(ii) By auction .....percent

(iii) By contract .....percent

(iv) Any other .....percent

10) Purchase and Sale

a) From whom do you buy olive-oil? .....

b) Whom do you generally sell olive-oil to? .....

11) Credit System in the Trade

a) Do you buy olive-oil on credit? Yes ..... No. .....

b) Do you sell on credit? Yes ..... No. .....

If yes, for how many days? .....

12) Market Information

a) Describe the sources of your information .....

13) Personal observations of the interviewer .....

* The Questionnaires are adapted in part from M.S Kamdar Agricultural Marketing and Argarian Relations in Pakistan: A Case Study of the Nawabshah District, Sind, Unpublished Ph.D thesis, University of Salford, 1987.

2. Zaccaria Bembo's Report+

20 June 1712 A.D. to the distinguished Mr Corder

Information on the quantity of oil which can be produced from the olive trees in this region, based on past experience, distinguishing between that consumed in this region, that collected by land from elsewhere and that distributed overseas, with reference to the total produced in 1711 and that which remains to be distributed as below and already mentioned.

Given that there is an abundance of olive trees in this area, planted both by the administration and by Greek natives, it appears at first sight that there must be an excessive amount of oil production in relation to the number of trees, but when one considers the very obvious risks to which such fragile plants are subjected, not to mention the difficulties of harvesting, it does not seem strange that, comparing one year to the next, the yield is rarely more than 7,000 barrels of oil. This statement should not, however, be taken as read, since it is based on unpredictable factors as well as the misfortune of having seen all of the olive trees planted in 1693 be unable to bear fruit for the following fourteen years. Olive trees flower during the wet season, when there is frequent rainfall and storms and are in turn subject to the scorching heat of summer, the two extremes causing them to lose their flowers. All of the plants which have managed to avoid these hazards can still be lost, since they have to be gathered during the harsh winter, which brings with it unpredictable winds, snow and storms, with floods which can engulf them. As, however, a surplus is

desirable, let God be praised that the above-mentioned sum of 7,000 barrels is always provided. Of these barrels, almost 600 are used by inhabitants of the region, both in the towns and countryside, and one must consider that, for many, poverty dictates that there is no other condiment for their bread: oil is easily acquired by gathering th olives off the ground with no other increase than that of the tithe. Approximately another 400 are taken by country men from some distance away who come at harvest time and, having gathered as much as they are allowed according to their needs, return to their own homes. They travel over land from many areas of the country. Moreover, the territories of Tripolis and Roman Argos take quite a considerable amount, as do the ships which stock up on their journeys. Taking all of this into account, even if the first sum mentioned is debatable, it can be argued with certainty that 5,000 barrels will remain, reserved for Venice. If, however, in one year more oil is distributed, as happened in 1711, one must not concentrate solely on that one year because the quantity of oil produced varies from year to year and more oil is likely to be produced in the near future. And so it appears that whatever the quality of these plants, which do not always bear fruit and which vary from year to year in their yield as well as in the amount gathered, when calculated together one almost always comes back to the figure mentioned above. It is also difficult to accurately measure total product since certain wealthy citizens are able to request oil from elsewhere and have it brought to these parts from Mani and other places. The price per barrel last October and November (1711) was 4.1/2 reals, in December and January it went up to 5 reals,

in February and March of this year to 2 cechini, in April and May to 6 reals and it currently stands at 6.1/4 reals.

Two merchant vessels left this port loaded with oil from Venice. "La Madona di Loretto e Sant'Antonio", owned by Giacomo Adorno, was loaded with 68 large barrels and 1,200 small barrels of oil by Bernardo Locattelo. The captain and crew loaded 80 barrels in small amphoras. The other vessel, which was called "Sant'Iseppo e Cinque Santi" and was owned by Vicenzo Crivellaro, loaded 70 large barrels and 1791 small barrels since it had more merchants, in addition to 6 large barrels for the captain of the vessel and other amphoras to the capacity of 165 small barrels. As well as this amount, which has already been distributed, there are currently two other merchant ships here, one of which has come from Mani loaded with "valonia" and is to load a small quantity of oil before continuing its voyage to Venice, and another vessel which will be loaded to capacity with oil: the exact amounts cannot be given for they have not yet finished loading. The owner of the first ship, from Mani, is called Mattio Zennaro and the owner of the other ship, which is being loaded to capacity with oil, is called Iseppo Constantini. As far as is known, three merchant ships are expected, one belonging to Mr Zuanne Foresti, and the third belonging to Mr Giorgio Giatro from Calamata, but those who collect oil from areas in Mani and Calamata will never be able to fill them to capacity at this port. They will have to go to the embankments at Modon and Navarino for this, where oil is also brought from Arcadia, which shows that after Zennaro's and Constantini's vessels have been loaded, there will only be approximately 2,000 barrels left here to be sent to

Venice. This, as I have previously mentioned, will exceed the standard 5,000 barrels. Given that the price has risen to 6 1/4 reals, everyone is gathering oil and selling it on vessels heading for Venice, and by doing small favours for the captain other advantages can be gained.

As for charges for the oil, up until loading no other payment are required apart form those made to the porters who take the oil from the warehouses, where it is stored, to the harbour where the barrels are, and then a surcharge of 4% for distribution above the current oil prices.

Zaccaria Bembo, Administrator

Zaccaria Bembo's Report, June, 1712, in:
+ Appears in N. Karabela, Messeniaka Grammata (Calamata, 1981); translated by the Modern Languages Department, University of Salford.

Appendix to Chapter Six

Document

Establishment-Modernisation
of a Packing Unit
(Specifications)

Athens
January 1987.

Ministry of Agricultue
Department of Trade and Processing

Design of the Unit

I. Unit Capacity: The Designed unit should have potential capacity for branding and packing of olive-oil 1,500-2;000 tonnes.

II. Building Ground: In order to build a new processing unit a plot of about one stremma is required and the unit should face the main road.

III. Building Construction: Simple construction of brick-making or metallic with metallic roof, and dimensions 15x25m.

IV. a) Basic Technical Equipment: Two filters, with capacity 7 tonnes/8hours and one semi-automatic filler.

b) Complementary Equipment: One ground scale with capacity 0-300 kgrs, three stainless oil-banks with capacity 10 tonnes each, four stainless pumps with cleaning-rods, two auxiliary oil-banks with capacity 2 tonnes each and a general electrical board.

V. Storage Facilities: The area of the processing unit of $375m^2$ allows storage of the processing equipment and the produce on the right and the left.

Economic Specifications

A.	Formation of the Building Ground	500,000 drs
B.	Building Construction	8,000,000 drs
C.	Mechanical Equipment	
1.	Oil-Banks 10 tonnes 3m x 850,000 drs	2,550,000 drs
2.	Oil-Pipes 35 x 10,000 drs	350,000 drs

3.	Pumps 4 x 400,000 drs	1,600,000 drs
4.	Filtering Equipment 2 x 4,500,000 drs	9,000,000 drs
5.	Auxiliary Oil-Banks 4 x 250,000 drs	1,000,000 drs
6.	Semi-Automatic Filler	7,000,000 drs
7.	General Electrical Board	350,000 drs
8.	Cable Works 133m x 3,000 drs	400,000 drs
9.	Fitting Together	500,000 drs
10.	Unforeseen Expenditure	2,250,000 drs
	Total	25,000,000 drs

Total Cost

1.	Value of Building Ground	500,000 drs
2.	Building Ground Formation	500,000 drs
3.	Construction Work	8,000,000 drs
4.	Technical Equipment	25,000,000 drs
5.	Technical Study-License-Supervision	4,000,000 drs
	Total	38,000,000 drs
	With completion period end of 1987	5,000,000 drs
	In current 1987 prices Total Cost	43,000,000 drs

To this study contributed:

1. G. Balatsouras, The Highest Agricultural School of Athens
2. S. Panagiotou, Ministry of Agriculture
3. G. Sovagis, Ministry of Agriculture
4. V. Evagellou, Agricultural Bank of Greece
5. E. Papamarkaki, Ministry of Agriculture
6. G. Bouzanis, Ministry of Agriculture
7. P. Tulias, Ministry of Agriculture
8. G. Bazioti, Ministry of Agriculture

The General Director
Department of Trade and
Processing

S. Panagiotou.

BIBLIOGRAPHY

PRIMARY SOURCES

In Greek

1. Andreas Yefteas S. A., Olive-oil processor, unpublished company records on costs and revenues, 1985-1988.

2. Central Co-operative of Messenia, olive-oil processor, production and exports, 1983-1988.

3. Custom House of Messenia, records on olive-oil and olive exports, 1986-1988.

4. Eleourgiki, records on costs and revenues, 1986-1988.

5. Eleourgia Messenias, Olive-oil processor, unpublished company records on costs and revenues, 1986-1988.

6. Elais, olive-oil processor, unpublished company records on production 1985-1988.

7. Gargalianoi Co-operative, Interviews with farmers, Summer 1988.

8. Institute of Trade and Commerce at Messenia, records on local company exports, 1986-1988.

9. Ionian Bank of Calamata, financial records on second-stage processors, 1988.

10. Kalogeropoulos & Sons, S. A., olive-oil processor, production and exports, 1980-1988.

11. Kefalea Bros, Olive-oil processor, unpublished company records on costs and revenues, 1984-1987.

12. Kinotita of the village Coryfasi, records on demographic changes and production conditions in the village.

13. Koutelas, olive-residue-oil processor, production 1985-1988.

14. Linardakis, olive-residue-oil processor, production and sales, 1985-1988.

15. Malamas St., olive-oil processor, production and sales, 1980-1988.

16. Minerva, olive-oil processor, unpublished company records on production and prices 1981-1988.

17. Olive Cooperative of Gargalianoi, records on costs and revenues and production information on member olive producers, Gargalianoi, province of Messenia.

18. Olive Cooperative of Avia, records on costs and revenues and production information on members, province of Messenia.

19. Olive Cooperative of Coryfasi, records on costs and revenues and production information on members, province of Messenia.

20. Premmenou Bros, Olive-oil processor, unpublished company records on costs and revenues, 1986-1988.

21. The Town Hall of Pylos, records on past and recent history of village Coryfasi, county of Pylia, province of Messenia.

22. The Town Hall of Calamata, records on past and recent history, on demographic changes, and on production conditions in the village of Avia, county of Calamata, province of Messenia.

23. Village of Avia, Interviews with farmers, Summer 1988.

24. Village of Coryfasi, Interviews with farmers, Summer 1988.

25. Vraka Bros, olive-oil processor, production and prices and company history, 1980-1988.

OFFICIAL PUBLICATIONS

(1) In Greek

1. A.B.G, Structural and Economic Indicators on Family Farms, Athens, 1973.

2. A.B.G, Study on Employment in the Rural Sector, 1981, Athens, 1982.

3. A.B.G, Bulletin on Agriculture, Athens, 1983.

4. A.B.G, The Problems of Small Holdings, by the Governor A. Pepelassis, Athens, 1976.

5. A.B.G, The Olive-Oil and Table Olives Sector, by E. Evagelou, Athens, 1986.

6. A.B.G, Report on the Technical Development of Seed-Oils Processing Units, Athens, 1983.

7. Cotton Organization, Production of Seed-Oils 1982-1986, (Athens, 1988).

8. Cotton Organisation, Production Techniques in Seed-Oils Processing Units, Athens, 1985.

9. EOMEX, Six Studies on Topics of Small Enterprises, (Athens, 1985).

10. EOMEX, Information Bulletin on the Progress on Small and Medium Enterprises, Athens, 1980-1987.

11. House of Parliament, Five Year Plan for Economic and Social Development, 1983-1987, Athens, 1983.

12. I.H.P.O.C, Reporting Experimental Work on Soil Cultivation and Weeding, (Crete, 1980).

13. I.H.P.O.C, Experimental Work on Olive Groves Lay-Out, (Crete, 1985).

14. Ministry of Agriculture, Study for the Establishment-Modernisation of Packing Olive-Oil Units, (Athens, 1987).

15. Ministry of Agriculture, Special Sectoral Programmes for Olive Products and Seed-Oils, 1983, 1985 and 1988, Athens.

16. Ministry of Agriculture, Department of Second Stage Processing : Regional Distribution and Output Information, Athens, 1988.

17. Ministry of Agriculture, Official Reports, 1974-1984, Athens, 1985.

18. N.S.S.G, Economikes Epetirides, various years.

19. National Bank of Greece, Report of the Governor on the Budgets of 1983-1988, Athens.

20. PASEGES, The Greek Agriculture: Processing and Marketing of Olive-Oil, Athens, 1978.

21. PASEGES, Programme for the Processing and Marketing of Olive-Oil, Athens, 1983.

22. PASEGES, State Policies Towards the Co-operative Sector, Athens, 1981.

23. PASEGES, Manifesto of its Establishment, 1935.

24. I.C.A.P., published company records, 1981-1988, in: The Official Government Newspaper.

25. SEVITEL, Enimerotiko Deltio, various years.

26. The Greek Agricultural Company, Agricultural Bulletin, N. Lihnos, Vol. 23, Issue 228, 1930.

(2) In English

1. Commission, COM (81) G10 final, Commission Communication to the Council on the consequences of enlargement for the situation in the community olive-oil market, 26/10/1981.

2. Commission, COM (82) 85 final, Proposal for a Council Regulation amending Regulation No. 136/66/EEC on the establishment of a common organisation on the market in oils and fats, 10/3/1982.

3. Commission of the European Communities, The Situation of the Agricutural Markets, 1985-1989.

4. Commission, Official Journal of the European Communities, No. L.57/18, 3.3.1988.

5. Commission, Official Journal of the European Communities, No. L201/46, 27.7.1988.

6. Commission of the European Communites, The "Cost of non-Europe" in the Foodstuffs Industry, 1988.

7. Commission of the Euroepan Communities, Bulletin of the Euroepan Communities, 1969, 1972, 1983, 1989, 1990.

8. Commission of the European Communities, A Community Strategy to Develop Europe's Industry, Brussels, 1981.

9. European Economic Community, Regulation No. 136/66/EEC, Establishing a Common Organisation in Oils and Fats, 22/9/1966.

10. European Economic Community, Regulation No. 1562/78/EEC. Amending Regulation No. 136/66/EEC on the establishment of a common organisation of the market in oils and fats, 29/6/1978.

11. Commission of the European Communities, Survey of Multinational Enterprises, July, 1976.

12. F.A.O. Agricultural Development Paper No. 58 "Olive Oil Processing in rural mills", Rome 1956.

13. I.O.O.C Feuille D' Information, various years.

14. O.E.C.D, The Newly Industrialising Countries, Challenge and Opportunity of OECD industries, 1988.

15. O.E.C.D., Industrial Policies, Development and Outlook of O.E.C.D. Countries, Paris, 1981 and 1986.

16. O.E.C.D., "The Agricultural Policy of Greece", Agricultural Policy Reports, Athens, 1982.

17. O.E.C.D., Review of Agricultural Policies in OECD Member Countries, 1980-1982. Committee for Agriculture, AGR (83) 14, Paris, 1983.

18. Official Journal of the European Communities Special Report of the Court of Auditors on the Common Organisation of the market in olive-oil, 3/6/1985, C134.

19. Panorama of E.C. industry, Food and Drink: Olive-oil sector, 1989.

21. United Nations, Transnational Corporation in World Development, A Re-examination, Economic and Social Council Commission of Transnational Corporations, 4th session, E/C 10/38, New York, 1978.

22. United Nations, Transnational Corporations in World Development: Third Survey, United Nations Centre on Transnational Corporations, New York, 1983.

23. United Nations, Commodity Review and Outlook, Vol. 20 and 22. FAO, Rome, 1981 and 1982.

STATISTICAL SERIES

(1) In Greek

1. ELEOURGIKI, Olive-Oil producer prices, 1980-1988.

2. N.S.S.G., National Accounts, 1958-1988.

3. N.S.S.G., Census of Population, 1950-1988.

4. N.S.S.G., Agricultural Production, various years.

5. N.S.S.G, Agricultural Census, 1929, 1939.

6. N.S.S.G., Agricultural Index Prices: 1966-1983, Department of Prices.

7. N.S.S.G., Industrial Surveys, 1939-1988.

8. N.S.S.G., Statistical Yearbook of Greece, 1958-1988.

9. N.S.S.G, Monthly Statistical Bulletin, various years.

10. N.S.S.G, Exports-Imports, various years.

11. N.S.S.G, External Trade, 1986, 1987, 1988.

12. N.S.S.G, Agriculture and Employment, 1987.

13. N.S.S.G., Employment Bulletin, 1951-1975.

14. Ministry of Agriculture, Figures on Olive-Oil Production and Exports 1950-1988.

15. Ministry of Commerce, Olive-Oil retail and wholesale prices 1950-1988.

16. Ministry of Agriculture, Olive-Oil producer prices, 1950-1988.

17. Ministry of Agriculture, Industrial Survey on Oil-Mills, 1988.

(2) In English

1. EUROSTAT, Basic Statistics of the Community, 1982-1985.
2. EUROSTAT, Imports-Exports, various years.
3. F.A.O., Production Yearbook, 1950-1988.
4. I.O.O.C., Olive-Oil Production, 1968-1983.
5. O.E.C.D., Main Economic Indicators, 1981-1989.
6. United Nations, International Trade Statistics Yearbook, 1986-1988.

NEWSPAPERS AND PERIODICALS (Various Dates)

(1) In Greek

1. Agrotica, newspaper of the Province of Messenia, 1920-1931.
2. Eleourgiki, quarterly periodical by Eleourgiki.
3. Economicos Tahidromos, weekly periodical.
4. Nafteboriki, weekly newspaper.
5. Olivae, quarterly periodical by I.O.O.C.
6. Politica Themata, weekly periodical.
7. Rural Mornings of Messenia, monthly periodical 1910-1930.
8. Vima, weekly newspaper.

(2) In English

1. The Economist, weekly periodical.

SECONDARY SOURCES

Books and Journal Articles

(1) In English

W.J. Abernathy and P.L. Townsend, "Technology, productivity and process change", Technological Forecasting and Social Change, 7, 1975.

American Rural Industry Delegation. Rural Small-Scale Industry in the People's Republic of China, (California, 1977).

S. Amin, Imperialism and Unequal Development, (London, 1977)

D. Anderson, "Small industry in developing countries: a discussion of issues", World Development, 10, 1982.

K. Anderson and Y. Hayami, The Political Economy of Agricultural Protection, (Sydney, 1986).

D. Anthony, "Japan". In D.J. Storey (ed.), The small firm: an international survey, (London, 1983).

J. Arnon, Modernisation of Agriculture in Developing Countries, (New York, 1981).

K. J. Arrow (ed), The Balance between Industry and Agriculture in Economic Development, Vol. 1, (London 1988).

A.W. Ashby, "Britain's food manufacturing industry and its recent economic development", Journal of Agricultural Economics, 29, 1978.

P. Aydalot, "The location of new firm creation: the French case". In D. Keeble and E. Wever (eds.), New Firms and Regional Development in Europe, (London, 1986).

R. Allard, "The importance and position of small firms", The Economic Review, November, 1983.

J. Bain, Barriers to New Competition, (Cambridge, 1956).

J. Banaji, "A Summary of Kautsky's The Agrarian Question", Economy and Society, 5, 1, 1976.

K.D. Barkin, The Controversy over German Industrialisation 1890-1902, (Chicago, 1970).

K. Basu, The Less Developed Economy: A Critique of Contemporary Theory, (Oxford, 1984).

W. Baumol, J. Panzar and R. Willig, Contestable Markets and the Theory of Industry Structure (New York, 1982).

C. Bell and P. Hazell., "Measuring the indirect effects of an agricultural investment project on its surrounding region", American Journal of Agricultural Economics, 62, 1980.

I. Benson and J. Lloyd, New Technology and Industrial Change, (London, 1983).

K. Bharadwaj, "A View of Commercialization in Indian Agriculture and the Development of Capitalism", Journal of Peasant Studies, (July, 1985a).

M. Binks and A. Jennings, "Small firms as a source of economic rejurenation". In J. Curran, J. Stanworth and D. Watkins (eds.), The survival of the small firm, Vol. 1., (Aldershot, 1986).

J. D. Blake, The Concise Guide to Interpreting Accounts, (London, 1989).

R.C. Blitz, "Review of the conditions of agricultural growth, by E. Boserup". Journal of Political Economy, 75, 1967.

A. Booth and R. M Sundrum, Labour Absorption in Agriculture, (Oxford, 1985).

E. Boserup, The Conditions of Agricultural Growth, (Chicago, 1965).

C. Bould, "Comparative Role of Soil and Leaf Analysis in Crop Nutrition Cotnrol": in C. R. Coll, Controle de las Nutrition Minerale et de la Fertilization des Cultures Mediterraneennes, (Montpellier, 1964).

J.K. Bowers and P. Cheshire, Agriculture, the countryside and land use, (London, 1983).

I.R. Bowler, "Co-operation: a note on governmental promotion of change in agriculture". Area, 4, 1972.

I.R. Bowler, "Structural change in agriculture", in Pacione (eds.), Progress in Rural Geography, (London, 1983).

H.E. Bracey, Industry and the countryside, (London, 1963).

H. Braverman, Labour and Monopoly Capital, (London, 1974).

F. Braudel, The Mediterranean and the Mediterranean World in the Age of Philip II, Vol. 1., (London, 1972).

D.K. Britton, "Some explorations in the analysis of long-term changes in the structure of agriculture". Journal of Agricultural Economics, 28, 1977.

D.K. Britton and B.E. Hill, Size and Efficiency in Farming (Farnborough, 1975).

R. Bromley and C. Gerry (eds),Small-scale Manufactuiring and Repairs in Dakar : A Survey of Market Relatons within the Urban Economy, (London, 1979).

C.R. Bryant., "Manufacturing in rural development", in D. F. Walker (eds.), Planning industrial development, (Chichester, 1980).

J. Burnett, Plenty and Want, London, 1979.

J. Burns., "The UK food chain with particular reference to the inter-relations between manufacturers and retailers", Journal of Agricultural Economics, 34, 1983.

J. Burns, J. McInery and A. Swinbank (eds.)., The Food Industry : A Summary of Themes, (London, 1983).

C. Barlow, The Natural Rubber Industry. Its Development, Technology and Economy in Malaysia, (Oxford, 1978).

I.V.E. Cartledge, A history of the Coffee Industry in Papua New Guinea, (Goroka, 1978).

R. Chambers, Rural development: Putting the Last First, (Harlow, 1983).

A.V. Chayanov, The Theory of Peasant Economy, (Homewood, Ill., 1966).

P. M. Chisnall, Strategic Industrial Marketing, (U.K, 1989).

E. Chuta and S. V. Sethuraman (eds)., Rural small-scale industries and employment in Africa and Asia, (Geneva, 1984).

P. Cloke, "Counterurbanisation: a rural perspective". Geography, 70, 1985.

D. Cochrane and G. Orcutt, "Application of Least Squares Regression to Relationships Containing Autocorrelation Error Terms", Journal of the American Statistical Association, Vol. 44, 1949.

W. A. Cohen, The Practice of Marketing Management, (New York, 1988).

M. Cross, New firm formation and regional development, (Farnborough, 1981).

D. Curry. The Food War: the European Community and the Battle for World Food Markets, (London, 1982).

A. Cutler, B. Hindess, P.Q. Hirst and A. Houssain, Marx's 'Capital' and Capitalism Today Vol I., (London, 1977).

J. E. Davidson et.al, "Econometric Modelling of the Aggregate Time Series Relationship between Consumers' Expenditure and Income in the United Kingdom", The Economic Journal, 88, 1978.

H. Demsetz, "Industry Structure, Market Rivalry and Public Policy", Journal of Law and Economics, 27, 1982.

M. Dobb, Studies in the Development of Capitalism, (London, 1963).

E. Dokopoulou, "Small manufacturing firms and regional development in Greece: patterns and changes". In D. Keeble and E. Weaver (eds), New Firms and Regional Development in Europe, (London, 1986).

P. Dorner, Land reform, technology, income distribution and employment, (London, 1973).

P. Dorner, Land Reform and Economic Development, (London, 1972).

P. Doust, Marketing Management - Planning and Control (London, 1986).

P. Doust, Fundamentals of Marketing, (London, 1986).

R. Duncan-Jones, The Economy of the Roman Empire : Quantitative Studies, (Cambridge, 1974).

A. Erlich, The Soviet Industrialisation Debate 1924-1928, (Cambridge, 1960).

J. Farrell, "Moral Hazard as an Entry Barrier", Rand Journal of Economics, 17, 1986.

D. Fieldhouse, Unilever Overseas, (London, 1978).

M. J. Finley, The Ancient Economy, (London, 1973).

G. Foxhall, Co-operative marketing in European agriculture, (Aldershot, 1982).

L. Franco, "Adjusting to Export Thrusts of Newly Industrialising Countries : An Advanced Country Perspective". The Economic Journal, 91, June, 1981.

A. G. Frank, Reflections on the World Economic Crisis, (London, 1981).

S. V. Frauendorfer, "Part-Time Farming : A Review of World Literature", World Agricultural Economics and Rural Sociology Abstracts, Vol. 8, Part I, 1966.

A.S. Friedeberg, "Olive-Oil in the EEC. Gift from the Gods or Trojan Horse". Food Policy, Vol. 8. Part 1, February 1983.

C. Furtado, Development and Underdevelopment, (California, 1964).

R. Gasson, "Goals and values of farmers". Journal of Agricultural Economics, 24 (3), 1973.

A.K. Ghose, "The formation of usurious interest rates". Cambridge Journal of Economics, Vol.4, 1980.

M. Giaoutzi, P. Nijkamp and D. Storey (eds.). Small and Medium Size Enterprises and Regional Development, (London, 1988).

D. Goodman, B. Sorj and J. Wilkinson. From Farming to Biotechnology : A Theory of Agro-Industrial Development, (Oxford, 1987).

D. Goodman and M. Redclift, From Peasant to Proletariat, (Oxford, 1981).

P. Gould, "Man Against his Environment : A Game Theoretic Approach", Annals of the Association of American Geographers, 53, 1963.

H. Gravelle and R. Rees, Microeconomics, (London, 1981).

S. A. Greenman, Accounting in Modern Form, (London, 1966).

D. Grigg, The Dynamics of Agricultural Change, (London, 1982).

M. Guida, "Fats and Oils in Italy", Speech given in the Annual Conference of the IFMA-IMACE, Rome, May 1984.

I.F.E. Hamilton (ed.), Industrial Change in Advanced Economies, (Australia, 1987).

L. Hannah, The Rise of the Corporate Economy, (London, 1976).

M. Harrison, "Chayanov and the economics of the Russian peasantry", Journal of Peasant Studies, 2,4, 1975.

J. Harris (ed.), Rural Development, (London, 1982).

H. T. Hartmann and J. Porlingis, "Effect of Different Amounts of Winter Chilling Fruitfulness of Several Olive Varieties", Bot. Gazette, 119: 102, 1957.

M. Hartmann, W. Henrichsmeyer and P. M. Schmitz, "Political Economy of the CAP in the European Community" in Congress Proceedings, 9th World Congress, International Economic Association, Athens, 1989.

Y. Hayami and V W. Ruttan, Agricultural Development. An International Perspective, (Baltimore, 1971).

M.J. Healey and B.W. Ilbery (eds.), The Industrialization of the Countryside, (Norwich, 1985).

W. Hildenbrand (eds), Advances in Economic Theory, (Cambridge, 1982).

B.E. Hill, The Common Agricultural Policy: past, present and future, (London, 1984).

B. E. Hill, and K. A. Ingersent, Economic Analysis of Agriculture (London, 1977).

P. Hill, Development Economics on Trial. The Anthropological Case for a Prosecution, (Cambridge, 1986).

P. Hill, Studies in rural capitalism in West Africa, (London, 1970).

B.F. Johnston and P. Kilby, Agriculture and Structural Transformation, (New York, 1975).

JURUE, The planning problems of small firms in rural areas, University of Aston, (Birmingham, 1982).

N.M. Kay, The Evolving Firm, (London, 1982).

D. Keeble and E. Wever (eds.), New firms and Regional Development in Europe, (London, 1986).

P. Kilby, Industrialization in an Open Economy, (Cambridge, 1969).

Sung-Lo Kim, Farm Mechanization in East Asia, (New York, 1974).

G. Kitching, Development and Underdevelopment in Historical Perspective: Populism, Nationalism and Industrialization (London, 1989).

L. Klein and K. Ohkawa, Economic Growth : the Japanese Experience Since the Meiji Era, (Homewood, 1968).

T. Lang and P. Wiggins, "The industrialization of the U.K. food system: from production to consumption". In M. Healey, and B. Ilbery, (eds.), The industrialization of the countryside, (Norwich, 1985).

K.P. Legg, Politics in Modern Greece, (Stanford, 1969).

D. Lehmann (ed.), Agrarian Reform and Agrarian Reformism, (London, 1974).

V.I. Lenin, "New Data on the Development of Capitalism in Agriculture", in Collected Works, Vol.22, (London, 1917).

V.I. Lenin, (1899) "The Development of Capitalism in Russia" in Collected Works, Vol.3 (London, 1960).

M. Lipton, "The Theory of the Optimising Peasant" Journal of Development Studies, 4, 3, p.327-51, 1968.

A.D. Little, "Impact of Technology on the Food Industries" cited in: Impact of Multinational Enterprises on National Scientific and Technical Capacities, Food Industry, (Paris, 1970).

P. Lloyd, A Third Work Proletariat? London, 1983.

D.I.F. Lucey and D.R. Kaldor, Rural industrialization: the impact of industrialization on two rural communities in western Ireland, (London, 1969).

E. Malefakis, Agrarian Reform and Peasant Revolution in Spain, (U.S.A., 1976).

S.A. Mann, and J.M. Dickinson, "Obstacles to the development of a capitalist agriculture". The Journal of Peasant Studies, 5(4), 1978.

H. Mann. The Social Framework of Agriculture (London, 1976).

T.K. Marsden and D.G. Sykes, "Landownership and farm organization, evolution and change in a capitalist agricultural region". International Journal of Urban and Regional Research, 8, 1984.

K. Marx, Capital, Vol III, (Hamburg, 1894).

K. Marx, (1865) Capital, Vol I, (New York, 1967).

P. Maunder, "Food manufacturing", in P.S. Johnson (ed.) The structure of British Industry, (London, 1980).

B.W. McGowan, Economic life in Ottoman Europe: taxation, trade and the struggle for land 1600-1800, (London, 1981).

C. Meillassoux, "From production to reproduction". Economy and Society, Vol I, No.1., 1972.

G.N. Minshull, The New Europe : An Economic Geography of the EEC, (Kent, 1985).

D. Morawetz, "Employment Implications of Industrialization in Developing Countries: A Survey", Economic Journal, Vol. 84, 1974.

J.M. Moreno-Martinez (eds), Olive-Oil Technology, (Rome, 1975).

N. Mouzelis, Modern Greece : Facets of Underdevelopment, (London, 1978).

H. Newby, Green and Pleasant Land? Social Change in Rural England, (London, 1979).

H. Newby and P. Utting, "Agribusiness in the United Kingdom: social and political implications". In G.M. Beradi and C.C. Geisler (eds.). The Social Consequences and Challenges of New Agricultural Technologies, (London, 1984).

R.H. Parker, Understanding Company Financial Statements, (Britain, 1982).

K. Parris and C. Ritson, EEC Oilseed Products Sector and the Common Agricultural Policy. Centre for European Agricultural Studies, Occassional Papers No.4, (Kent, 1978).

V. Patnaik, "Neo-populism and Marxism: the Chayanorian view of the agrarian question and its fundamental fallacy", Journal of Peasant Studies, 6, 4, 1979.

A. Pearse, Seeds of Plenty, Seeds of Want. Social and Economic Implications of the Green Revolution, (Oxford, 1980).

C. Perez, "Microelectronics, Long Waves; and World Structural Change. New Perspectives for Developing Countries", World Developement, 13(3), 1985.

N. Poulantzas, Political Power and Social Classes, (Paris, 1968).

N. Poulantzas, Classes in Contemporary Capitalism, (Paris, 1974).

Al. Rainnie, "Small firms, big problems: the political economy of small businesses". Capital and Class, No.25, 1985.

F.T. Rees, "The EEC and the U.K.'s Cereals Processing Industry". In J. Burns, J. McInerney and A. Swinbank (eds.): The Food Industry: Economics and Policies, (London, 1983).

M.J. Rao, "Interest rates in backward agriculture". Cambridge Journal of Economics, Vol.4, 1980.

G. Ranis and K. Ohkawa (eds.), Japan and the Developing Countries : A Comparative Analysis, (Oxford, 1985).

G. Ranis, "The Role of Institutions in Transition Growth: The East Asian Newly Industrializing Countries". World Development Vol.17, No.9, SPECIAL ISSUE, September 1989.

J. Robinson, Multinationals and Political Control, (London, 1983).

L. E. Rockley, The Meaning of Balance Sheets and Company Reports, (Essex, 1983).

F.M. Scherer et al., The Economics of Multi-Plant Operation, (London, 1975).

H. Schmitz, "Growth Constraints on Small-Scale Manufacturing in Developing Countries". World Development, Vol.10, No.6. 1982.

H. Schmitz, Accumulation and Employment in Small-Scale Manufacturing: Case Studies from Brazil, (London, 1982).

T. Shanin (ed.), Peasants and Peasant Societies : Selected Readings, (Harmondsworth, 1971).

H. Singer, Technologies for Basic Needs, (Geneva, 1977).

E. G Smith, "America's Richest Farms and Ranches", Annals of the Association of American Geographers, 70, 1980.

P. Sonza and E. Tokman, "The informal urban sector in Latin America". International Labour Review, Vol.114, No.3, 1976.

R. Standish, The first of trees. The story of the Olive, (London, 1960).

L.S. Stavrianos, The Balkans since 1453, (New York, 1958).

N. H. Stern and C. J. Bliss, Palanpur: The economy of an Indian Village, (Oxford, 1982).

J. Stiglitz and F. Mathewson (eds.), New Developments in the Analysis of Market Structure, (Cambridge, 1986).

D.J. Storey, "The Problems Facing New Firms", Journal of Management Studies, 22(3), 1985.

Special Report No. 2 "Edible Oils in Italy", Marketing in Europe, 224, July, 1981.

Special Issue in "Third World Industrialization in the 1980s : Open Economies in a Closing World" in Journal of Development Studies, 21(1), 1984.

D. Swann, The Economics of the Common Market, (London, 1988).

P. Sweezy et.al, From Feudalism to Capitalism. Problems of Transition, (New York, 1976).

A. Swinbank and J. Burns (eds.), The EEC and the Food Industries, (London, 1984).

A. Teichova, Levy-Leboyer and E. Nussbaum (eds.), Multinational Enterprises in Historical Perspective, (Cambridge, 1986).

S.M. Theofanidis, "The Static Economic Effects of Greece's Entry into the EEC: the Case of Olive Oil: a Cost Benefit Analysis". European Review of Agricultural Economics, 6:81, 1979.

J. Thompson, Organisation in Action, (New York, 1967).

H. Thorelli and H. Becker, International marketing Strategy, (New York, 1984).

M. Thoughton, "Process and response in the industrialization of agriculture". In: G. Euyedi and I. Volgyes (eds.) The Effect of Modern Agriculture on Rural Development, (New York, 1982).

J. Tschiersch, Appropriate Mechanization for small farmers in Developing Countries, (Germany, 1978).

K. Tribe and A. Houssain, Marxism and the Agrarian Question, Vol.1: German Social Democracy and the Peasantry 1890-1907, (London, 1981).

M. Tsinizels, Groups and Agriculture in the European Community, (London, 1990).

P.W. Turnbull and J.P. Vala (eds.), Strategies for International Industrial Marketing, (London, 1986).

I. Vogeler, The Myth of the Family Farm: Agribusiness Dominance of US Agriculture, (Colorando, 1981).

S. Watanabe, "Enterpreneurship in small enterprises in Japanese manufacturing". International Labour Review, Vol.102, No.6, 1970.

H.D. Watts, The large industrial enterprise: some spatial perspectives, (London, 1980).

A. Williams (ed.), Political and Economic Change in Greece, Italy, Portugal and Spain, (London, 1984).

M. Winsberg, "Concentration and Specialization in U.S. Agriculture, 1939-1978". Economic Geography, 56, 1980.

W.I. Zwerman. New Perspectives on Organisation Theory, (London, 1970).

In Greek

M. Aligizakis, Processing and packaging of the table olive, (Athens, 1982).

S. Amin and K. Vergopoulos, The Question of Capitalism in the Rural Sector, (Paris, 1974).

N.E. Anagnostopoulos, The Land Reform of 1922 in Greece, (Athens, 1929).

G. Anastasopoulos, History of the Greek Industry 1840-1940, (Athens, 1947).

C. Aravanis, "The Greek Islands Heart Study". Proceedings of the Third International Congress on the Biological Value of Olive Oil, (Hania-Crete, September 1980).

P.S. Avdelidis, The Agricultural Co-operative Movement in Greece, (Athens, 1986).

S. Babanassis and C. Soulas, Greece in the Periphery of Developed Countries, (Athens, 1976).

G. Balatsouras, The Olive Tree, (Athens, 1986).

G. Christakis, M. Rordyce and Kurtz. "The biological aspects of olive oil". In: Proceedings of the Third International Congress on the Biological Value of Olive-Oil, Institute of Hania and IOOC (eds.), (September, 1980).

D. Daniilidis, Modern Greek Society and Economy, (Athens, 1934).

D.I. Delis, The Development of Greek Agriculture, Vol.I and II, (Athens, 1985).

V. Evagellou, Th. Apostolakos and K. Veziris, Analysis of Different Sectors of Agricultural Industries, (Athens, 1986).

G. Gardikis, The Agricultural Services of Messenia, (Calamata, 1925).

G. Gecos, Notes for a Seminar in Agricultural Cooperatives, (Athens, 1983).

T. Giannitsis, The Greek Industry, (Athens, 1983).

Herodotus, "Travels" in Ancient Greek Writers, (Athens, 1976).

L. Kamarinou, Agriculture and Development in Greece, (Athens, 1977).

N. Karabelas, Messenian Letters, (Calamata, 1981).

V. Karapostoli, Consumption Patterns in the Greek Rural Sector, (Athens, 1982).

V. Karapostoli, The Economic Transformation of the Greek Rural Sector, (Athens, 1982).

D. Katohianou, Sectoral - Regional Analysis of Greek Manufacturing, (Athens, 1984).

A. Kiritsakis, The Olive-Oil, (Thessaloniki, 1988).

K.E. Kiukis and L.A. Papakostantinidis, Incentives for regional development in E.E.C. countries, exploration of the Greek capabilities, (Athens, 1985).

A. Klemi, The Agricultural Economy of Greece, (Athens, 1960).

J. Kordatos, Pages from the Agrarian Movement of Greece, (Athens, 1964).

J. Kordatos, History of Modern Greece, 5 Vols. (Athens, 1958).

J. Kordatos, Introduction to the History of Greek Capitalism, (Athens, 1930).

V. Kremmidas, Introduction to the History of Modern Greek Society 1700-1821, (Athens, 1976).

G. Kutsumaris, The Structure of the Greek Industry, (Athens, 1963).

N. Leventis and M. Sakellis, Multifragmentation and Effectivity in Agricultural Establishments, (Athens, 1978).

N. Lihnos, The Olive Tree and its Cultivation, (Athens, 1949).

G.I. Mergos, Fixed Capital in Greek Agriculture, (Athens, 1980).

L. Mikros, Different types of oil-mill processes, (Crete, 1973).

D. Miliakos, The Olive Industry of Greece, EEC (Italy) and those countries whose membership applications are under consideration, (Greece, 1980).

G. Mirtakis, V. Zambounis and S. Psaraki, "Olive Oil, Other Oils and Fats", Special edition by ELEOURGIKI, Athens, 1984.

C. Moskof, The National and Social Consciousness in Greece: 1830-1909, (Thessaloniki, 1972).

M. Negreponti-Delivani, Analysis of the Greek Economy, (Athens, 1981).

M. Nikolinakos, Studies on Greek Capitalism, (Athens, 1976).

M. Nikolinakou et.al, Strategy for the Developent of the Cooperative Sector in Agriculture, (Athens, 1986).

G. Pahi, K. Karapanou and G. Economiou, Documents on the problems of the rural sector, (Athens, 1983).

G. Panitsidis, Structural Changes in our rural economy, (Athens, 1982).

G. Panitsidis, The consequences on the rural economy from Greece's incorporation into the EEC, (Athens, 1986).

G. Papadopoulos et al, Small Industy, (Athens, 1976).

V. Pissias, Deadlocks in Agricultural Policy, (Athens, 1981).

Plutarch, "Caesar" in Ancient Greek Writers, (Athens, 1976).

M. Psarou, The Sociology of Agricultural Development, (Athens, 1980).

D. Purnaras, History of the Agrarian Case, (Athens, 1960).

D. Psychogios, The Extraction of Surplus from Agriculture, (Athens, 1984).

M. Sakelli, Investment behaviour of rural families in Greece, (Athens, 1980).

J. Samaras, State and Capital in Greece, (Athens, 1982).

G. Selianakis, "Consequences for the Greek Olive Sector of Spain's and Portugal's Accession into the EEC". Special Edition by ELEOURGIKI, (Athens, 1984).

E. Sfakiotakis, Lessons in Olive Cultivation, (Thessaloniki, 1987).

A. Sideris, Economic History of Greece, (Athens, 1933).

S. Spiliotopoulou, History of the National Bank, (Athens, 1949).

Th.Tsoumas and D. Tasioulas, The State of Ownership and Uses of Agricultural Land in Greece, (Athens, 1986).

K. Vergopoulos, The Agrarian Problem in Greece: The Issue of the Social Incorporation of Agriculture, (Athens, 1975).

Y. Xiloyiannis, Annual Report on the Development of the Olive-Oil sector, (Athens, 1982).

X. Zolotas, Agrarian Policy, (Athens, 1966).

N.B. These titles are my own translations; the symbol + which appears at the end of each chapter indicates referencs in Greek.

THESES AND DISSERTATIONS

In English

M. Xekalakis, Implications for the Greek Olive Oil Market of Adopting the C.A.P. of the European Economic Community, unpublished Ph.D Thesis, University of Reading, 1979.

B.U. Uba, The Political Economy of the Nigerian oil-Palm Industry: A Case Study of Eastern Nigeria, 1807-1966, unpublished Ph.D Thesis, Queens University, Kingston, Ontario, 1981.

In Greek

N. G. Mihelakis, Olive Behaviour in Various Irrigation Conditions, unpublished Ph.D Thesis, Athens School of Agricultural Studies, Athens, 1986.