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A STUDY OF MARKETING EFFICIENCY IN THE FRUIT AND VEGETABLE WHOLESALE MARKETS OF THE UNITED KINGDOM

BY

FIONA PARKER, BSc

A thesis submitted to the Council for National Academic Awards in partial fulfilment of the requirements for the degree of Master of Philosophy.

Sponsoring Establishment: Department of Food and Hospitality Services
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ABSTRACT

A Study of the Marketing Efficiency of the Fruit and Vegetable Wholesale Markets of the United Kingdom

Fiona Parker, BSc.

The area of concern is the efficiency of the distribution system for fresh fruit and vegetables, with particular respect to the wholesaler operating within the wholesale markets. Distribution is an area increasingly experiencing the effects of the dominant role of the major retail multiple outlets.

The broad thesis being explored is that a long period of fundamental and accelerating change (which can be dated from the 1950s with the restoration of the 'traditional' system after the war) can be explained to a considerable extent by pressure exerted on the wholesaling function through its immediate market environment, ie growers and retailers and broader changes in society which articulate themselves through the food chain by shopping behaviour. These changes raise questions about the impact they have had on the components of efficiency and given the changing structure, the structure-conduct-performance paradigm provides a framework for analysis.

Changing elements of structure and conduct were identified with the aid of postal questionnaires, interviews and case studies, and marketing margin analysis was used as an indicator of relative performance. Thus a measure of efficiency was generated using cost, price and loss data for selected items of produce from the same source being distributed via both the multiple retail and independent retail channels to the consumer.

The broad conclusions indicate that distribution via the multiple retailer is more cost effective, despite high investment in technology, as a result of their economies of scale. The wholesalers' distribution operation is under pressure as their net margins are small (less than 1%), consequently restricting investment in available technology, and market throughput is stagnant.

Currently few academic or practical studies are available to the industry. This study offers a measure of change and indicates the relative efficiencies of the distribution systems. It also develops implications for future developments and improvements in the wholesale function in the United Kingdom.

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OBJECTIVES

(1) To identify and assess changes in the broad environment of the fruit and vegetable markets and how the wholesalers are adapting to change.

(2) In the light of (1), to assess the efficiency of the distribution channels for fruit and vegetables - with particular reference to the traditional wholesale markets and direct sales from grower to retail multiple.

(3) With respect to (1), to analyse the particular effects of changing technology on storage and distribution and how it has affected the wholesale function.

(4) To develop the implications for future developments and improvements in the wholesale function in the United Kingdom.

The research for the higher degree also required training in research methodologies. Therefore as part of this work I attended the Research Methods component of the MSc Management Studies/MBA Programme. I also attended courses for specialist computing skills run by the S.C.P. Computer Services Department as follows:-

Introduction to the IBM 4341
Introduction to Microcomputers
Word Processing - Displaywrite 2/Wordstar
Statistical Analysis - using SPSSX
Statistics - using Minitab

Cont'd

Two conference papers were prepared and presented at the 1986 and 1987 Agricultural Economics Society Conferences. Their titles were as follows:-

'Consideration of Marketing in the UK Food Chain with special reference to the Wholesaling function for Fresh Fruit and Vegetables' and

'Marketing Margins for Fresh Fruit and Vegetables in the United Kingdom - some reflections'.

An article considering the marketing efficiency of fresh fruit and vegetable distribution also appeared in the Fruit Trades Journal 5.6.87. This drew on the results and conclusions of the marketing margin survey.

PREFACE

The area of concern is the efficiency of the distribution system for fruit and vegetables within the United Kingdom; an area increasingly experiencing the effects of the dominant role of the major retail multiple outlets.

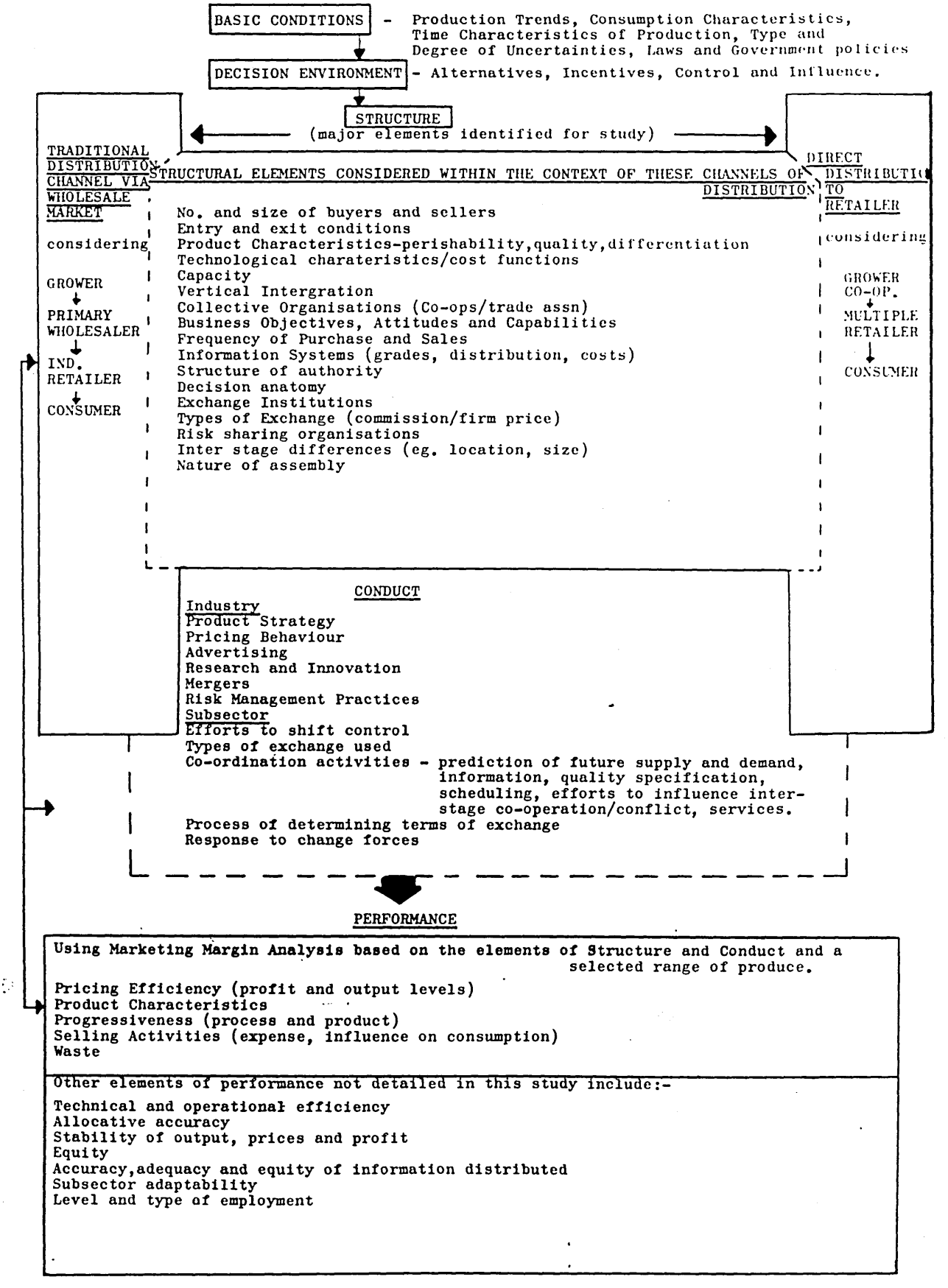
This thesis examines the efficiency problem in the context of a market economy, using the structure-conduct-performance paradigm as a conceptual framework within which to assess the situation. The basic conditions - market structure-conduct-performance of the paradigm provides both theme and counterpoint which informs for discussion and analysis.

The thesis develops with each section building on the knowledge of the previous sections.

Chapter 1, the Literature Review, examines literature on both the changing environment of the fresh fruit and vegetable wholesalers and a suitable methodology for the investigation of fruit and vegetable distribution. Reference is made to literature regarding the structure-conduct-performance paradigm and the identification of marketing margin analysis as an indicator of performance. Chapter 1 develops a 'picture' of the industry and agricultural marketing from which the research has evolved.

Chapter 2, explains the methodology. The broad elements of market structure and conduct are listed with reference to the wholesale markets. Discussion then follows regarding market performance and use of marketing margin analysis as an indicator for the comparison of the two main channels of distribution. Empirical data collection regarding structure and conduct is by means of a postal questionnaire to growers, wholesalers and retailers. Data sheets were used to compile figures from specific growers, wholesalers and retailers to facilitate marketing margin analysis.

In this study the distribution function is the structural element identified for major consideration, as the most significant development from the 'traditional' wholesaling function. The conduct within the wholesaling function includes the issues of quality, price, service and methods of exchange. Based on these elements of structure and conduct marketing margin analysis was used providing associations between elements of structure/conduct and performance. The broad development of the research can be identified in the conceptual model below.



source: Adapted from work by Branson and Norvell (1983)

Chapter 3 examines agricultural market analysis looking at efficiency as a performance result, the concept of marketing margins and factors that influence margins. It goes on to consider relationships between supply and demand concerned with the marketing of agricultural products and the determination of the marketing margin.

Chapter 4 deviates from the sequence of the paradigm in that it reflects on the structure and conduct in terms of the basic issues of the total problem area - grower, wholesaler, retailer - identifying changes and adaptations at all stages with examples. Primarily information has been collected from discussion with practitioners leading to the distribution of a questionnaire for empirical data collection. (The results of the questionnaires can be found in appendices 4a,b and c.)

Chapter 5 is concerned with the determination of the measure of performance. The collection of data and sources of error and ambiguity associated with marketing margin analysis are discussed along with the methodology implemented in their calculation. Presentation of the results follows.

Chapter 6 draws conclusions from the results of chapters 4 and 5, which are then summarised comprising 25 points of concern with some comment and suggestion.

Chapter 7 considers the implications for future developments and improvements for the wholesale function in the United Kingdom.

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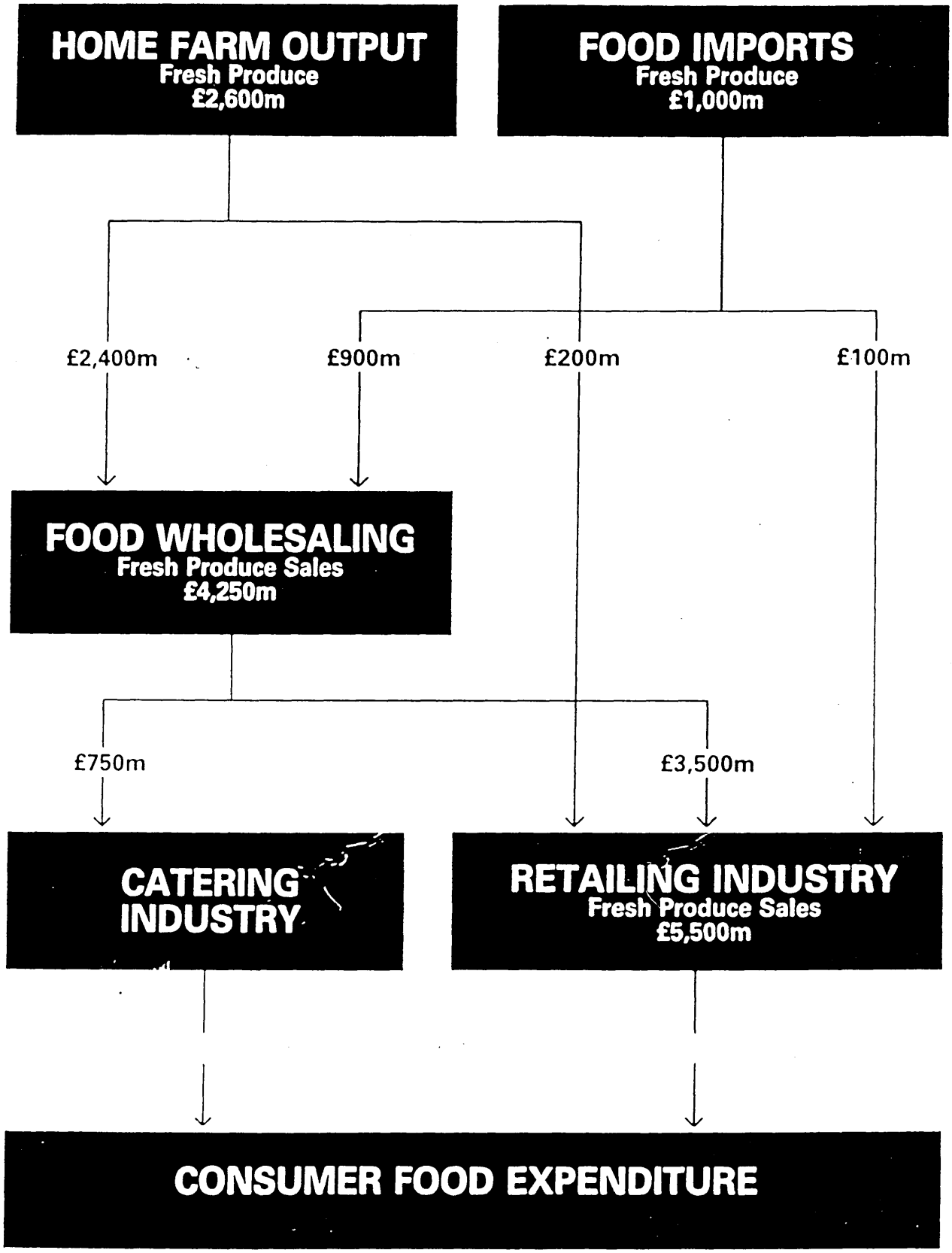
INTRODUCTION

In the UK we have a market economy for the distribution and sale of most agricultural and horticultural produce. The essence of a market economy is that prices are determined by the interplay of supply and demand. If the supply is short and demand strong, then clearly buyers will have to pay a relatively high price for their requirement. By contrast, if supply is plentiful and demand weak, then sellers will have to accept a relatively low price to dispose of their produce. In the market place prices are constantly changing, reflecting the different pressures of demand and supply.

Traditionally this market-clearing mechanism was a significant part of the role of the wholesale markets in the distribution of produce, however as a consequence of the supermarkets' demand for direct supplies from growers, wholesale markets have lost a significant volume of business and their influence upon price determination has been reduced.

Fresh produce wholesaling is part of a highly fragmented, competitive market, (figure 1). The traditional marketing chain for fresh produce extending from the producer through the primary wholesalers and importers, and thence to secondary wholesale markets and on to retailers and processors. This somewhat lengthy chain is progressively becoming shortened.

Figure 1 Channels of Fresh Produce Distribution
£ million (1979)



source: Tanburn, 1981.

The number of wholesalers has fallen from about 2,500 in 1961 (Board of Trade) to 1200 in 1984 (Trade Associations).

There is a consumer demand for quality fresh fruit and vegetables although the market is static (Appendix 1), but is this demand being satisfied by the supermarkets rather than by the independent retailer supplied by the wholesale markets? The number of Independents has fallen from 44,000 in 1952 to 13,000 in 1984 (Outspan Survey, 1985).

Recent statements put forward indicate that the issues arising are of concern to the wholesale industry. Peter Frimston Williams, (1984) as chairman of the Covent Garden Market Authority, 'There is no doubt that the industry is passing through times of change, but there is evidence of new thinking as companies have invested more in office technology, and also recorded an ever wider range of supplies coming onto their stands.' 'Admittedly' adds Colin Allen, general manager, 'there have been some contractions in the numbers of companies in the business, and it would be unrealistic to believe that this will not continue for sometime - but the estimated value and volume of the trade has continued to rise.' A further issue of concern is falling profit margins, due to the rise in general overheads, (eg Councils charging increased rent for improved services), not compensated for by a corresponding increase in sales value.

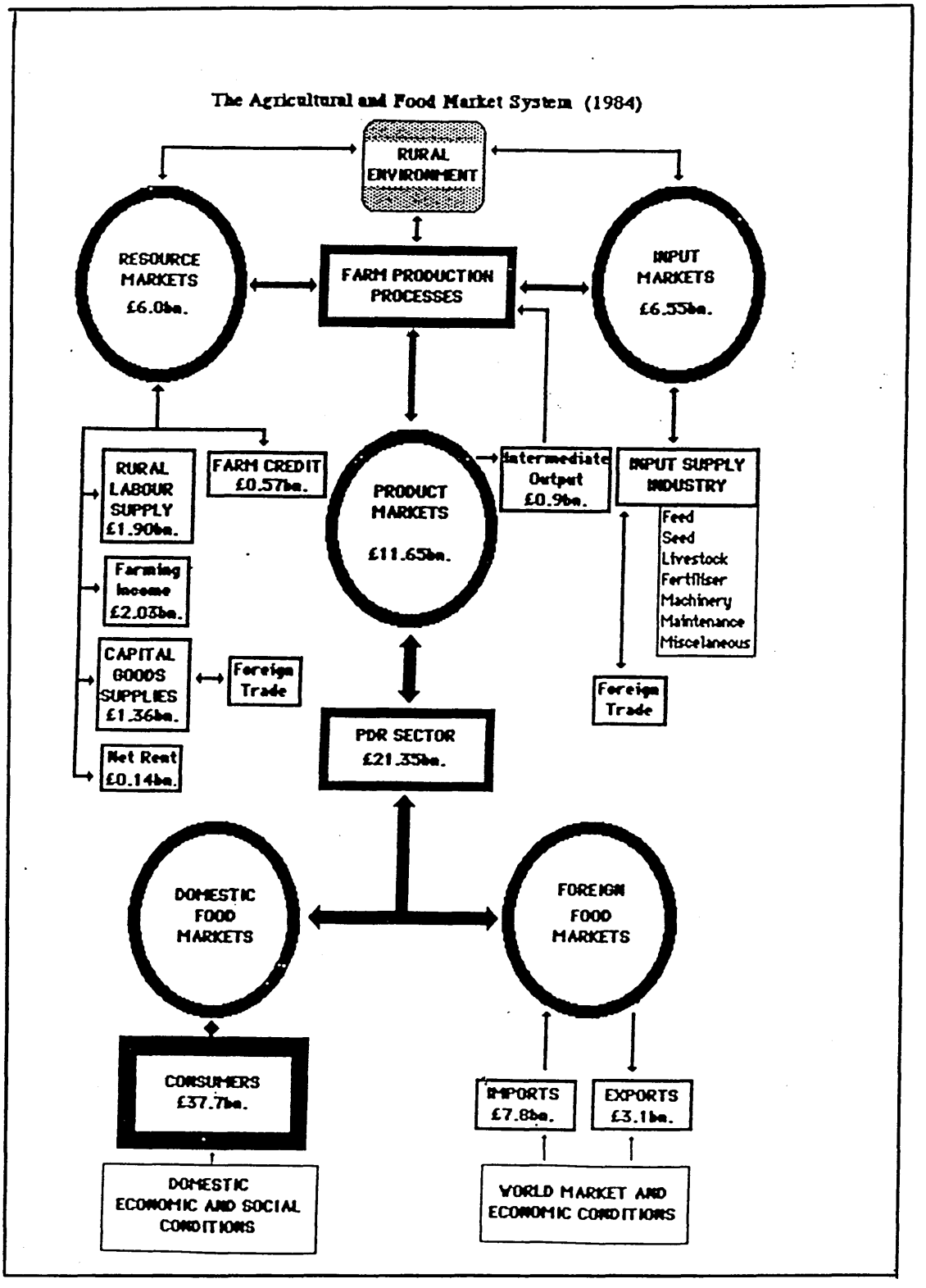
A major problem in the study of organisational change is

that the environmental contexts (Figure 1a) in which organisations exist are themselves changing. This means that they demand consideration for their own sake.

Some features of organisational response to this kind of environment are non-price competition, adoption of a longer term approach to change and survival linked with knowledge of the environment.

The industry is currently not generating sufficient funds to maintain the high standards of operation which it has achieved in recent years. The return on capital and on turnover is now so low that the majority of firms are finding it difficult to compete with other trades in such matters as the recruitment and retention of really able employees. The industry is required to perform an essential task on behalf of the nation and it is fully accepted that this must be undertaken in the most economical manner possible. However, it is clear that nobody benefits from profitability being reduced to such an extent that operating standards cannot be maintained. If the 'labourer is worthy of his hire', then it is generally felt that the wholesale trade has the right to expect an adequate return for its expertise and enterprise and must do so in the long run if the service is to be maintained.

Figure 1a The Agricultural and Food Market System (1984)



Source of data: HMSO, Annual Review of Agriculture, 1986, Cmnd. 9706

For an advanced society to feed itself at minimum cost, an efficient system of distribution is an obvious necessity. This is particularly true of the fresh fruit and vegetable sector, for the perishable nature of the stock presents special problems in procurement, handling and storage.

Utilising the structure-conduct-performance paradigm as a conceptual framework, elements of structure and conduct are described. Drawing from this associations between structure (conduct) and performance are made using marketing margin analysis as a relative measure of efficiency between the two channels of distribution identified.

Despite the limitations of studies of margins, (Wollen and Turner, 1970), as Black (1954) has said, 'We need not only keep close watch on them by setting up procedures for measuring changes in them, but also to account for these changes. This will sometimes point the way towards important research projects needed to be undertaken'.

1. LITERATURE REVIEW

Literature was reviewed to form a sound basis for the development of the research. It has been reviewed in two sections. The first, 1.1 considering issues concerning the distribution of fresh fruit and vegetables and the second, 1.2 reviewing literature concerning agricultural market analysis.

1.1 The Distribution of Fresh Fruit and Vegetables.

Recent developments in marketing policy for fruit and vegetables in Britain chiefly spring from the work of the Government Committee under Lord Runciman which reported in 1957. The Runciman report commended the trade for carrying out their difficult work efficiently. It observed the trade in fruit and vegetable distribution and belied criticism, which was based on lack of knowledge of the real problems of the trade, of the supposed high cost of distribution. These costs were accepted as moderate and profit margins were not found to be excessive. It was agreed that the wholesale trade carried out well its main function, of matching supply and demand, despite irregularities in seasonal supplies and fluctuations within the season. The report concluded that the marketing system was not perfect but the committee could offer no alternative system to take its place.

A study carried out during the mid sixties (Ellis, Hunter

and Kirk (1967), looked at the distribution of fresh fruit from markets to shops. Nearly 40 per cent of the final price of fresh fruit consisted of the cost of distribution from market to shop. Two main systems were reviewed; attendance by the retailer at market and procurement by the retailer from a distributing wholesaler.

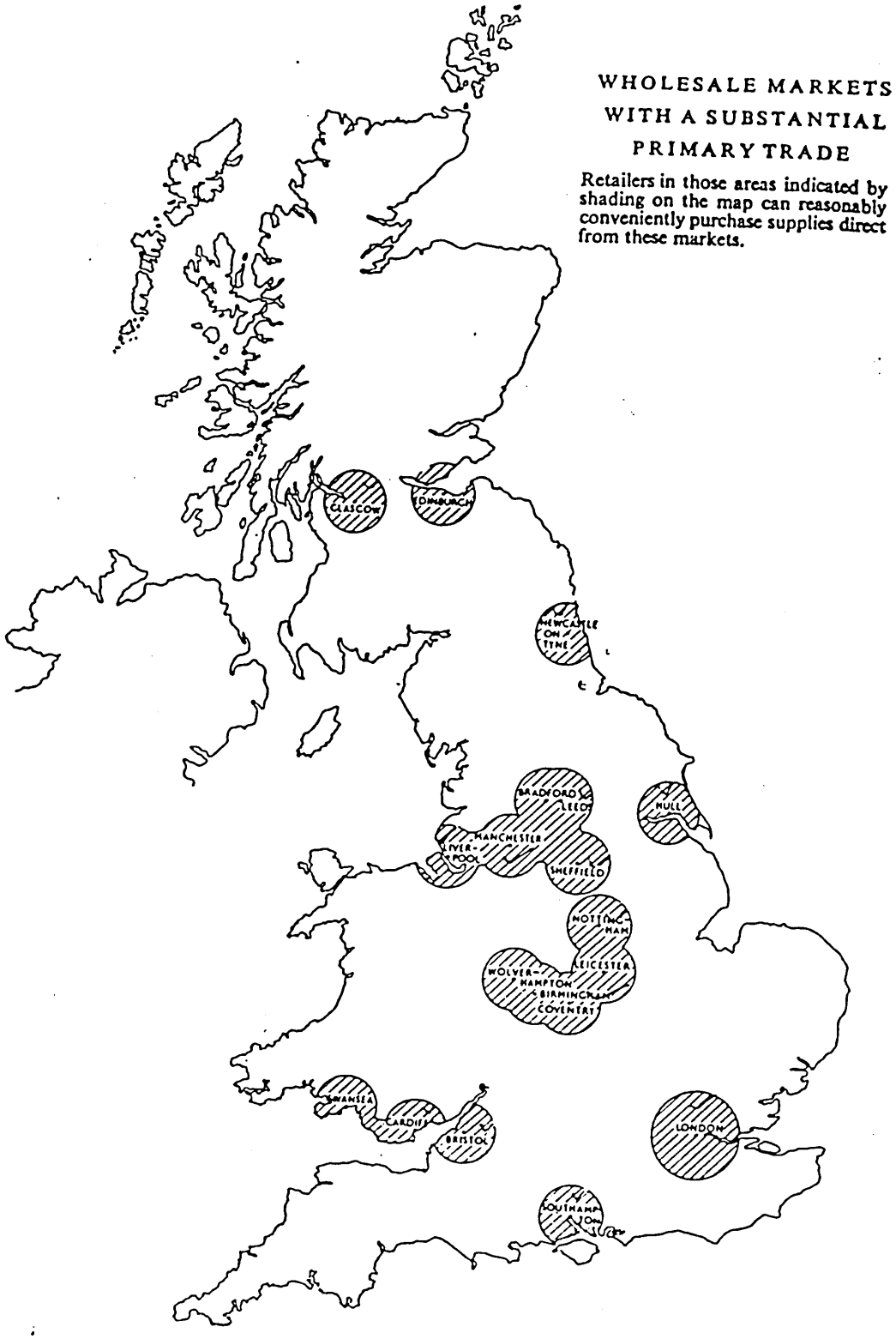
A further study carried out by Kirk and Ellis(1971), looked at the United Kingdom Trade in Imported Fresh Fruit. Highlighted was the strength of the three banana firms - Fyffes, Geest and Jamaican Producers. These firms have extended and diversified into the ownership of many general wholesaling businesses in the horticultural trade. Also recorded was the statement of the fresh fruit boards, which represent and sell on behalf of the producers overseas, (eg. African Citrus Board - Outspan, Israel Citrus Board - Jaffa), that the decision had been made to abstain from direct selling, for example to large supermarkets. A decision which is now reverted.

'Since 1950 the system of wholesale market organisation has changed greatly, largely as a result of the grip which major fruit importers have on distribution and of the changes induced by the increasingly important supermarket mode of retail selling', (Hinton,1976).

In the early 1950's the operation of wholesale marketing depended almost entirely on the traditional activity of the

wholesalers,(Davies,1985). Their function then was to assemble most of the produce marketed and set the first price, breaking down bulk into smaller lots for distribution. Wholesalers are primary or secondary, or both, according to their business operation. Primary wholesalers are concentrated in the major centres of population (see map, figure 2) and communicate and assemble a large range of produce. Secondary wholesalers buy mainly from primary wholesalers, distributing in their own, usually smaller, towns. Up until the late 1960's 80-90% of produce was sent to the primary wholesaler on consignment and sold by him for a commission payment. This was the traditional method of price fixing which is now of less importance. The successful marketing of produce under this system depends substantially on mutual trust between the parties to make the best deal possible,(Davies,1985). In 80-90% of cases a grower regularly sends to more than one wholesaler and to several markets. Under the traditional system, the wholesale trade balanced demand and supply much to the advantage of the consumers as a whole. This system was governed according to price and not so much by the quality of the produce or by the service elements in distribution, both of which have become of much greater importance since the early seventies, (Pickard,1978).

Figure 2.



source: HMSO,(1975).

The wholesaling function had to respond to this developing situation. Price was no longer the all-important factor in the wholesale trade. Regular consignments of quality produce became increasingly important, and the wholesaler was judged more for his service than cheapness. Some wholesalers adapted their business to service the supermarkets, specialising in distribution, doing less business themselves on the strictly wholesale side, (Hinton,1976).

By 1975 net and gross margins were falling, due to a number of factors, (Price Commission 1975). Significant cost increases, especially for labour and transport, contributed to the fall. The role of the secondary wholesaler was also becoming less significant, due to the development of vertically integrated specialist groups, with national distribution networks.

Also the increasing concentration of the wholesale trade into companies owned by the larger primary wholesalers, and the reduction in the number of independent retailers on which the secondary wholesaler's business traditionally depends, contributed to the decline.

Pickard (1978) stated that food marketing systems are highly dynamic and subject to virtually continuous adaption to meet the needs of their changing environment. The fact that wholesalers stocked a wide range of quality of

produce, and the supermarkets were quite specific about the quality they demanded, meant there was room for growers to establish co-operative stations. Farmers were (are) unwilling to undertake the investment without the certainty of sale, and equally the supermarket itself requires assured supply. Therefore, contractual arrangements developed between co-operative and supermarket. A change also noted by Gill, (1980), when 30 per cent of home grown produce was sold direct to the supermarket. A figure predicted by wholesalers to have reached 60 per cent by the close of the 1980's.

Competition in food distribution is predicted to remain intense,(trade), and rising oil prices and computer developments will influence change. Current trends indicate that the large supermarkets will take an increasing share of goods trade. The adoption of the free-flow, self-selection system, is thought to be taking business from the specialist greengrocer/fruiterer. Since it is the younger rather than the older woman/man who tends to use the supermarkets and superstores, they are likely to gain more business as years go by, (Tanburn,1981).

As a result of high quality specifications of the supermarkets much of the best produce will by-pass the wholesale markets. Thus the role of wholesalers in the market place will change and the volume of business they

handle will decline. Distribution by the retailer is thought to be quicker than other methods, an essential for such highly perishable goods, allowing firm control to be kept on quality. Control of quality is seen as crucial to ensuring the consumer is offered the product the company believes is required. Quality is monitored throughout distribution - when the crop is being grown, bought, at depot and in store. Cool chain distribution is demanded for the supply of produce to the multiple retailers. This requires a large investment and risk for a wholesaler aiming to satisfy the need of his customers,(Davies,1985).

Advice put forward to growers from a major multiple, 'British growers and their organisations should look much more to the needs of the major chains, who reflect public demand and taste, rather than adopt an introspective and defensive attitude. Changes are taking place all around them, but they chose to ignore the fact.'(Barletta,1985).

A point contested by the marketing director of Samuel Jackson Growers Ltd. 'Breaking into the supermarket supply game is not easy. Poor prices on the wholesale markets two years ago, 1983, caused by general over production meant that profits were not reasonable. We were prepared to do anything to get into the supermarkets, but response was poor.' Having failed with the direct approach Mr. Jackson arranged with the Co-operative Grower Marketing

Services to supply bulk and pre-packed produce for supermarket outlets. It was a success. The new outlet is welcomed but he has retained his traditional ones - the wholesale markets. Ten per cent of business has gone to supermarkets and expansion of business will be in that direction.(Barletta,1985).

A survey carried out in 1984, by University College, Wales, of multiple retailers, indicated possible new openings for the wholesalers, particularly in proximity to centres of ethnic communities. None of the multiple retailers interviewed were interested, for example in Asian supplies, unlesss they become popular with a significant segment of their non-ethnic clientele.

The Key Note report, 1985, indicated there are a number of small firms specialising in imigrant produce, owned and run mainly by Asians and West Indians, located in the main imigrant settlement areas of South London, Birmingham, Bradford, Manchester and Leicester.

The market power of the supermakets is also highlighted by Sturgess, 1984, considering the effects of the development of supermarket chains on agriculture in the United Kingdom. Effects are divided between those of the introduction of the self-service one-stop outlet and the increased concentration of control of grocery retailing. The influence on quality has been largely beneficial to the

final consumer, however the influence on vertical integration, price discovery and on production practices and structure have been less than were widely anticipated twenty years ago.

At the 1984 National Federation of Fruit and Potato Trades Conference, the situation of the wholesalers was a major issue. Liz Hamilton-Harding of Outspan noted the contraction of the independent retail sectors from 22,000 in 1965, to 13,000 in 1984, attributable to a changing lifestyle .

'But is that the way we want it to go?' she asked - '80 per cent into the hands of some 30 customers.' It would mean the death of many wholesale markets, and a squeezing of profit margins. 'I believe it is worth striving to help keep the good independent retailer in business.' The trade needs to change its own attitudes to fresh produce, stressing the value for money and health giving aspects of fresh fruit and vegetables. Wholesalers should be selling, not just serving. One idea put forward at the 1984 conference was the possibility of wholesalers introducing their own credit card system for their customers - and with it offer advantages not available to casual buyers.

'The wholesale markets still bear the brunt of criticism by suppliers and the trade press even though it takes three groups - the supplier, the wholesaler and the buyer - to

make a market', said Alan McCutchien, as chairman of the Covent Garden Market Tenants' Association.

In what appeared to be criticism of the quality of produce sent to markets by producers, he said, 'We get out of the markets precisely what we put into them. The wholesaler must receive continuity of supply of produce, graded to standards that conform to ministry regulations. It is essential that a supplier who wishes to use the wholesale market system ensures that he makes available sufficient class I produce to meet demand, as well as sending his lower grades. The supplier who only uses the markets when he is at peak availability of supply, or when his produce is rejected elsewhere, is of no value to the wholesale market. The situation should not be allowed to continue.'

Confidence between the supplier and wholesaler is imperative, along with strong and effective management,(Parker,1985).

The topic of fixed commission rates in a fluctuating market was defended by Mr McCutchien,(F.T.J. 1984), who said that in his opinion, it would be a 'retrograde step for all sectors of our industry if it were not to continue,' since it would remove the direct link between the selling price and place the cost price down to the negotiative skills of the buyer and seller.

'However I believe that a review of commission selling terms is long overdue and an increase in commission rates must be forthcoming. The current rates do not allow for an economical return on the capital investment in a wholesale company'. It was not until the late 1960's when inflation became rampant, that pressures were put on this system, resulting in a weakening of confidence. In 1963 commission rates ranged from five to ten per cent. In 1985 rates still varied from five to ten per cent, (Appendix 2). The wholesaler has trimmed his costs; he is constantly striving to increase his business, in order to cover inflation alone. 'Contrary to popular opinion I can state that the volume of business being achieved by the progressive traders in wholesale markets is growing annually',(Parker,1985).

The view of David Thorburn,(Home Grown Fruits Chief Executive), was somewhat different. 'The price fixing role of the markets is nearly over. Let the producers and their organisations have that responsibility and let the wholesaler concentrate on selling and providing a full range of services to suppliers and retailers. The strength of the multiple business is not in their buying power but in their willingness to commit and agree to a planned programme and price', (F.T.J. Oct.1985).

'The successful wholesalers will be those initiating the changes, suggesting fresh approaches to marketing to his

suppliers and customers. Both suppliers and retailers need the wholesaler, so this is a position of strength'. Douglas Kemp, managing director of a major distribution company, questions the ability of the wholesale markets to cope with the future problem of trade. 'Will they remain the vibrant barometers of pricing affected by supply and demand or be eventually relegated to windswept concrete follies?'

'I do not believe that for English produce, these primary markets are required for the breakdown and distribution of bulk. In attempting to retain that position they are responsible for more distortion and bad prices within our industry, except perhaps the shippers and growers who continue to overload them', (Parker,1985).

While still recognising the need for this aspect of distribution, he placed his fault on the strength of the secondary distribution level, often linked to depots.

Tony Wolff of the Mack Group,(1984), defended the plight of the wholesalers. 'Wholesale markets are still a valid plank of distribution, since they maintain the balance of trade between the two sectors'.

Away from the issues of supply, a concern is shown for consumer demand. The majority of consumers recognise that

fresh fruit and vegetables are good for them but only ten per cent act on their beliefs according to the Fresh Fruit and Vegetable Information Bureau,(1986). When asked most people said they should cut out confectionery, chocolate, sugar, cakes, puddings, crisps and cream, but only a small proportion actually do.

Technological changes, such as the development of frozen fruit, have also brought changes in demand, with the appeal of convenience, (Tanburn,1981).

1984 saw the tenth anniversary of the New Covent Garden Market and there can be no doubt that the volume of trade has increased since 1974. The major problems of the old market were its potential inaccessibility to the articulated and refrigerated lorries, which now form a considerable proportion of trade in produce delivery. Furthermore the increasing use of mechanised handling, an important factor for volume trading, played its part in that the old market was not suited to the forklift trucks, then being adopted widely elsewhere, (F.T.J. Oct 1984).

It remains the UK's largest wholesale market and there is a belief among the traders that there will always be a Covent Garden. It may not necessarily be the same size or the same form, as it is now but it will be there, (F.T.J.Oct 1984).

The traders have there own views. Denis Sheer of Vembray Ltd. recognised the wholesale markets as being in danger of

being used as a dumping ground. 'Rather than growers saying;"this is what we have", we need more organisation in order to compete with the multiples. Growers and wholesalers need to get their heads out of the sand. Trade will continue to decline until the wholesalers are in a position to educate the producer as to what is required. This is where the multiples have succeeded and is the basis of their success. If the supermarkets can do it why can't we?'

Louis Reece have the following to say on the issue. 'While markets have a vital function, their very manner of operation with early morning hours and a multitude of buyers, makes it very difficult to create a progressive image'. Fruit markets are a service industry and therefore do not fit into the more instantaneous world of public relations and advertising .

'But we are far more than purveyors of fruit. Just as critical is the information and the two way contact which firms have to build to keep both their suppliers and retail customers in the picture', (Parker,1985).

In her new year report for 1985, Sheila Brandon (Fruit Trades Journal) viewed the next year coupled with the next decade, with accute alarm for the fruit trade in general. 'If producers are willing to sell produce at a low price, for whatever reason, it is bad news for the wholesale market and good news for the multiples. Wholesale markets

need a percentage turnover to survive and if the traditional high priced gear tumbles, then so does their commission or profit, if buying on a firm price basis. The multiples and processors, it being a buyers market, set up contracts which allow them to squeeze profit margins. It is not surprising producers are falling over themselves to get direct sales outlets to avoid the uncertainty of the wholesale markets.'

In February 1985, Sir John Wells MP, produced a Government report on the markets in London. The recommendations of the report are based on the committee's belief that while wholesale markets will continue to have a useful function, there will be a decline in their use, because of increasing direct trading with supermarkets.

The key to the MP's views, however, is the belief that modern markets must be sited as often as possible on the new motorway routes, which would afford easy access and minimum of traffic disruption. 'We have seen the decline and consequent over capacity of markets in London, now reflected by their underutilisation. Yet they are essential to retain a national price fixing system which must continue'.

It is therefore believed that it is not a question of too many wholesale markets, but too many wholesalers in the markets.

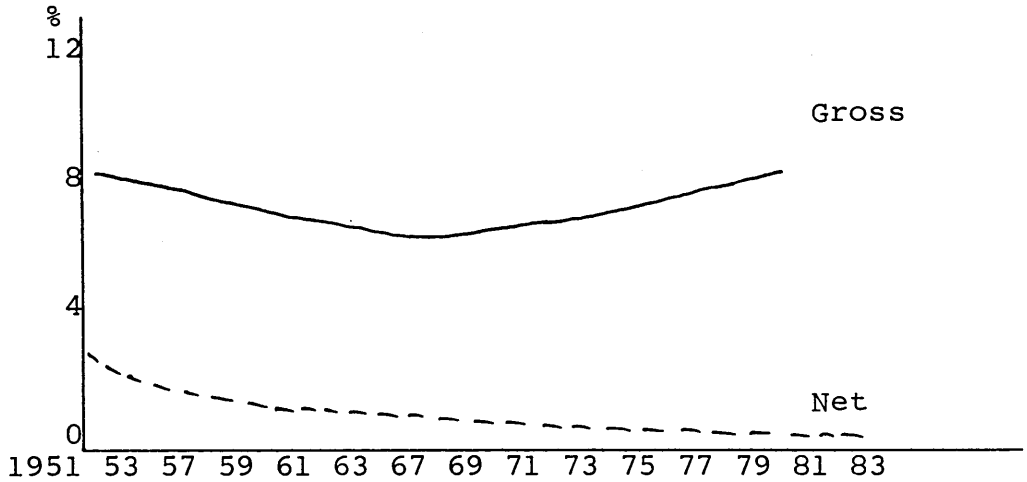
The most recent study, published in April 1985, was

commissioned by the National Federation of Fruit and Potato Trades. The Federation wanted to create a document which could hold up a mirror to the trade, so it could decide for itself what it wanted to do.

The report was produced by Dr. Peter Davies, a Liverpool Economist, who says unless prompt co-operative action is taken by the wholesale market trade, profit margins will remain depressed for many years to come.

The report indicated that gross margins have fallen from an average of 12 per cent in 1951 to 10 per cent in 1983. Net profits for the same companies have fallen to a greater extent - 2.7 per cent in 1951 to 0.37 per cent in 1983. Illustrated in Figure 3.

Figure 3. Average Profitability in Primary Wholesale Markets of Fruit and Vegetables.

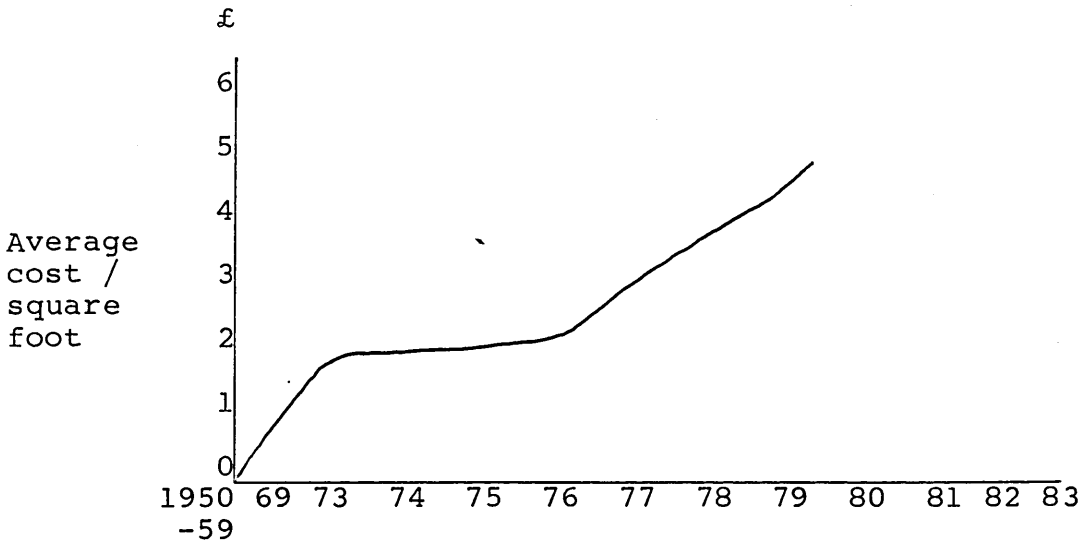


Source: Davies,1985(Compiled from sample survey)

A contributing factor to reduced levels of profit, is the cost of premises, including rent, rates and service charge where applicable, illustrated in figure 4. Also labour and

distribution costs have risen at a higher rate than inflation and respective returns. Once the decision has been made to move or upgrade a market the individual wholesaler has lost control of his costs and has to accept the terms and conditions set by the local authorities. Costs have also risen more rapidly than the price of fruit and vegetables indicated in table 4, section 4.3.1.

Figure 4. Cost of Wholesale premises including rent, rates and service charge where applicable.



Source: Davies,1985.

The direct (by-passing markets) sector has expanded its business since 1950 when 90 per cent of produce went through the markets. The figure is now nearer 50 per cent.

The wholesalers' gross income is largely determined by a combination of the rate of commission, level of prices and amount of throughput. Reduced revenue has occurred as a result of the following factors:- fruit and vegetable prices have increased at lower rates than inflation; a

substantial part of trade has been lost to direct sales; commission rates offered by most larger grower co-operatives/marketing boards, have remained vitually static since their introduction. They may even have fallen in some cases and do not reflect the enhanced services and standards provided by their panelists. All markets have excess capacity.

The industry has a lower barrier of entry in comparison to most industries, so where companies have been forced to drop out, a number of new firms have entered the industry, so the average size of the industry has probably remained constant in real terms.

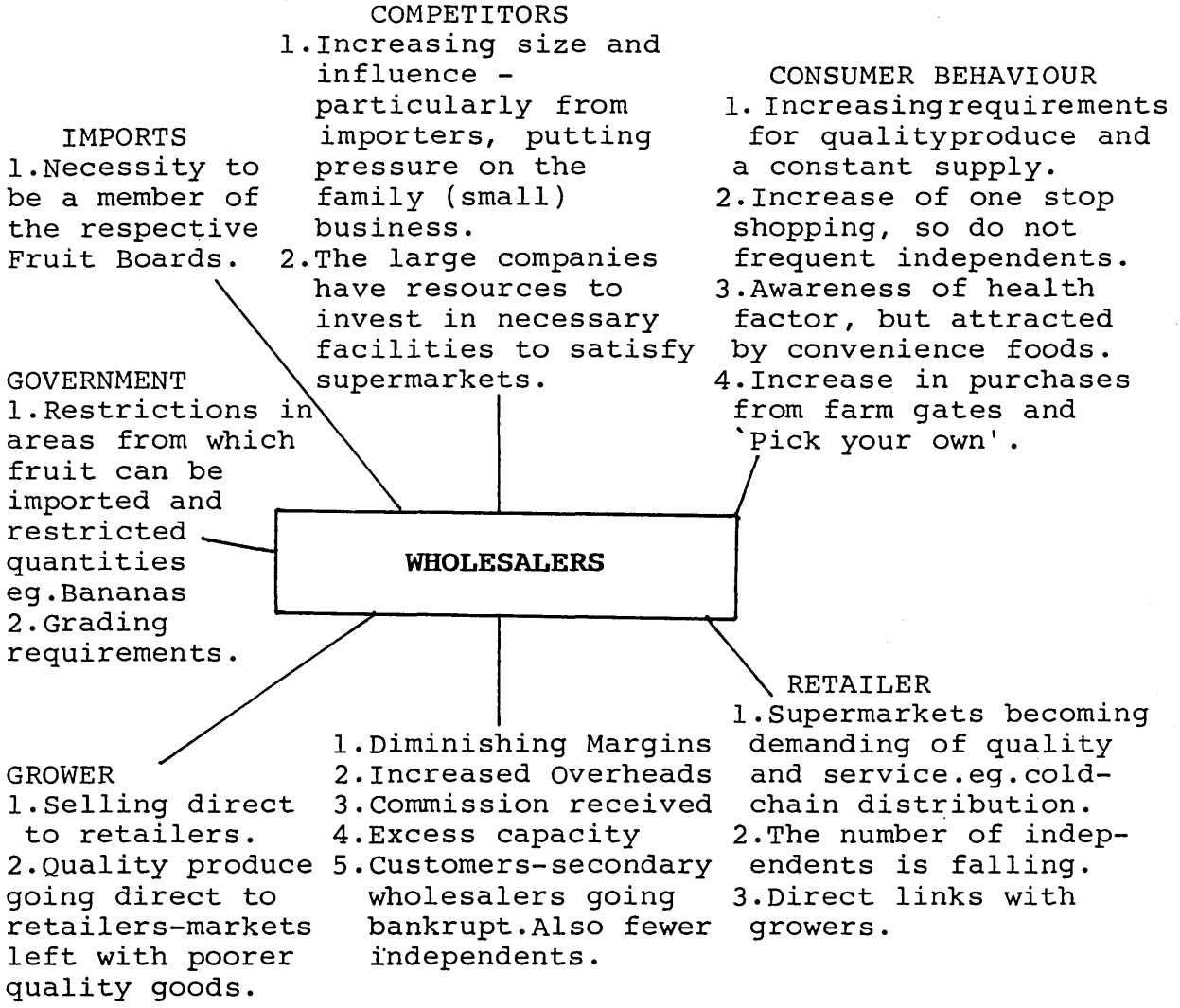
From his eighteen conclusions Davies(1985) says a solution can be found only by increasing the rates of commission as price levels on the markets and company throughput are both outside the control of traders.

1.1.1 A Summary of the changing environment of the fruit and vegetable wholesaler.

The literature reviewed generates a turbulent 'picture' of the industry, particularly from the perspective of the wholesaler. Figure 5 provides a summary of the issues that have been identified.

Figure 5.

A Summary of the Changing Environment of the Fruit and Vegetable Wholesaler.



1.2 Agricultural Marketing.

1.2.1 Nature of the Analysis

Agricultural marketing in Britain has been primarily concerned with government policies towards distribution and processing of farm produce; the theoretical framework on which it rests is that of economics. The orientation of agricultural marketing studies until very recently has been too restricted in that they have given insufficient attention either to marketing as a business subject or to 'social marketing'; and the behavioural sciences are a necessary complement to economics as a theoretical framework for studies in agricultural marketing, (Ritson, 1986).

The study of agricultural marketing in Britain derived much of its impetus between the wars from the problem of low farm prices. A considerable number of official enquiries into these problems produced recommendations with a continuing theme (Linlithgow Report,1923 and 1924): the low prices were believed to be associated with inefficiences in the distribution of agricultural produce from farmer to consumer, with farmers' inadequate bargaining power and with the lack of grading of agricultural produce. The solutions were considered to lie in the hands of governments (at least in the first instance) rather than of farmers themselves and institutional means such as marketing boards, generating a means of standardisation. Thus, agricultural marketing was strongly oriented towards

logistics and towards policy. The view that marketing problems are synonymous with low farm prices and with rapacious middlemen and that the government should do something about it, is still prevalent amongst farmers. But not only farmers; Allen (1959) writes 'marketing' and 'distribution' are used synonymously except where the context clearly indicates otherwise. More recently, Khols (1961), says 'Marketing is the performance of all business activities in the flow of goods and services from the point of initial agricultural production until they are in the hands of the ultimate consumer'. These restricted approaches to agricultural marketing are in sharp contrast with those commonly adopted in relation to the marketing of non-agricultural products.

Marketing has become an academic subject in Britain only since about 1960,(Bateman,1971). The central idea is the marketing concept - the idea that the customer is not mearly the person who happens to be at the end of the line but that his needs and wants should dominate the whole pattern of the activity within the firm (Levitt,1960); firms should be market oriented rather than product oriented. Implicit in the marketing concept is the idea of market segmentation, that is, of producing goods and services specifically designed to meet the needs of selected groups of prospective customers,(or market segments). In this context, 'designed' refers partly to the physical product and its packaging: product planning

and development is thus concerned with the firms need to adapt the product for new markets, to modify the product to maintain its stability for the existing markets and to search out new products. 'Designed' also refers to characteristics associated with the physical product - promotion (including personal selling, merchandising, advertising), distribution (logistics and channel selection) and price. Furthermore, in trying to find optimal strategies in relation to each of these decision-variables, the firm has to recognise that they cannot be considered independently: the optimal distribution channel, price, type of product and promotion are interdependent and the firm must seek the best combination of them, ie.the optimal marketing mix. The market-oriented firm must take account not only the needs of the final consumers but also of the intermediaries (wholesalers, retailers, shop assistants etc.).

Marketing has developed as a business discipline concerned essentially with business decisions and business objectives. Agricultural marketing has developed primarily as a policy subject concerned with governmental intervention.

There are obvious reasons why studies of agricultural marketing, concerned as they have been with farmers' problems, have paid relatively little attention to business aspects of the subject, (Bateman,1971). Farmers'

opportunities for applying the marketing concept have been considered limited by the size of their enterprises (which preclude those marketing activities involving substantial economies of scale) and by the biological nature of production (which generally militates against the production of the precise qualities required by consumers). This does not mean that there is no room at all for farmers and farm advisors to make use of ideas from marketing (Carpenter,1972; OECD,1966). The limitations can to some extent be overcome by structural changes, including co-operation which allows benefits as a result of scale economies and a large stock holding. Farmers' marketing activities are sometimes construed as being limited by the fact that farmers do not sell direct to consumers; it can be noted that neither do most food processing firms. Produce is also considered by some to be homogenous. This may be true to an extent from the perspective of the consumer, but quality, packaging and means of distribution differentiate produce from the perspective of the retailer (in particular the retail multiples). The firm may also have a quality dimension (eg a quality brand) differentiating one firm's produce from another.

Logistics are one of the major areas studied by marketing generally - reflecting the belief that this is quantitatively the most important area and it is the area most open to influence by policy makers. It is only recently that this area has begun to receive serious

attention outside agricultural marketing: 'distribution is the economy's last dark continent..... a crucial management issue of the seventies', (Christopher and Wills,1972).

The optimality or otherwise of any marketing decision made by a firm is not independent of the marketing environment within which the firm operates. One aspect of the environment is government policy - both the descriptive aspect (what legislation exists at present) and the more fundamental issue of why the policy is what it is. Thus, policy (the subject matter of traditional agricultural marketing) overlaps with what in the context of more recent marketing thought would be called the marketing environment.

These ideas suggest that agricultural marketing can be viewed as a business subject, as a policy subject and as an aspect of social marketing. Agriculture does have peculiarities - the biological nature of production and its dispersed nature, its market forms and traditionally long distribution channels and consequent information problems for producers (and intermediaries), the organisations which have been created to deal with these problems and the extent of available data.

1.2.2 The Structure-Conduct-Performance Paradigm

The traditional subject matter of 'agricultural marketing'

has been the assessment of marketing performance. The problems involved in developing principles for assessing marketing performance and criteria for intervention are not unique to agricultural and food industries. The structure - conduct - performance approach is described in texts such as Bain (1959), Caves (1967), Scherer (1970) and its applicability in the context of agricultural marketing has been argued by Clodius and Mueller (1961), Moore and Walsh (1966), Farris (1964), Metcalf (1969), Smith (1981). In practice few studies in Britain have formally used structure - conduct - performance analysis in relation to food marketing, though it is implicit in them (eg. Smith,1964); in the U.S. the formal methodology is normal, (eg. Reports of the National Commission on Food Marketing,1966).

The most widely accepted body of theory argues that the structure of an industry influences or determines the conduct or market behaviour of firms in that industry. The actual performance of the industry then derives from the effects of the market behaviour of the firms in that industry.

Before undertaking an examination of the links between elements of market structure, conduct and selected criteria of market performance, the origins upon which market structure analysis is based should be noted.

Chamberlin(1933),provided a sophisticated classification of main and subsidiary forms of market structure and examined the theoretical relationships between the different industrial structures and the performance in terms of prices, profits, advertising and efficiency that each generated. Chamberlin in this way provided the basis upon which economists, in particular Mason and Bain, could generate empirically testable hypotheses about the structure - performance relationship. Introducing such realistic aspects as product differentiation, product change and selling costs, allowed subsequent researchers to integrate theoretical models with the institutional approaches, marketing studies and descriptive price and profit studies.

Market structure analysis generally assumes that the level of concentration, condition of entry and extent of product differentiation are the most important variables, (Stern and Grabner,1970).

From market structure analysis we can turn to the possible links between structure and performance. Bain (1968), suggested the following criteria; economic efficiency, technical efficiency, selling costs, product performance and technical progress, income distribution and full employment.

The notion that market structure influences various aspects

of performance is not a recent conception. Despite the obvious expectation that this influence would be susceptible to empirical verification, empirical efforts have been frequently inconclusive, conflicting or tenuous.

Given the present body of knowledge on the subject, the strongest links, from an a priori perspective, involve the structural elements of seller concentration and barriers to entry and the performance criteria of economic and technical efficiency. Other links are either nebulous, contradictory or nonexistent. Kaysen and Turner's (1959) insight provides a fitting concluding statement with regard to the relationship between market structure and the performance goals of efficiency in the use of resources; progress; stability in output and employment; and an equitable distribution of income:

> 'Not all of this quartet of virtues are connected to the functioning of markets in an equally intimate way. Efficiency is most closely dependent on the operation of markets. While the existence and character of market competition is one of the forces influencing the pace of innovation, it is only one; and others including the supply and training of technical personnel, the expenditure by government on industrial research, the attitude of consumers toward new products and of managements and workers toward new methods of production, are in the aggregate of greater importance. To the extent that an equitable distribution of income implies the passing along of the fruits of efficiency and progress to consumers, it is related to the functioning of markets. To the important extent that the idea of equity involves judgements that some income receivers should receive more and some less than they could get from the market - no matter how competitive - equity must be sought by policies... other than those which affect the operation of markets. Finally, fluctuations in output and employment are primarily responses to fluctuations in aggregate demand rather

than to events in particular markets and again, policies designed to promote stability find their primary means outside the sphere of market organization.'

The essence of this approach is the determination of the efficiency of a given marketing system. An analytical approach provides a suitable framework for the analysis of marketing problems, which according to Shepherd (1962) involves such aspects as:-

(i) the study of changes in demand with respect to time, place and form;

(ii) the reflection of consumers' preferences on one hand and producers' and distributors' costs on the other;

(iii) the appraisal of the optimum size of the market units and the costs of marketing and the methods of reducing them.

The term marketing efficiency may be defined simply as the maximisation of the input-output ratio, (output being derived satisfaction). The inputs of marketing are the various resources of labour, capital and enterprise that are employed in performing the various marketing services while the outputs of marketing infer to the satisfaction derived from the consumption of those goods and services (Khols, 1961).

The aim of overall marketing efficiency is to provide goods to the consumer in the required form, at the required time and place with the lowest possible marketing costs consistent with the interests of the producer. The

principal means of ensuring that the lower cost and or improved services resulted through efficient marketing are passed on to producer and/or to consumer, is the pressure of competition.

Doubts concerning the competitive model's utility as a policy guide prompted a search during the 1940s and 1950s for more operational norms of "workable competition". The coiner of this phrase was Clark(1940) who observed that perfect competition 'does not and cannot exist and has presumably never existed' and that the competitive model of theory affords no reliable standard for judging the real world conditions. This gave rise to a series of articles on workable competition comprehensively reviewed by Sosnick(1958). Sosnick also developed a list of qualitative elements that might be included in setting up a 'workably' competitive norm. He divides the requirements into structural, conduct, and performance categories.

Structural norms include the following:

(i) The number of traders should be at least as large as scale economies permit.

(ii) Moderate and price sensitive quality differentials in the products offered.

(iii) No artificial barriers to entry.

(iv) Adequate access to information.

Conduct criteria include:

(i) Some uncertainty as to whether a price reduction will be matched.

(ii) No collusion: but 'conscious' rivalary between firms.

(iii) No unfair exclusionary or predatory tactics.

(iv) Sales promotion not to be misleading.

(v) Inefficient suppliers and customers should not be shielded permanently.

(vi) Persistent, harmful price discrimination should be absent.

Performance Criteria:

(i) Operations should be efficient.

(ii) Promotion expenses should not be excessive.

(iii) Profits should be sufficient to reward investment and to encourage innovation.

(iv) The range of qualities should be responsive to consumer demand.

(v) Opportunities for introducing technically superior new products and processes should be exploited.

(vi) Prices should not intensify cyclical instability.

(vii) Success should accrue to sellers who best serve consumer wants.

In economic literature (Arrow,1951;Pareto,1907; Robinson,1964), the method of approach to welfare and economic efficiencies was Pareto Optimality. Limits to this study restrict the level of performance information

that can be determined, a common situation in industrial economics, therefore for industrial application it is usual to consider a series of indicators of performance believed to be linked to Pareto Optimality, (Clark,1940; Sosnick,1958) as identified above. Given the aims of this study marketing margin analysis has been adopted which includes price, profit and service costs as indicators, thus providing a summary indicator of performance in this particular context. (Marketing margin analysis is discussed in more detail in Section three.)

1.2.4 Summary of the factors significant to the methodology adopted.

1 Agricultural marketing originated in Britain during the 1920s when it was adopted to improve low farm prices - 'marketing' and 'distribution' were used synonymously. More recent definitions identify marketing as the link between a society's needs and its industrial responses. It is the function through which organisations adjust their offerings to the ever changing needs and wants of the market place with a view to making a profit.

2 The problems involved in developing principles for assessing marketing performance are not unique to agricultural and food industries. Structure-conduct-performance analysis is widely accepted as a suitable methodology. The structure of an industry influences or determines the conduct or market behaviour of firms in that industry and the actual performance then derives from the effects of the market behaviour of the firms in that industry.

3 The essence of this approach is the determination of the efficiency of the given marketing system. The aim of overall marketing efficiency is to provide goods to the consumer in the required form, at the required time and place with the lowest possible marketing costs consistent with the interests of the producer.

4 Limits to this study restrict the level of performance information that can be determined, a common situation in industrial economics, therefore for this research a series of indicators of performance are to be considered. Given the aims of this study marketing margin analysis has been adopted which includes price, profit and service costs as indicators.

2. METHODOLOGY

The problems of defining and measuring the economic performance of companies and industries, and the relationship of performance to marketing practices, are anything but new. Economists have been debating the subject since the late eighteenth century and are no closer to agreement than they were then. Much later, when marketing emerged as a seperate field of study, some of the earliest writings in the field dealt with marketing costs and marketing 'efficiency' - key aspects of economic performance.

In this study the basic paradigm adopted to analyse the market environment is the structure, conduct, performance paradigm,(Branson and Norvell,1983).

The most widely accepted body of theory argues that the structure of an industry influences or determines the conduct or market behaviour of firms in that industry. The actual performance of the industry then derives from the effects of the market behaviour of the firms in that industry. (Bain,1959;Caves,1967;Scherer,1970; as discussed in 1.2.)

Wholesalers are at the centre of a changing environment - facing market, technical and infrastructural changes.(Shown Figure 5) These changes in the environment have affected both the basic conditions and structure of the wholesale function and consequently performance in terms of both cost

effectiveness and meeting consumer needs.

2.1 Market Structure

'Market structure for practical purposes means those characteristics of the organisation of a market that seem to exercise a strategic influence on the nature of competition pricing within the market'. (Bain,1968)

The most salient aspects or dimensions of market structure are:

(a) The degree of seller concentration.

(b) The degree of buyer concentration.

(c) The degree of product differentiation.

(d) The condition of entry to the market.

Other important elements include

1. Growth rate of market demand.
2. Price elasticity of demand.
3. Ratio of fixed costs to variable costs.
4. Channels of distribution.
5. Nature of goods.
6. Flexibility of costs.
7. Locational factors.
8. Degree of vertical integration.
9. Degree of diversification.

Source:Bain 1968.

The broader definition of market structure could embrace every objective circumstance - psychological, technological,geographical or institutional - that might conceivably influence market behaviour. However, because

an empirical generalisation about the influence of structure on behaviour is required, the content of 'structure' will not be made so comprehensive that no two markets can be viewed as structurally alike.

Several issues concerning the structure of fresh produce distribution relating to the wholesale markets were highlighted in the literature review, section 1.1.

These are:-

(1)The traditional channel of distribution, from farm via the wholesale markets to the retailers, now faces increasing competition as an alternative channel has evolved whereby the farmers distribute directly to the retailers, thus by-passing the wholesale markets.

(2)Concentration of the retail sector, with four or five major multiples accounting for about one third of fresh fruit and vegetable sales and a reduced number of independent retailers, has resulted in many wholesalers going out of business.

(3)Overall market demand for fresh fruit and vegetables is static, with the consumer demanding increasing standards of quality. Wholesalers are receiving high quantities of class II produce from British growers due to the growers preferring to sell the majority of their class I produce directly to the multiple retailers.

(4)Technological developments, such as cool chain

distribution, have been a necessary investment to permit supply to the large retailers. It is only the larger wholesalers with the capital backing who can afford this investment, consequently leaving the remaining (majority of) wholesalers operating within the traditional channel of distribution.

2.2 MARKET CONDUCT

Conduct refers to the patterns of behaviour which enterprises follow in adapting or adjusting to the markets in which they sell or buy.

The dimensions of market conduct include:-

1. Methods employed by the firm or group of firms in determining price and output.
2. Product policy.
3. Sales promotion policy.
4. Means of coordination and cross adaptation of price, product and sales promotion policies among competing firms.
5. Presence or absence of and extent of, predatory or exclusionary tactics directed against established rivals or potential entrants.(Bain,1968).

Examples of market conduct identified are concerned with pricing. Traditionally the wholesalers operated on a commission basis, receiving a percentage of the price they achieved. Growers are now encouraging sales on a firm price basis, so the wholesalers absorb the risk of non

sale. (Where commission selling still operates, regular contact is maintained with suppliers who will compare the prices they are getting around the country and will tell the wholesalers to increase or decrease prices if necessary, thus undermining the judgement of the wholesaler in balancing supply with demand on their market that day.)

Where growers sell directly to the retailers the wholesale markets are still used as a barometer for price setting; daily market prices being monitored by both grower and retailer to influence their pricing decisions.

Co-operative producer groups have also been established to increase the growers' bargaining power to the channels of distribution.

Actual patterns of market conduct can be defined to permit an empirically meaningful association between market conduct and market structure. Personal discussion and a questionnaire were utilised for the purpose of data collection. Associations between market conduct and market performance cannot be fully measured to permit meaningful association, thus it became expedient to look for associations between market structure and market performance. Elements of structure can readily be measured and some aspects of performance are measureable, therefore it is possible to observe empirical links. In this case two parallel channels of distribution have been identified within the industry structure, and the relative performance

of the two channels can be determined using marketing margin analysis.

Market structure and conduct of the grower, wholesaler and retailer are discussed in chapter 4 and the elements of causal relationships between structure-conduct and performance are discussed in chapter 6.

2.3 MARKET PERFORMANCE

Performance, as Bain defines the term, 'is the crucial indicator of how well the market activity of firms has contributed to the enhancement of the general material welfare'.

Society is concerned with how well an industry performs in terms of its efficiency, progressiveness, stability and so forth. This stage aims to assess the relative performances of the two channels of distribution which have developed - the traditional channel via the wholesale markets and the channel of direct selling between grower/grower co-operative and retail multiple.

The method adopted to assess the relative efficiences of the two channels is marketing margin analysis.
Briefly, marketing margin analysis assesses efficiency by the size of the share which the producer obtains in the ultimate price paid by the consumer and the margins and costs incurred at each stage in the distribution channel. In fact the price spread is a broad spectrum which discloses the proportions of various components of the

marketing cost of the produce and thus explains the variance between the prices received by the producers and paid by the consumers. (A more detailed explanation can be found in chapter 3.)

Undoubtedly with this method there are factors needing particular attention:-

THE PRODUCT

For a comparison to be made between the distribution of produce via the different channels the produce in question needs to be the same,ie. the same quality and in the same packaging. Apples (Cox,classI), Pears(Conference,classI), Carrots(English,classI) and Cucumbers(classI) were selected as the produce sample (following advice from MAFF and practitioners regarding information availability) and growers were identified who supplied similar produce to both the wholesale and multiple retail sectors. In this way the produce as it entered the channel of distribution was similar.

SEASONALITY

Seasonality has a greater effect over the year on the margins of the wholesaler and independent retailer. The wholesalers in times of glut having to sell at minimal prices and in times of shortage selling at premiums. Potentially, significant fluctuations can occur throughout the year. Conversely the multiples stabilise seasonal price fluctuations by setting contracts with their suppliers, setting a price for a particular period of

time, thus reducing the volatility of prices. To a large extent seasonal price variations are also reduced as a result of extended growing seasons and substitutability of imported produce, reducing gluts and shortages, consequently stabilising prices. Strong competition also ensures that when prices fall or rise, the price to the consumer follows suit so the margins at each stage of distribution are relatively stable.

We have assumed that structure/conduct is stable and that relative performance is a consistent relationship throughout the year thus permitting the study of the one variable, the comparison of efficiency between the two channels of distribution. Further we have assumed that as data is being viewed across the channels at the same point in time, October 1985, the affects of seasonality can be left as an area identified requiring further research. For the items of produce selected to be studied, October represented a time when the markets are normally cleared without excessive price fluctuations or abnormal sources of supply,(supported by advice from trade sources).

SERVICES PROVIDED

For a direct comparison of the margins at different stages of distribution, it is necessary that the range of services provided by each channel are similar. As far as possible this has been taken into account but for example where the multiples offer a much greater range of food and non food items, this extra service has to be considered relative to

the higher margins achieved by the multiple retailer over the independent retailer. Taking these issues into consideration the data collected from the selected growers, wholesalers and retailers can only serve as an illustration of performance rather than conclusive evidence. The data serves as an 'indicator' not a definitive measure, as profit is not a unique performance indicator and the analysis of profit data is never completely unambiguous.

More detailed discussion of marketing margins appears in the following chapter.

2.4 DATA COLLECTION

Both empirical and secondary data collection methods were utilised to establish the structure of the broad environment of the wholesale markets.

2.4.1 Empirical data collection.

The technique that was adopted to establish structure and conduct was a combination of postal questionnaires and personal interviews on random samples of growers, wholesalers and retailers.

There are approximately 1200 fruit and vegetable wholesalers in the United Kingdom, with a turnover of approximately £2000 million.(Keynote Publication,1985). Eighty per cent (by value) of these are registered with the National Federation of Fruit and Potato Trades - listed in their 1986 handbook.

The survey, carried out in March 1986, was of a stratified random sample of 300 wholesalers from the 627 Federation members. This represented about 50 per cent of total turnover in value terms. (The probability of selection of each firm being proportional to the number of branches). The focus of the survey, reflected in both the sampling frame and the questionnaire was on those wholesaling operations most likely to be conducted at central markets. (Further details concerning questionnaire design and sample selection can be found in Appendix 4.)
[The population sampled consisted of 87 multiple organisations, with 347 branches in total and 540 single-branch firms.]

In a similar way using trade directories, random samples of 300 growers and 300 retailers were surveyed.(See Appendix 4)

The sample of growers included farms ranging in size from for example, an independent apple grower with 12 acres of trees to large co-operative organisations with a few thousand acres. In order to establish a greater degree of precision from the questionnaires, following advice from the MAFF agricultural services regarding information availability, the following items of British produce were selected for investigation:- Cox and Bramley apples, Conference pears, Strawberries, Carrots, Cauliflower and Cabbage. Table 1 shows the sample structure more precisely.

Table 1 . The Sample Structure of the Growers

Acreage	< 100	100- 250	250- 750	750- 1000	1000+
PRODUCE					
Apples	17	21			3
Pears	5	8			
Strawberry		6			
Carrots		5			
Cauliflow.	5		9		
Cabbage	21				

%of Growers

The sample structure of the retail sector is indicated in the following table.

TABLE 2. Retail Sample Structure

	(% of Sample)
Independent Greengrocer,one outlet	33%
Independent Greengrocer,several outlets	35%
Independent Grocer,one outlet	14%
Independent Grocer,several outlets	10%
Chain Supermarket(eg Spar)	4%
Multiple Retailer	2%
Farm Shop	2%

The Questionnaires (Appendix 4) were designed to give both quantitative and qualitative details about each individual business, to reflect the structure and conduct of the industry. (The turnover figure was used as an indicator of company size.) Following the advice from MAFF the

practitioners were questioned on specific items of British produce, (Cox and Bramley apples, Conference Pears, Strawberries, Carrots, Cauliflower and Cabbages), to give representitive results within the wholesale market environment.

Following the success of a pilot survey in February 1986 it was considered that a reasonably satisfactory data base had been established and the main survey was conducted during March and April.

The response rate for the questionnaires was 43% from wholesalers,(representing 35% of turnover) 37% from the retailers (representing 23% of turnover) and 33% from the growers (representing 18% of turnover).

The data for use in determining the marketing margins was collected using data sheets (Appendix 5, Exhibit 2) completed by selected growers, wholesalers and retailers, complying with the criteria set out in 2.3, surveying Cox apples, Conference pears, Carrots and Cucumbers. Chapter 5 and Appendix 4 include greater detail regarding survey design and data collection.

3. AGRICULTURAL MARKET ANALYSIS

This chapter examines agricultural market analysis looking at efficiency as a performance result, the concept of marketing margins and factors that influence margins.

The traditional subject matter of 'agricultural marketing' has been the assessment of marketing performance and consequent policy recommendations. The subject is important to managers as well as policy makers. The problems involved in developing principles for assessing marketing performance and criteria for intervention are not unique to agricultural and food industries.

We take it as axiomatic that an advanced society needs an efficient and effective system of distribution, efficiency resting on some criteria of minimising costs, price spreads or marketing margins; and effectiveness concerned with meeting consumer needs more in terms of the quality and variety of fresh produce. These considerations are especially true for the fresh fruit and vegetable sector, for the perishable nature of its stock presents special problems in procurement, handling and storage.

3.1 Efficiency as a Performance Result

The concept of efficiency seems simple, but it is complex to define and difficult to apply. Marketing efficiency requires the existence of a marketing system having a structure of stages and firms within stages such that

marketing costs are minimised by the encouragement of physical innovations and competitive pricing so that charges equal costs plus a normal rate of profit.

In this case the marketing system is that of the distribution of fresh produce. Two channel structures can be identified -

simplified to grower - wholesaler - retailer - consumer
grower - retailer - consumer

The aim is to quantify the relative efficiencies of the channels by the use of marketing margins as an indicator of performance in relation to the structure and conduct of the industry.

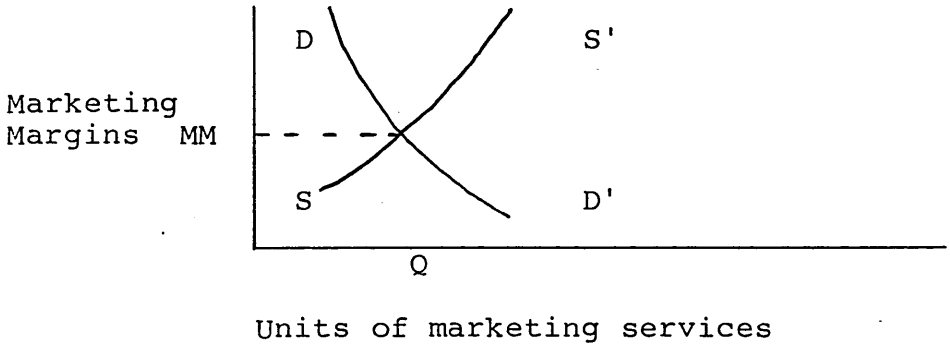
3.2 The Concept of Marketing Margins.

Consumer demand for food is an order for a very complex bundle of goods and services. The product of the farm is only a part of this demand. The transportation, storage, processing, grading, packaging, merchandising and other services between the farm and the consumer are important additions complementary to the farm product.

Each marketing firm adds certain utilities to the product - time, place, form or possession utilities or some combination of these. Within this frame of reference we can conceive of a supply-demand model at each point in the marketing chain where a product changes ownership. Each marketing firm 'adds value' to the product. The difference between the price of the commodity as a product and as an input is known as the 'marketing margin'. In

competitive markets, the marketing margin is determined by the demand for marketing services (and goods) and the supply of marketing services (and goods) as shown in Figure 6.(Sorenson,1964).

Fig. 6 Hypothetical demand and supply curves for marketing services



The intersection of the curves representing the demand for and supply of marketing services establishes the quantity of services produced (Q) and the marketing margin (MM). (Marketing services including grading,packaging, storage and distribution.)

The total marketing margin between the farm and the consumer is the aggregation of marketing margins of the various firms in between. Hence the farm demand curve may be considered a demand derived from the consumer and intermediary demand functions. (Thomsen,Foote 1952).

If the marketing firms were perfectly competitive, then the marketing margin would equal the cost of providing the services, (Shepard,1962). Seasonal price increases would equal storage costs, (including interest). Price differences from place to place would equal transportation

costs. Commission fees would equal the cost of placing the product into hands which can make better use of it. Lower costs in marketing would tend to shift the supply curve of marketing services to the right, resulting in lower marketing margins. Rising consumer incomes might increase the demand for marketing services and result in higher marketing margins. A change in the volume of produce handled would change the marketing margin only to the extent that unit costs would be affected.

3.3 Factors that influence margins.

Agricultural marketing industries are characterised by imperfect information, (Sorenson,1964). Knowledge is imperfect and typically business is divided between a small number of large companies and a large number of small companies. Because of these characteristics of the market structure, marketing margins may fluctuate considerably in the short run (less than one year). Over the long run the threat of entry of new firms or social condemnation may limit excess profits and keep margins near the cost level. Price leadership, market sharing, informal collusion, various forms of non-price competition add certain rigidities to marketing margins. Large companies possessing a degree of market power may tend to establish target returns on investment and vary margins as a percent of sales. Other marketing firms use a fixed amount mark-up.

These fixed amounts may be established by custom,

convention, by what is thought to be reasonable, or in an effort to increase or maximise profits.

Many firms, particularly the smaller companies, face rigidities due to high operating costs - overheads, labour; costs not matched by the rising price of their goods. This consequently will lead to a lower marketing margin. The cost of new technology can also put small companies at a disadvantage if they are having to compete with an 'improved' product, although the diffusion of new technology generally occurs over a period of years affecting both costs and demand for marketing services.

Certain consumer demands tend to change slowly, but over a few years can mean substantial adjustments in the marketing services required. This is a situation which has over the past 5 years or so been exploited by the major retail multiples. Consumers are demanding an increase in the quality and variety of produce available, along with value for money. This does not mean that price is no longer an issue - there are many items of produce that are price sensitive, for example 'known value items', potatoes, apples, citrus fruit, where the demand is sensitive to price changes. These are regular purchases, so the consumer is aware of expected price and quality. If the price were to go up the consumer would quickly search for an alternative source of the produce at a cheaper price. Price fluctuations on items not purchased regularly such as passion fruit will often go unnoticed, so price is not as

significant.

The demand curve represents the relationship between price and amounts purchased. For food this is generally a negative relationship. The price elasticity of demand for a given product depends upon the closeness of substitutes, the level of consumer income, the distribution of income among the population, the relative importance of this product in the budget of consumers, the storability of the product and the length of time being considered in defining the relationship.

Specifying the time period under consideration is important, the longer the time period the greater the elasticity. An abrupt drop in price accompanied by an advertising campaign, as used by retailers, can generate a substantial response from consumers. This is because the consumers are aware of the lowered prices and expect them to be of short duration. The response may reflect the elasticity of demand both for consumption and storage.

For the time interval over which the product can be stored without appreciable loss of quality there are two demand functions: the demand for current consumption and the demand for storage. The amount demanded for storage is primarily a function of current prices,(eg if a glut is depressing prices), expected prices,(if the future market holds price premiums) storage costs, transaction costs and the risk element. Holding the latter factors constant, the

effect of current prices on the amount demanded for storage would be the price elasticity of demand for storage. This could be quite different from the price elasticity of demand for current consumption over this period. (NB. Not all produce can withstand storage, e.g. strawberries, cucumber, therefore seasonality plays a more significant role on price, although seasons have been extended and supplies are readily available from overseas.)

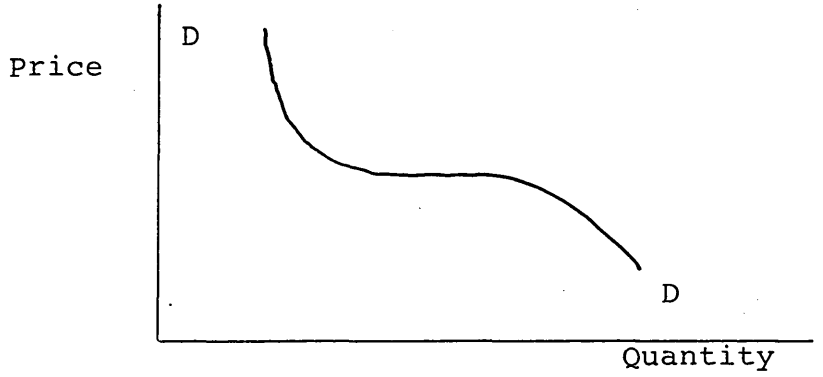
Generally the elasticity of demand for consumption is greater for longer time spans (say, one or two years) than for shorter spans (say, a three month period). People may not be easily induced to change their consumption habits by relatively short-run variables in price. But if a price change persists for a long period, consumers can adjust their diets gradually and are more receptive to the change.

The price elasticity of demand for most farm products is less than one, or inelastic (see table, appendix 3), in the relevant portion of the demand curve.

There seems to be a tendency for demand curves to be 'S' shaped,(Sorenson,1964). Figure 7 is a demand curve typical for farm products. At extremely high prices, only a small number of individuals might purchase a product. These individuals are not price conscious so demand may be very inelastic in this range. At lower prices more can afford the product : it begins to displace substitute products.

At extremely low prices the demand again becomes very inelastic as the market becomes saturated and alternative uses of the product are exhausted.

Fig.7 A typical market demand curve for an agricultural product.



Due to differences in income levels and the distribution of incomes, the shape of a demand curve would differ from one market to another, from one country to another.

In a perfect market the shape of the demand curve is of interest to producers and consumers only in the effect it might have on stability of price. The more inelastic the demand, the more unstable the price for a given variation in production. If some control can be exercised over marketing, the shape of the demand curve seems more relevant. Decision makers may endorse policies of price discrimination or market stabilisation depending on the shape of the demand curve.

Other variables affecting consumption of a product are prices of substitutes and complements, tastes, preferences, promotions and advertising. The influence of

these factors is difficult to predict - the vagaries of human behaviour often defy analysis, particularly in terms of the 'rational economic man'. The recent Government publications - NACNE and COMA reports (recommendations, Appendix 6) and the general trend towards healthy eating would be considered favourable to the demand for fresh produce but volumes demanded remain fairly static. More convenient forms of produce such as frozen vegetables and orange juice are experiencing increasing sales, (Appendix 1)

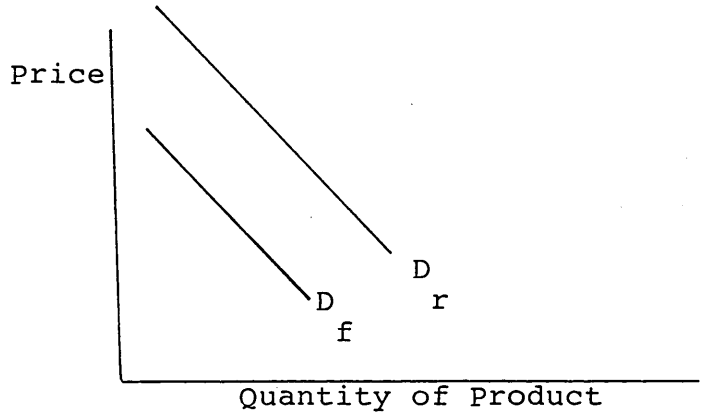
In addition to the various demand factors we must also consider supply. The amount of a product that farmers are willing to supply to the market is explained in large part by expected price of the product, expected prices of inputs, technology, expected prices of substitutes and complements in production. The supply function can be considered as describing the boundaries of attainable areas; it is analogous to the demand function.

3.4 Derived Demand

The demands for factors of production and marketing services are derived from the demand for the ultimate product. The farm product as well as marketing services can be considered as factors of marketing. The demand for the farm product and the demand for marketing services are thereby 'derived' demands. The demand curve at retail and the 'derived' farm demand curve would be parallel as shown in Figure 8, if unit marketing costs were little affected by volume, the product was not substantially changed by

packaging etc. and based on the earlier asumption that the marketing margin is fixed.

Fig. 8 Hypothetical demand and derived demand curve.



Such a representation is fairly typical of most farm products in the long run. Volume can have a major impact on unit costs in the very short run because a large proportion of the inputs in marketing are fixed for that period.

The demand curve at the farm is generally more inelastic than at retail. Marshall (1920) has stated some principles governing the elasticity of a derived (in this case farm) demand curve. These can be applied to the farm-retail demand relationship as follows: the farm demand curve will be more inelastic

(1) the more essential the farm product is to the retail product (this relates to closeness of substitutes);

(2) the more inelastic the demand for the retail product is;

(3) the smaller proportion the farm price is of the retail price;

(4) the more inelastic is the supply curve for the marketing services (and the supply curve for products which can be substituted for the farm product in question).

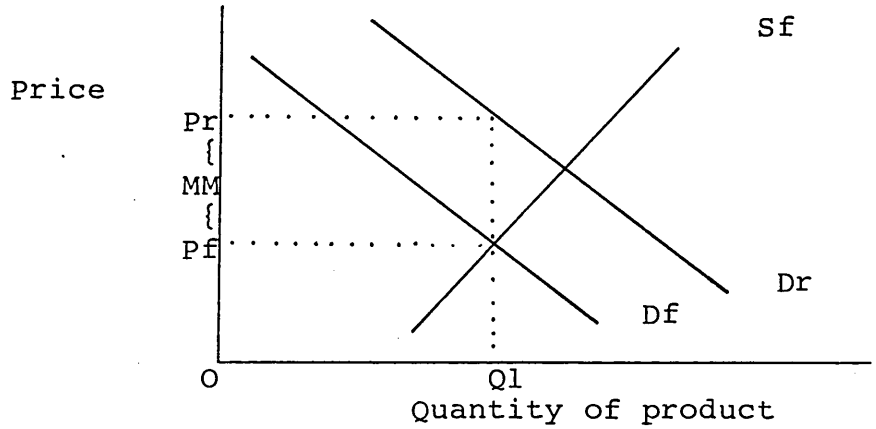
Additionally points (2) and (3) are true for the curves in Figure 8 whereas points (1) and (4) would imply that the curves are not parallel.

Marketing margins vary greatly between products, because of the differences in the costs of collecting, processing, transporting, storing and handling of different products, (Kohls,1961). The farm demands for products requiring considerable marketing expenditures are most closely allied to the requirements of handlers and processors than to consumer demands.

3.4.1. The Relationship between Supply, Demand and Derived Demand

If it is assumed that both supply and demand functions are reversible within the period of time specified Figure 9 can be produced.(Sorenson,1964)

Figure 9 Hypothetical Supply and Demand Curves (based on a perfectly competitive market)



The farm price (Pr) and the amount supplied (Ql) would be determined by the intersection of the farm demand (Df) and the farm supply (Sf) curves. Since the same amount will be supplied at retail, with allowances for inventory adjustments and waste, etc. the retail price (Pr) reflects what consumers are willing to pay for that amount of the original product and for the services (including information or advertising) that are involved in marketing. The difference, then, between the retail price and farm price is labelled the marketing margin (MM).

The other factors besides price influencing the amount supplied and the amount sold determine the relative positions of these curves. The farm price and also the retail price as determined by these variables refer to a particular product at a particular phase and time. Conceptually there is a multi-dimensional price surface in which price is established in a given market but emanating from that point are geographic price differences due to transportation costs, price differences over time due to storage costs, price differences between farms due to processing costs, and price differences between agents due to selling costs.

Agricultural marketing is not perfectly competitive. There are large numbers of relatively small producers and small numbers of relatively large middlemen and retailers. Knowledge at all levels is imperfect and the product is not homogenous. Short-term adjustments in agricultural

prices develop not only from variations in the factors of demand and supply but also from the imperfections in the markets. Prices during the trading period may fluctuate because of the degree of competition. Advertising and merchandising activities, possible only in an imperfect market, affect demand but are difficult to predict with existing theories on monopolistic competition.

Even in a highly competitive market, professional buyers and sellers (commission men) in their negotiations may not arrive at the equilibrium price dictated by supply and demand conditions. Consequently if the price is too high on one day, the price may be below the equilibrium the following day in reaction. Supply and demand determine prices but the negotiations of traders in the market place 'discover' prices. The price at any point in time may not equate given supplies with market demand. Time is necessary for market information to feed back to the participants taking account of negotiated prices on sales and cause prices to converge on an equilibrium level.

Related to this activity of price discovery is the problem of discovering quality. Since produce is not homogenous but represents a continuum of quality, farm products cannot be perfectly standardised even with grades. Grading does segment the quality into classifications which should be helpful in price discovery.

This chapter illustrates the theory adopted for the

survey, referring to the assumption that in perfect competition margins reflect marketing services, but in practice the margins include other factors, stemming from imperfect competition, for example service differentiation and imperfect knowledge.

Marketing Margin Analysis

Marketing margin analysis is one method used as a means of establishing a measure of efficiency. The methods employed in measuring marketing margins and the limitations of these methods and of the results which they yield have been widely discussed (Hallet, 1968; Houston, 1962; Ogren 1956; Thomsen, 1951; Wollen and Turner, 1970). The important characteristic of marketing margins (defined in arithmetic terms as the difference between the price paid by the consumer for farm products and the price received by producer of those products) is that they are inflexible in nature ie they are relatively more stable than prices. In other words it means that a proportional share of consumers' expenditure going to various intermediaries varies inversely with absolute changes in retail prices. The inflexible nature of margins may be attributed to the following reasons. The distributive margins are determined by the supply and demand for marketing services rather than

by the supply of and demand for commodities. As the supply of, and demand for, marketing services relate largely to the physical volume rather than value, hence marketing margins tend to be inflexible. However, this does not mean they are totally inflexible. They do change with changing economic conditions, but the magnitude of change is less and slower as compared with prices, (Rashid,1968).

A high marketing margin does not necessarily imply inefficiency in marketing,(Rashid,1968). Firstly, the high marketing margin figures in developed countries may simply mean that the production costs of the basic commodity are low in these countries. The use of modern technology which prodigiously lowers costs of production, exhibits a magnifying effect on a given distributive margin.

Secondly, the extreme localisation of production has resulted in a considerable increase in the cost of providing the place utility of farm goods. This in turn has served to increase transport costs and therefore marketing margins.

Thirdly the increased amount of time utility embodied in food products (both perishable and non-perishable) require extra storage and processing costs for their orderly marketing.

Fourthly, in all developed countries considerable changes

have occurred with respect to form utility of farm products. The consumers in these countries are demanding that their food requirements are met in a more finished form. While there is a limit to the quantity of food required by a consumer there is no limit to the services incorporated with this food. This tends to multiply the marketing margins.

Finally, the high layout costs especially in the retail trades, which contribute substantially to high marketing margins. Self-service shopping which has gained considerable momentum in recent years, endeavours to minimise the impact of high labour costs, but it merely captures a small fraction of the marketing costs. The major marketing costs are those which result due to enhanced and improved form, time and place utilities. These are the costs for the services which the consumer 'requires' and for which he/she is willing to pay.

In view of the above cosiderations it could be safely concluded that the proposition that distributive margins form a larger and larger share of food expenditure is not inconsistent with efficient marketing in developed countries. In fact high marketing margins are a sine qua non to an efficient marketing structure. However, this is not to say that the marketing system in developed countries is completely efficient and therefore incapable of improvements.

With regard to the share of middlemen, the analysis of the composition of marketing margins in different channels, shows the profit element to account for a very insignificant proportion of the total marketing bill, for example in developed countries, compared with profit constituting a dominant element in developing countries, (Thomsen, 1951)

Studies using marketing margin analysis are conducted in the United States, where it is used, for example, by the Department of Agriculture as evidence of the high costs of marketing. In India it is often used in studies evaluating the peasant farmers' share of the final price paid for his produce - which is usually just a small percentage. Comparisons are conducted between neighbouring villages and regions, and for different types of agricultural produce, (Desai, 1979; Subrahmanyam, 1981; Tayade and Patil, 1981; Mahalanobis, 1972; Acharya and Agarwal 1984).

However such studies are useful both to the producers, sellers and consumers, where marketing is established in the developed world, (O'Connell and Connolly, 1975; Seeba, 1984). A study of marketing margins has a great importance because by referring to the marketing costs and margins, one can judge whether or not the services of the intermediaries are provided at reasonable rates and where improvements could be made to increase efficiency.

4. STRUCTURE AND CONDUCT

The broad thesis being explored is that a long period of fundamental and accelerating change (which can be dated from 1950 with the restoration of the 'traditional' system) can be explained to a considerable extent by pressure exerted on the wholesaling function through its immediate market environment, i.e. growers and retailers and broader changes in society which articulate themselves through the food chain by shopping behaviour.

The structure of an industry influences the conduct or market behaviour of firms in the industry, factors that will be identified in sections 4.1, 4.2, 4.3, concerning growers, wholesalers and retailers respectively. Specific case study examples are given to illustrate the structure and conduct which is described.

The major part of the information collected (unless otherwise stated) was the result of personal interview and much of this was then used to assist in the development of the questionnaires. The results of the questionnaires can be found in Appendices 4a,b and c.

Chapter 6.2 goes on to discuss the structure, conduct, performance relationship in terms of causal links.

4.1 considers the grower, examining UK fruit and vegetable production and the growth of marketing organisations,

giving specific examples. This section also pays reference to the questionnaire distributed to growers to generate some empirical data concerning the structure and conduct in this part of the industry.

4.2 considers the wholesaler with specific examples of markets and wholesalers. Again reference is made to the questionnaire used to generate empirical structure and conduct data.

4.3 examines the retail market for fruit and vegetables, considering market size, packaging, promotion and advertising, with specific examples. Reference is made to the empirical data collection by questionnaire.

4.1 The Grower.

One of the main developments in the UK market for fresh produce over the last decade has been the increasing sources of supplies from all over the world. Improved transport facilities ranging from access through wide bodied jets to atmosphere controlled sea vessels, have all contributed in increasing the speed with which fresh fruit and vegetables can reach the UK from every part of the world. Also, as many countries have been developing organised horticultural industries chiefly for export, it means that a wide variety of fruit and vegetables is now available at all times of the year, thus making the limited seasonality of most fresh produce a thing of the past. For example, avocados imported from Israel were once only available from autumn to spring; now they are available all year round, coming from South Africa, the Canary Islands, USA, Kenya, South America and are also being grown in Cyprus and Spain.

There have also been marked improvements in efficiency of production and distribution methods over the past decade as a result of technological developments, which have subsequently improved the quality of fresh produce to the consumer. An example is the introduction of a 'cool chain' of chilled produce from field to the consumer. This involves the produce being cooled in chilling chambers immediately after harvesting, then being held in temperature controlled warehouses and

transported in refrigerated lorries to the stores. The produce is kept at a consistently low temperature thus ensuring freshness and a longer shelf life.

The main feature of the UK fresh fruit and vegetable production has been an increase in direct distribution from grower to supermarket and a concentration of organisations involved in the sector. The marketing effort is in general small, although growers have been spurred into improved merchandising by stiffer competition and the example of imported produce.

The emergence of the grocery multiple has resulted in improved quality both in terms of the produce itself and its presentation. With their considerable buying power and preference for buying direct, supermarkets have had a profound effect on the structure of supply. Their growing dominance of the market has led to the formation of growers' cooperatives and producer groups in recent years to ensure quantity, continuity and quality of supply necesssary to utilise these new outlets. Generally the trade has become more marketing orientated with the introduction of branding at the wholesale level and increased consumer research to identify new market opportunities with individual products.

The use of improved and new technology has also affected developments throughout the chain of distribution. For

example, the steady move by multiples and supermarkets towards the creation of a cool chain in distribution. The strength of the multiples is moving increasingly towards the requirement from their suppliers of a cool chain distribution for their fresh produce - an unbroken link between grower and customer at a low controlled temperature which preserves the produce. It is essential for success that the field heat is removed immediately the produce is harvested and the selected temperature established as rapidly as possible and maintained along the chain to the consumer. Cool store, refrigerated transport and cooled in-store display cabinets are the stepping stones.

For success the chain requires the supplier to provide vacuum cooler and cool stores, the transport company vehicles which are refrigerated and the retailer cool stores plus refrigerated counter space at point of sale. Consequently, the investment required is substantial. Where finance is available growers have also developed controlled atmosphere storage, enabling the seasonal crop to be stored and released onto the market at premium prices.

A new technique has been developed to extend the shelf life of produce to be shipped. In recent years combinations of synthetic and natural waxes and water suspensions of 'soft' polythene have been used to inhibit

the rapid ripening and decay characteristics which still account for the loss each year of some 40 per cent of the world fruit crop.

These products seal the treated fruit inside an impermeable second skin. They virtually stop the natural processes characterised by the absorption of oxygen - which converts complex sugars and starches to simple sugars and citric acid - and the release of carbon dioxide through the skin. The fruit is effectively preserved. It is also suffocated and will eventually die and become unmarketable. The new development Semperfresh, is based on sucrose esters - a complex mixture of hydrocarbons - and the fruit when coated is put to sleep. The material modifies the gas exchange, greatly reducing the intake of oxygen while allowing out almost all the carbon dioxide produced in the treated fruit.

Apart from greatly extending shelf-life, a micro-film of Semperfresh allows shippers to transport cargoes at a higher temperature than those required even for waxed fruits.

It is claimed that Semperfresh can extend the shelf-life of grapes by up to 30 days, papaya by 21 days and water-cress by 7 days, at a cost of about 1.5 pence per kilo.

Information technology has also its role to play in the successful distribution of fresh produce. Computer facilities for sales accounting, stock control, packing

and distribution are readily available and do not necessitate a large expenditure. In turn they can promote a professional image and service at any stage of distribution, as well as easing the pressures on day to day operations.

4.1.1 UK Fruit and Vegetable Production.

The commercial production of fruit and vegetables in the UK is done on a wide range of holding types, from specialist small-holdings to large farms,(Keynote,1984).

Domestic production is relatively stable, as shown in Appendix 1a, where figures are given for volume and value of output marketed, and for the total cropped area of selected fruits and vegetables. Fluctuations are, in general, due to climatic reasons rather than increased or decreased acreage, although the UK cropped area has been declining steadily,(Appendix 1b). The cropped area for vegetables fell from 193,000 hectares in 1980 to 180,000 in 1984, a decrease of 7 per cent and the area of fruit fell from 64,000 hectares in 1980 to to 53,000 in 1984, a decrease of 17 per cent. Improved varieties and cultivation methods have ensured that, for the most part, crop yields have been maintained or increased. Apples, pears, cauliflowers and tomatoes have all been subject to Intervention Board withdrawals from the market in recent years. The value of marketed vegetable output is estimated at £515 million and that of fruit at £235 million (msp) for 1984, 50 and 55 per cent increases respectively over 1980.

The main bulk of vegetables grown in this country originate from the eastern half of England, which is climatically more suitable than the wetter west, though there are exceptions to this, e.g. the Vale of Evesham, parts of Lancashire, Merseyside, Devon, Cornwall, Hereford and Worcester. The most important vegetable productive counties are Lincolnshire, Norfolk, Humberside, Suffolk, Essex and the Isle of Wight.

The main crops produced are carrots, onions, cabbage, cauliflower and Brussel sprouts, which altogether accounted for 62% of total crops grown (Keynote Publications 1985). Appendix 1a shows the volumes marketed to be fairly static.

Protected vegetable production, i.e. those under glass, are mainly salad vegetables, such as cucumbers, lettuce, mushrooms and account for under 2% of total cropped area but 29% by value. There are three major areas of glass-house production in England, though individual pockets are found throughout the country. Most of the UK's production of crops are situated on the south coast, in the Lea Valley, north of London and on Humberside, which produces mostly lettuce and cucumbers.

Britain is also a major producer of main crop seed and new potatoes and has the world's largest consumption of potatoes per head of population.

The areas devoted to top fruit have continued to decline

over the years (Appendix 1b), but output of apples has remained steady (Appendix 1a), mainly due to improved marketing and storage and new planting replacing the lower yielding older orchard. Dessert apples account for 60% of the total 23,000 hectares grown in 1984 while the remaining 40% are culinary varieties, (MAFF,1985).

The major concentration of apples and pears production is situated in Kent, though Sussex, Essex and parts of the West Midlands also produce significant quantities of fruit.

Soft fruit production also follows a similar geographical pattern to vegetables with the south eastern part of England producing half of the nation's total. The most popular fruit grown is strawberries, which are produced for market or sold either at farm gates or pick your own sites. The fruit accounts for over 40% of total soft fruit cropped areas of 17,000 hectares in 1984, 59,000 tonnes,(MAFF,1985). Their cropped areas have shown greater stability, compared to top fruit or field vegetables.

The figures (Appendix 1a) for home produced output of fruit marketed in the UK reveal a relatively static position.

As a result of British climatic conditions seasonal variations can be significant. The fruit and vegetable industry is unique in that prices year over year do not necessarily inflate. Similar volumes are sold throughout

each period despite values being affected by seasonal peaks or an abundance of home grown produce, resulting in low prices.

Despite lower values for similar volume the costs of production, transportation, storage, wholesaling and retailing continue to rise. In a 'good' year, when produce is in short supply, there are high values, lower volumes and therefore lower related operating costs.

If production is poor owing to climatic factors the retail multiples tend to look overseas to secure sufficient class 1 produce and the UK wholesale markets tend to be oversupplied with large quantities of class II produce.

The figures in Appendix 1c show a steady increase in imported fruit and vegetables. Imports account for 78% by volume and 76% by value of fruit consumed in the UK, whilst fresh vegetable imports account for only 19% of the home market. It is much higher in value terms at 36% because of the highly priced exotic varieties, e.g. aubergines, peppers and courgettes. In tonnage terms, imports have increased by 56% over the past 10 years,(MAFF,1985).

Apples, citrus fruit and bananas dominate fruit imports whilst tomatoes and onions account for over half of vegetables imported. Imports of exotic fruit and vegetables have made a dramatic impact on the UK market, the most successful fruit being the avocado, followed by

the mango and papaya and vegetables being aubergines, courgettes, peppers and chinese leaves.

The main thrust increasing vegetable imports has not however come from the rapidly growing exotics market, which in volume terms is less than 5% of the total market, (FFVIB,1985), but from regular commodity purchase type products such as tomatoes, cauliflowers and lettuce.

Exports have also risen (Appendix 1d) but they remain at a low level, accounting for less than 1% of home production. Apples, tomatoes and onions dominate exports and their major destination is the Irish Republic.

The majority of fresh produce exporters, e.g. France, Italy, Spain, Canada, generally maintain strict controls of quality and conditions of produce. Exporting countries producing volume commodities, e.g. citrus fruits and top fruits, have set up marketing boards to handle the produce of their independent producers. The main ones are the Deciduous Fruit Board which represents South Africa with its Cape and Outspan brands, the New Zealand Apples and Pears Board, the Australian Apples and Pears Board, Food and Wine from France, which promotes France's apples and other fresh produce, the Citrus Marketing Board of Israel which markets citrus fruits with its Jaffa brand while Agrexo is responsible for its non-citrus produce, e.g. melons and avocados. Others include the Spanish Citrus Management Committee with their Spania brand and the

Dutch Fruit and Vegetable Bureau.

A high level of branding exists amongst imported produce because of the oppressive marketing policies of the overseas exporting boards and also because they are mainly pre-packed for the trade. Examples are Iceberg (lettuce), Golden Prince (carrots) and Dolly Cauli (cauliflower).

In the UK, the Apple and Pear Development Council (1966) along with the Kingdom Scheme (1981) look after the promotion of the country's most popular fruits. Within the UK the existence of marketing boards is constrained by EEC regulations which require them to be voluntary, producer owned organisations. In the vegetables section, the major one is the Potato Marketing Board which was created under the Agricultural Marketing Act of 1931 and operates a complex system of legislative intervention within the framework of the 1955 Potato Marketing Scheme.

4.1.2 The Growth of Marketing Organisations

One of the most dynamic elements in agricultural marketing in recent years has been the general increase in diversification, size and integration of firms.

Firms vary from single proprietorships to corporate bodies. To consider growth as though all firms are similar in nature would be misleading. Growth and potential for adjustment is related to its decision making

unit - its management, so companies may adjust very differently.

Societal or environmental variables establish the business climate in a market economy. In effect they set the stage for managers of firms in their role as decision makers. The implications of social and cultural environment are often subtle and invariably complex. The many links between the social-organisational aspects of the society and the physical-economic aspects of production, become relevant to decisions on firm size and organisation. Elements of human behaviour may become customary; specialisation and ways of doing things (role structure), when habitual, restrict the flexibility needed for major organisational change. For example, the traditional chain of distribution for fresh produce grower - wholesaler - retailer - consumer.

Risk and uncertainty tend to limit expansion. The more uncertainty and risk associated with any expansion plan, the more managerial time will be required in analysing it. This time is often not available with management involved in day to day operations.

Spurred by the availability of a £25m grant to growers following the Runciman Report 1957 and the development of the multiple supermarkets during the 60's, a marketing opportunity was created for the growers. Financial incentive, coupled with the potential for a new outlet for

fresh produce distribution encouraged many growers to adapt their operations forming cooperatives.

Some advantages of group action include:

1. Ability to amass technical and economic knowledge and expertise.
2. Opportunity to educate members, customers, public and other groups.
3. Ability to provide continuity of a quality supply direct to the multiple retailers.
4. Access to beneficial institutions.
5. Possibilities for interaction with other groups.
6. Opportunity for dynamic interaction of membership.
7. Provision of a problem-solving mechanism.
8. Opportunity to influence both production and marketing efficiency.

To illustrate the growth of marketing cooperative organisations an outline of several UK operations follows.

Humber Growers Marketing Organisation Ltd is a cooperative marketing organisation that was formed in 1961. It was formed by four brothers who decided their businesses would be in a better position if they worked together and following the Runciman report they would become eligible for a growers grant.

Initially members were growing a wide variety of produce but it soon became apparent to the company that for food

marketing and production reasons a multiplicity of crops was neither the way to market from strength, nor the way to protect individual on-going capital investment; outdoor crops were not necessarily complementary to indoor crops.

As a result two main season glasshouse crops were grown, tomatoes and cucumbers, both in rotation with winter lettuce. A prime reason for concentrating on cucumbers was that traditional cucumber growing in the Lee Valley had declined as a result of the sale of land for building purposes, thus creating a market gap. There are now 14 holdings with a total of 153 acres of heated glasshouses, growing for the organisation producing 44% of UK production. The largest holding being 25 acres, the smallest 2 acres with an average size of 10 acres. The cooperative provides its members not only with sales and marketing services, but quality control advice, access to distribution facilities, research and development and a unique biological control against pests (red spider mite) saving money on expensive pesticides. 1967 saw the cooperative's first direct sales programme to retailers. It demonstrated:

* the need for continuity of first class product standards and a strict system of quality controls;
* the immense benefit of selling to major retail outlets.

Direct sales now account for 77.7% of class 1 cucumbers in the weight range 350 to 700 grams. Humber Growers has in

effect created a two tier price system for cucumbers; and retailers are buying Goldpak cucumbers without visiting the market. Annual programmes with direct outlets are updated weekly and confirmed daily.

Direct sales of cucumbers:

	Boxes	% of total	Outlets
1967	15,700	10.65	1
1980	695,000	36.20	14
1986	1,500,000	38.00	17

source: Humber Growers,1986.

Regular contact is kept with 49 wholesalers up and down the country, they are still an important outlet accounting for over half of the sales volume. The majority of these sales are however sold on commission as a result of the perishable nature of the product (4-5 day maximum life) and the wholesalers not being prepared to carry the risk of non-sale. The price the wholesalers will get is based totally on daily supply and demand, whereas the retail price although based on the market price is agreed weekly before delivery and generally at a higher rate than the market price.

The marketing objectives formulated by the company in the 70's are still applicable for the 80's:

* Total cucumber specialisation;
* Maximisation of direct sales to retail outlets;
* Establishment of Goldpak cucumbers as primary wholesale market brand leader;

* Continuous production utilising lettuces;
* Guaranteed grading quality and freshness;
* An increase in cucumber consumption.

The Humber Growers' depot has three daily deliveries from their members. The cucumbers are already packed and graded and in some cases labelled and priced, ready to load onto the carriers. Humber Growers have ten of their own cool-chain lorries and also use other contractors. The cool-chain distribution is now a vital criterion in maximising a product's shelf-life.

Packaging has been given considerable time and effort to design a container that is both functional and eye catching for the customer. The cucumbers are individually wrapped in a gas permeable shrink wrap and then boxed with between 36 and 42 in a box depending on customer's specifications. Further processing and packaging of cucumbers are further value adding operations, further increasing the margins available to the cooperative.

Although the cooperative has considered export markets and closely monitored continental prices, it has shelved the idea until import substitution has been further extended. UK sales of cucumbers are increasing at the expense of Dutch imports so the company is concentrating on maximising home sales.

Current market developments include:

* Sales of between 300 and 400 tonnes of class II and III cucumbers for processing;
* trials in test marketing sliced cucumbers in a preservative;
* portioning of cucumbers for a major retail outlet;
* mini-cucumber trials;
* the use of cucumbers in cosmetics.

Shropshires is a family business established in 1952 in Ely, Cambridgeshire, farming 3000 acres of the most fertile land in the UK.

Shropshires is one of the largest privately owned salad and vegetable producing organisations in Northern Europe, employing 450 people. Other leading growers have recently joined Shropshires in the formation of G's Growers Ltd to meet the increasing demands of marketing.

Environmentally controlled stores, modern pack houses, vacuum cooling facilities and refrigerated vehicles provide the specialist services demanded for the marketing of over 20,000 tonnes of fresh top quality salads and vegetables.

The company specialise in the growing and packaging of salad and vegetable crops. Great concern and effort is given to ensure the highest standard of reliability and efficiency in the service of customers. Food technologists, quality controllers, vacuum cooling

facilities, cold chain distribution, radio communications and computerised systems ensure continuity of quality and supply, essential for both modern wholesalers and retailers.

Although they do produce vegetables specifically packed for the wholesale markets, the retail multiples are the most important customers and the area of business they contrive to expand. Some produce is distributed equally to both wholesale market and multiple, although the produce the multiples receive is all class I and the wholesale markets have the remaining stocks. Direct sales to multiples of other types of produce are as high as 30 per cent. Demand from food processing companies has also steadily increased over the past 5 years.

The company is now venturing into further value adding processes producing packs of pre-prepared vegetables and mixed salads for retail sale.

The organisation provides a comprehensive distribution and marketing service to its members at a cost which is often begrudged. However if as individuals the farmers had to face the operating costs entailed, for example one unit of an onion store costing £25,000, alternative methods of distribution would have to be found, not necessitating storage, ie selling straight to the wholesale markets.

'The East Anglian Growers' marketing group Gold Prince was

established in 1983 with the intention of marketing better than Class I carrots solely to the wholesale markets, trying to develop a brand image. Gold Prince believe that a 'freshness message' could help re-educate the retailers and consumers of this 'under-rated' root crop. The logo, which appears on all sacks and packs of the nine members, guarantees quality standards and the Food From Britain Quality Food Mark is on all literature. All sales remain on commission base.

Gold Prince are an example of only very few co-operatives concentrating efforts on improving trade through the wholesale markets.

Turning to fruit producers Home Grown Fruits (HGF) dominate, being the largest single representative with sales of apples and pears for 1985 topping £20 million. HGF were established in 1961, with the advent of pre-packing, the gradual emergence of the multiples and increasing sales from France.

As a single sales and distribution network it umbrellas more than 300 growers, with 75 packhouses. (There are about 1200 commercial growers in Britain's apple and pear regions.) When it began life, sale values were £2 million. "Volume has dramatically increased, for two reasons", says David Thorburn, its chief exective. "Our founder members have had the confidence to continue to up-grade and re-plant their orchards as part of the first

logical step to marketing. They have done this because we have always accepted that our first function was to maximise their market returns by variety, grade and size."

The group have attracted new members virtually every season. Throughout the last decade, HGF producers have consistently made more than the national average. Such figures may once have been difficult to assess but HGF is also the major supplier to the Kingdom Marketing Scheme. At the press of a button, Kingdom members can establish the real comparative values of stocks, current market prices and predicted future prices.

"There is no doubt that the real benefits of belonging to a co-operative, come at times when there is a substantial crop", says Mr Thorburn. "It is then that there is economy of scale at packhouse level, which in turn can be translated into having the best possible marketing facility to forward programme supplies and have a total view of the market and its performance."

He sees his function as retaining the balance between the demands of the various customer sections, ranging from the large multiple looking for a long-range programme, to the specialist street corner shop, which buys on the market from a secondary wholesaler once a week. It can put the grower in a very strong position, if co-operatives can come up with a high percentage of good quality fruit, which is well packed and presented and utilising every

facility in the short-term cool-chain for early varieties, to programmes for Cox and Bramley, which can stretch into the summer.

"Wholesalers and retailers do not want cheap fruit, or the wrong sizes. They are looking for a quality item with a price which does not move too often, and is available at the time they wish."

It is for this reason that HGF believes that its marketing mix of both panel commission selling and firm price sales, where wholesalers can purchase fruit to order, continues to ensure that the producer is a strong seller.

As British apple growers have only 44 per cent of the U.K. apple market and 37% of the pear market, it is important for the industry to have good communications. In this sense HGF have been strong supporters of Kingdom, seeing its prime function as an information service for all growers as well as establishing a quality mark. As far as promotional involvement is concerned this is less relevant on an on-going basis because of limited funding. Promotion is a job for the Apple and Pear Development Council (APDC) whose function is to expand awareness of the variety range, size and quality of English fruit, in a market which is becoming more and more competitive. HGF then carry out specific promotions using its own brand and carry homepack as it is in control of the supply to the outlet or region. The APDC and Kingdom are not traders so

cannot carry out this function.

Operating from their Canterbury base HGF have a sales team, a Quality Control team that travel to the packhouses once a week, an Administration Department, Accounts Department and Computer Department. They are responsible for collecting money and paying out on a pooling system based on variety, grade and size.

Each packhouse packs to the same standards. A buyer cannot specify a desire to purchase fruit from a specific packhouse - the operation is set up to minimise distribution costs and to get the fruit to the right place at the right time. Average transport prices are 1.5 pence per lb, whereas regional markets might pay 3p per lb more, close communications are therefore kept with the markets and the fruit will be taken to the market offering the best price.

Some multiples are served directly, others prefer to use an agent to enable a range of produce to be purchased. The agent acting as an extension of the multiple's buying department. All produce is sold to the multiples on a firm price basis whereas the traditional wholesale markets sell on an 8.5 per cent commission. Increasing numbers of wholesalers are selling on a firm price basis and it is a HGF policy to increase these numbers - commission selling being administratively cumbersome. For example, if a wholesaler takes 600 boxes of apples, 200 boxes will

achieve a good price, 200 average and 200 a poor price, being sold over a series of days, reporting on a daily basis requiring checking and following up, therefore the costs incurred are high in comparison to the raising of an order for direct sale.

"The traditional market is out of date with the growth of multiple retailers. They do not have the volume of quality or continuity of supply for the multiple and are consequently weaker sellers therefore returns to the growers are significantly different."

By the end of 1984, 38% of HGF's market sales were firm price, by the end of 1985 they reached 52% and have continued to rise - incentive schemes in the form of a seasonal rebate being offered. "..... it's just an attitude of mind which needs to adapt."

New wholesalers continue to open (whilst others close) due to the low barriers to entry but there is a decline in the number of good wholesalers. In terms of the wholesaler league table there is not one company with good outlets in all markets. It is a personal business so each stall holder is dealt with on an individual basis. There is competition for the good outlets but HGF have strength because of their volume and quality. They expect to be the major British supplier to the wholesaler, supplying 2/3rds to 3/4qtrs of apple sales.

HGF keep a tight control on the wholesalers they use. All

telex in prices, stocks, sales and average price achieved which is fed into the computer so daily commission and firm price comparisons can be made. The overall ratio of stock to sales is important 3 or 4 to 1 being good; 8 to 1 poor. Apples will store and have a shelf life up to two weeks, so a certain stock is acceptable. Early in the season, e.g. Discovery apples have a short life so there is less control of the price, as the fruit must be kept moving through the system to clear everyday at the expense of price.

The multiples will pay the growers about 10% more for their produce and the HGF function at the end of the day is to secure the highest returns.

Fifty per cent of HGF volume still passes through the markets as the multiples are aggressive in the market place and becoming fewer in number, so it is necessary to ensure that business is not passing to too few customers, with few buying points. Over dependence must be avoided or the multiples would be able to pressurise the prices and change standards. HGF have a sales policy to give a wide spread of outlets with not more than 8 per cent of volume going to one outlet.

East Kent Packers Ltd (EKP) are a vertically integrated marketing co-operative with all fruit production from the Faversham area and centralised grading/packaging/storage facilities, whereas HGF have packhouses throughout British

growing areas. The growers constitute the board of directors and on ceasing production for the co-operative resign their directorship. A grower seeking membership is put on probation for 2-3 years to ensure satisfactory standards and continuity of production.

EKP are about a third of the size of HGF in volume terms, with 4,000 acres under cultivation. Maximum supply is 1,000 tonnes of apples per week during March - a period when EKP have up to 80 per cent of the British market. If an average were calulated for the year's supplies EKP would have 35 per cent of the British market.

About 60 per cent of production is sold on 8.5 per cent commission through the wholesale markets - chiefly class II produce. The other 40 per cent is sold directly to multiples - class I.

Saphir (importers) act as marketing agents for EKP, operating from the London Fruit Exchange. They monitor EKP stock, wholesaler's stock, volume traded and prices. They use a panel of 40 wholesalers, located throughout the markets of the U.K. Each are allocated stock on a several daily basis and depending on their performance, i.e. price achieved, their supplies can be increased, reduced or terminated. This also depends on available stocks and quantity of fruit on the market. The panelists ring in each day with their results and will arrange the following delivery. If there are gluts, Saphir will determine a

clearing price. If the market is flooded and produce cannot be sold without making a loss then the produce can go to Intervention (CAP) as the growers are members of a producer group. Expected selling time for a wholesaler is 2 to 3 days. If stock is cleared in one day it is thought to be going too cheaply. EKP will store fruit and wait for a good market price.

In return for Saphir's services, EKP will grade/store their imported produce.

A variety of incentives are used to encourage wholesalers to promote EKP fruit. Packaging has also been found a useful marketing tool, for example Comice Pears are individually wrapped which has raised the price that will be paid from 12p to 24p per pound,(1985). EKP consider it has put the fruit on a par with packaged confectionery.

EKP supply 12 multiples on a regular basis - 4 in a substantial way. They have worked in close conjunction with multiples' marketing and planning teams to arrive at mutually agreeable schedules regarding acceptable size and quality throughout the year.

EKP see an important role of the wholesale markets as determining the price the consumer pays. If the multiple were to gain say a 90 per cent share of the market they would have a disproportionate power in price determination.

The advantages to the growers of belonging to the co-operative are access to the available expertise, storage, grading and packing facilities. Examples of costs are a grading machine at £0.5 million and a new storage unit at £1.5 million. The growers also have access to a comprehensive distribution network.

4.1.3 The Questionnaire to the Growers

The questionnaire was used to gather empirical data regarding the structure and conduct of the growers' operations. (The profile of the sample of growers can be found in section 2.4 and more survey details in Appendix 4).

The analysis of the results to the questionnaire can be found in appendix 4a and are concluded and discussed in chapters 6 and 7.

[The response rate was 33 per cent]

4.2 The Wholesaler

Despite continued shortening of the distribution chain and further contraction of the number of firms dealing in the market, about 50 per cent of produce is still sent to either one of the 15 primary wholesale markets or the 18 smaller secondary markets. (A reduction of 40% since the 1950s.) Covent Garden, the principal U.K. wholesale market, is estimated to account for just less than 10 per cent of all wholesale sales, with an annual fruit and vegetable turnover of more than £200 million,(1985). Despite losing sales to supermarkets, the wholesale markets have replaced some trade by gaining sales from the catering trade.

The number of wholesalers present in the markets has steadily decreased numbering now about 1,200. They range from large organisations such as Fyffes, which has 18 market outlets and 26 distribution centres, to small family businesses. A large number of wholesalers are registered with the National Federation of Fruit and Potato Trades, who represent about 80%, by value, of the wholesale trade.

There are generally two main types of wholesalers - primary and secondary. Primary wholesalers deal direct with producers and secondary wholesalers deal with primary wholesalers and supply the smaller markets and independent outlets.

Improved (physical) distribution has meant that secondary wholesalers in some rural areas have lost importance and that larger companies have swallowed up minor ones. The role of primary wholesalers is changing slightly in that the larger companies are becoming more important as handlers, checkers and physical distributors of produce rather than sellers. This is particularly so when a wholesaler is committed to a specific grower who may not perform.

A further distinction can be made between the traditional business and immigrant run businesses owned by Asians and West Indians. These are mostly located in the main immigrant areas of South London, Birmingham, Bradford, Manchester and Leicester, and specialise in new exotic produce. There are about six major immigrant importing wholesalers and about twenty secondary wholesalers which cater exclusively to independent retail shops.

The traditional marketing chain for fresh produce extends from the producer or exporter through the primary wholesaler and importers and then to the secondary wholesalers and on to the processors and retailers. The present reality is much more complicated as there are no easily distinguishable patterns. Overseas growers' co-operatives and producer groups have come onto the scene and play an important role in negotiating with the supermarkets in the export field. Certain wholesalers have made a specialisation of servicing the supermarkets from

depots outside wholesale markets; these companies have expanded from being traditional family businesses to ones which can meet the full demands of the multiple chains. These wholesalers have cold storage facilities, ripening rooms, refrigerated transport and specialist sales staff. T J Poupart, Fyffes Monro, Francis Nicholls, Broom and Green, M and W Mack and Glass Glover are among such businesses which have taken on the role of providing a complete marketing package.(Retail Business,1985/86)

Marketing groups have also become involved in wholesaling - the Jamaican Producers Marketing Group, for example, has a purpose built factory terminal at Newport from which refrigerated transport delivers produce, mainly bananas to the company's national network of ripening and distribution depots.

The multiples can, however, be seen regularly in the wholesale markets purchasing 'top up' stocks of new lines for test marketing.

Traditionally the wholesalers did not physically purchase produce but operated on a commission basis. The majority still operate this way with commission averaging between 5-8 per cent on Imported Produce and betwen 7.5 and 12.5 per cent on Home Grown Produce (Davies 1985).

A table comparing commission rates around the world appears in Appendix 2. The laws concerning commission sales are complex and involve the wholesalers in detailed

book keeping. Terms of trade are short, with payments normally being made within one or two weeks, and three weeks' credit the normal maximum.

In a 1981 Ministry of Agriculture Press Notice it was stated 'There is a tendency for costs, over which the tenants (wholesalers) have little or no control, to rise at a rate the same as and sometimes greater than inflation, while fruit and vegetable prices have tended to rise at a lower rate with consequent effects on earning from commission sales', (O'Cathain, 1981).

Fyffes has estimated that its costs rose by 65 per cent in the period 1977 to 1982, while its revenue increased by only 55 per cent.

A proportion of the cost increases can be attributed to increased charges as primary wholesale markets have been moved from sites in the centre of cities, to the suburbs, to relieve problems of conjestion. In London, for example, Covent Garden, which serves both London and the provinces, was transferred across the Thames to Nine Elms, in 1974. The standard of accommodation, working conditions and the provision of facilities has risen considerably but so have rents. Consequently, there has been a move away from expensive labour intensive systems of working towards capital intensive methods of operation both in physical handling and in the control of accounts and administration. But the return on capital and turnover is

often low so the majority of firms find it difficult to compete with other trades in such matters as the recruitment and retention of really able employees.

Further changes have been a move towards larger unit loads although in some cases, the package or box size has declined. Regulation of all apsects of the industry is now quite comprehensive and difficult to evade and quality has risen, so wastage has been greatly reduced. Many new products have also become available and the seasons for many more have been extensively widened.

However, in spite of the widening product range and relatively static sales, the capacity of the wholesale markets is now too great - mainly because of the increase which is physically by-passing them.

Statistics from the National Federation survey of firms engaged in the primary wholesale markets show that gross margins have fallen from an average of 12% in 1951 to an average of 10% in 1983 and that net profits have fallen from an average of 2.7% in 1951 to only 0.37% in 1983. This was the issue explored by Davies (1985).

Possible explanations, where apparently non-viable companies remain in business, is the practice of 'creaming off' net profits by increasing Directors' remuneration or of directors and owners accepting a low relative earning on time and capital if actual earnings are 'adequate'.

4.2.1. Specific Examples of Wholesale Markets and Wholesalers

Birmingham Wholesale Market

The Markets Precinct was opened in 1976 and is one of the finest wholesale market complexes in Europe - it certainly shines amongst U.K. wholesale markets and is second in size and importance only to those of London. Situated within Birmingham's city centre, with a national and international communication network, it is ideally placed for the rapid daily supply and onward distribution of a comprehensive range of fresh and processed foodstuffs and horticultural produce.

The City Council first provided wholesale markets during the industrial revolution and the original fish market dates back to 1869, whilst the Fruit and Vegetable Markets followed in 1883. By the 1960's and 1970's the traffic using the markets and the large volumes of produce being handled (600,000 tons per annum) made re-development necessary. Today the amount of produce being handled each year is over 800,000 tons per annum, with an estimated value of over £250 million. Some 2,000 persons are employed in the Precinct. (Birmingham Markets Department)

The Precinct, which is open for trade from 05.30 to 11.15 hours Monday to Friday and 5.30 to 9.15 hrs on a Saturday, occupies a site of 21 acres and incorporates Horticultural, Meat, Fish, Poultry and Growers' markets, two warehouse blocks, two multi-storey vehicle parks, an

administrative office complex, refuse compaction and disposal plant. Shops, banks, offices, a public house and four snack bars, together with ancillary trading units and a Cold Store, complete the facilities available to suppliers and customers and a Control Centre at the Main Entrance co-ordinates security of the whole complex.

A gyratory road system encircles the market complex and an internal road system is flanked by unloading areas adjacent to all trading units.

Facilities for a completely palletised operation can handle container vehicles up to 15 metres long efficiently and speedily. Throughput has more than doubled since the precinct was opened in 1976. Faster distribution has made it possible to satisfy the growing consumer demand for higher quality produce at reasonable cost.

The horticultural market (area 23,300 sq. metres) has witnessed not only a general increase in the volume of trade in 'traditional' fruit and vegetable produce, but also an increase in the diversity of produce available. Passion fruit, kiwi fruit, mangoes, aubergines, capsicums, yams, peppers, okra, etc. are just a sample of the enormous range of 'exotics' which are now a common sight amongst suppliers' displays. (A more comprehensive list appears in Appendix 7).

The building housing this market has been constructed in three legs, with sales units on either side of a central

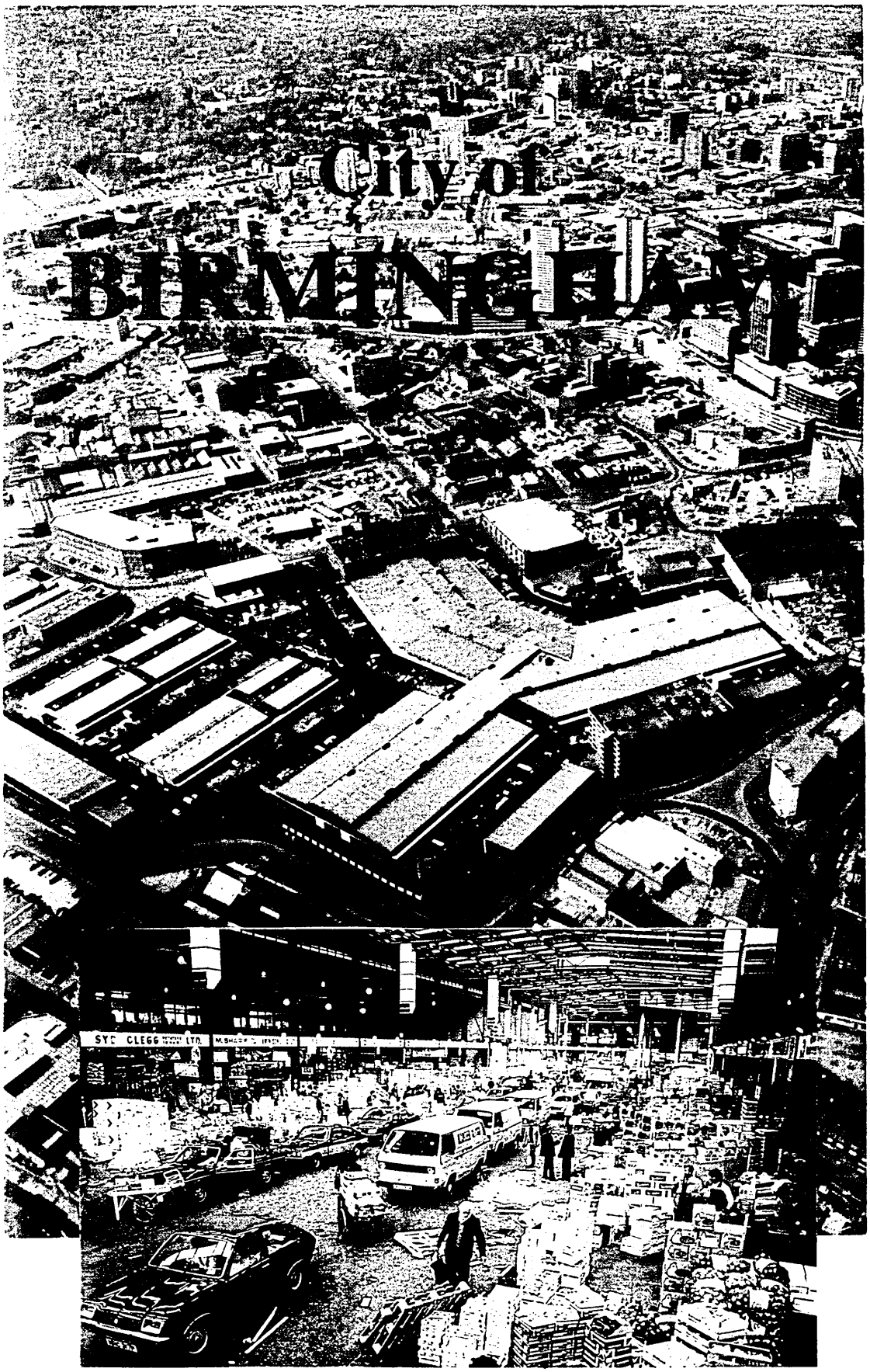
avenue forming a 'Y' shape. Produce is displayed alongside an internal roadway, where buyers congregate and deliveries of goods can take place simultaneously from the exterior. (Illustrated over page, Figure 10)

The Market includes large multiple wholesalers, as well as small traders and caters for the immigrant as well as the indigenous population. Customers include secondary wholesalers, multiple retailers, greengrocers, florists, restauranteurs, hoteliers, publicans etc.

Grower / salesman and country merchants bring fresh produce daily from nearby growing areas such as Bromsgrove, Ombersly, Shenstone and Lichfield and sell from their lorries. Selling mostly vegetables and salads, but also top fruit and soft fruit in season.

The competitiveness of prices in this large primary market, together with the choice and quality, attracts buyers from as far away as the Potteries and the Welsh Coast, along with serving an immediate population of three million.

Figure 10 Birmingham Wholesale Market



New Covent Garden

New Covent Garden Market is the long established wholesale centre for the British horticultural trade. The market's high reputation rests on the wide range of produce on sale and it is the recognised centre for introduction to the United Kingdom of new fruits, vegetables, flowers and plants. It is the largest market in the UK and one of the largest in the world.

Covent Garden's history is reputed to go back to the Middle Ages when the Abbey of Westminster owned a garden -'The Convent Garden' - from which surplus produce was sold to the people of London. In 1670 Charles II granted a charter to William, Earl of Bedford, to hold a market near the old Convent Garden. The market grew rapidly during the next century and the Acts of Parliament of 1813 and 1828 were needed to regulate it. After 1918 ownership of the market was sold by the Duke of Bedford to a property company. The Covent Garden Market Act of 1961 established the Covent Garden Market Authority. Redevelopment at the old site in Central London was not possible and the new site at Nine Elms was developed and opened in 1974.

The market continues to grow - over the past ten years turnover has increased from £89.6m to £278.0m; fruit and vegetables from £74.0m to £225.5m; flowers and plants from £15.6m to £52.2m,(Covent Garden Market Authority). Covent Garden Market is above all a free market. Prices are in

part, set by large suppliers who can specify selling prices for their appointed sales agents but are mostly negotiated directly between buyer and seller in a competitive atmosphere. There is no external or official price regulation.

The market community consists not only of wholesalers but also of importers, catering distributors, buying agents, hauliers, sundriesmen and others. There are over 200 tenants and 3000 people work there. Buyers at the market include secondary wholesalers, retailers - both multiple and independent - stall holders, hotels and restaurants and institutional suppliers.

The market located on the south bank of the Thames, is well placed for both international and national traffic. It is easily accessible from south and east coast ports and from London's two main airports. Virtually all traffic to and from the market is by road and there is parking on site for 2000 commercial vehicles and a 1000 cars.

New Covent Garden is owned by a statutory body, the Covent Garden Market Authority, which administers the market and is responsible for provision of facilities, for maintenance and regulation of the site. Members of the authority are appointed by the Ministry of Agriculture, Fisheries and Food. A series of advisory committees ensures that the views are regularly obtained of tenants, trade unions,

suppliers and buyers.

The 40 acre fruit and vegetable market is designed to separate the commercial activities - produce display, buying and price negotiation- from physical handling of produce. This is achieved by providing pedestrian buyers' walkways running longitudinally through each of the two 400 yard buildings.(Illustrated,figure 11). The main warehouse area of the trading unit is immediately behind with doors opening onto the loading/unloading apron. There are office areas on the upper levels. Deliveries are made from 11pm each night of the week and trading begins at 4am and continues until noon.

The products of virtually every horticultural exporting country can be seen in Covent Garden during the appropriate season. Large quantities come from traditional supplying countries such as Spain and New Zealand whilst other countries such as Brazil, Kenya and Egypt are rapidly growing in importance. Over 70 per cent of Covent Garden's total fruit and vegetable business is in imported produce.

Figure 11 New Covent Garden Market

Buyers Walk

Buyers Walk Fruit and Vegetable Market

The wholesale trade has become more concentrated in recent years with over 80 traders who are on average larger, more efficient and with greater resources than those of the past. Standards, grading and packing are improving as buyers become more demanding.

Spitalfields Market, London E1.

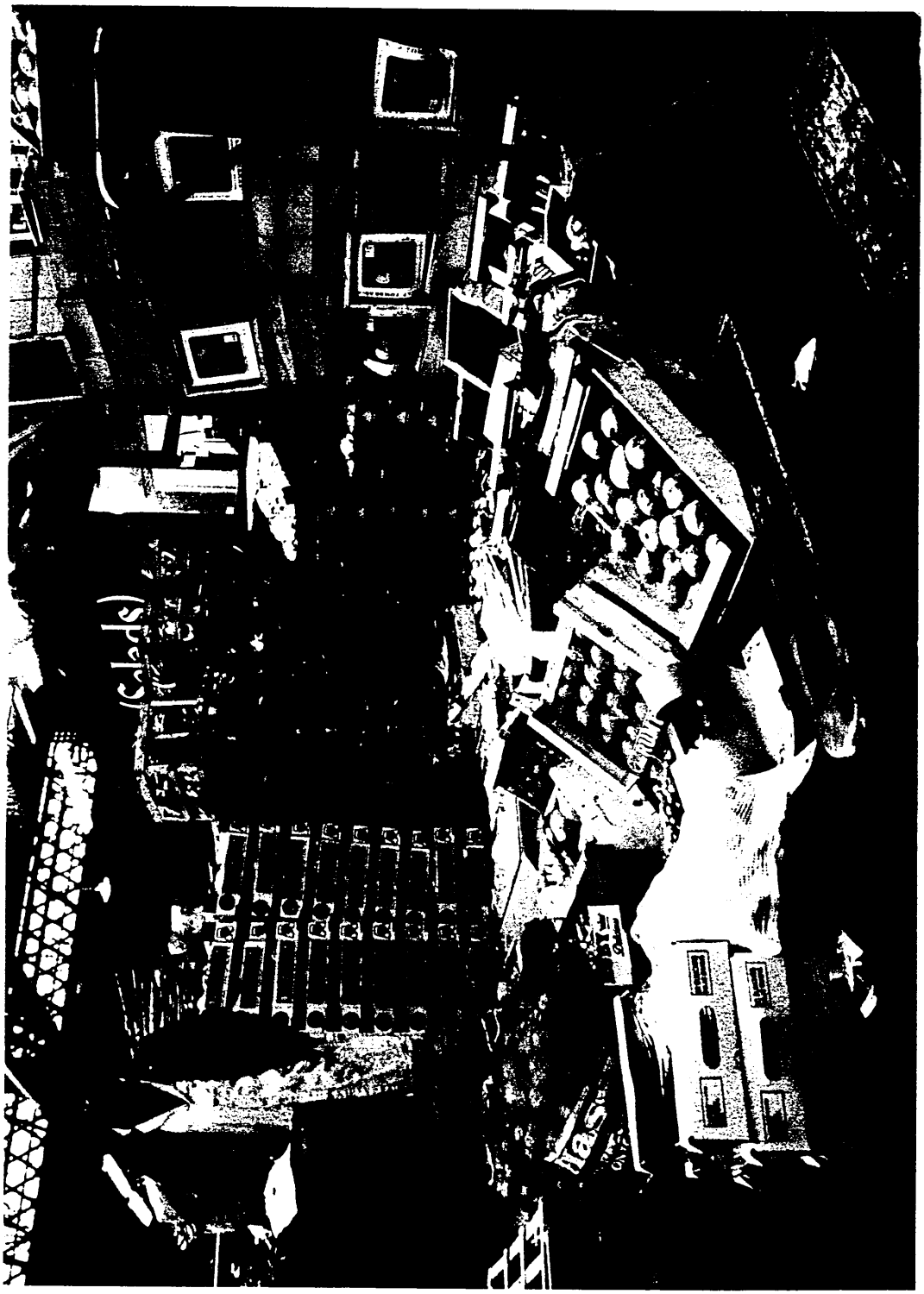
This is an example of a busy market still on its original 12 acre site just outside the City boundaries. The City of London Corperation, who own the market, has always been behind the market remaining at its present site, rather than relocation to Docklands but a move is now imminent. Efforts have been concentrated on improving present facilities, which were not designed with a view to heavy traffic and the use of fork lift trucks, (figure 12).

Acre Produce (Marketing).

Acre are based in London E1, near to Spitalfields and has been in the fresh produce business for a hundred years. While the wholesale distribution side of its operation continues to thrive, in the past few years it has turned its sights to the growing demand for prepared produce and a substantial proportion of their operation is now devoted to this.

The firm offers a product range of over 200 items along with a range of prepared cut vegetables. The pre-prepared items have been popular with retail consumers and the

Figure 12 Spitalfields Market



catering industry, who would otherwise have to depend on manual labour and expensive equipment. Acre also produces over 30 salads either in dry form or in mayonnaise or vinegrette.

The company's premises contain freezers, chillers and ripening rooms. All perishable produce is stored in chillers and tropical fruits in specific temperature controlled rooms. Items such as salads have to be produced in cold conditions and a temperature controlled area is used for this purpose. Products produced in cold conditions are stored in chilled rooms and later transported in refigerated lorries to the temperature controlled depots of their customers. This chain requires considerable planning in production, quality control and distribution,to ensure their is no break in the cold-chain.

Geest Industries.

Geest Industries are one of Britain's largest procurers, suppliers and distributors of fresh produce. Grocery multiples, expanding their business in high-quality fresh produce, are demanding and getting expertise from organisations like Geest in year-round, world-wide procurement. This means quality and reliability of produce grown and distributed under technically ideal conditions and Geest are continually moving towards more highly specialisd distribution to meet the demand for sophisticated temperature and quality control.

Currently Geest operates in more than 30 markets across the country and these account for around 50% of the company's turnover in fresh fruit and vegetables. The company's national network of regional centres and ripening depots link up with a range of interests which include processed foods, shipping and horticulture. A fleet of temperature controlled articulated vehicles deliver produce to the distribution depots and ripening centres and distribute it to the multiples and wholesale markets. Geest's total fleet is approximately 350 vehicles, excluding trailers.

More than 200 different lines of fruits and vegetables are distributed daily throughout the UK. A 24 hour operation enables produce from growers in Scotland, England and Wales or near-Continent, to be on sale to consumers within 24 hours of harvesting.

Geest are able to provide a comprehensive fresh produce service from programmed supply, through temperature controlled storage and handling, to pre-packing and distribution. They have become a major wholesaler - agent to the UK's main retail chains.

The prepared food business, entirely own label, is not only a diversification but an extension of their own philosophy. Geest also has another objective : the development of new products particularly in the high margin, healthy eating areas, which take in fruit and vegetables and prepared

foods. An operation which is directly compatability with grocery multiple aspirations.

Geest began in 1936 when three brothers began the enterprise in Holland, two of them came to Spalding to develop the bulbs and horticultural side and now, Leonard van Geest, (second generation) heads a company that is UK based - and retail oriented.

Francis Nicholls - Geest Industries, Sheffield.
The director at Francis Nicholls, Sheffield, started in the fruit and vegetable trade in a family business at the age of fifteen, thirty years ago. The business operated a secondary wholesale operation out of Castleford and Pontefract - having two market outlets, a warehouse and eighteen lorries. The business of secondary wholesalers contracted and thus their business closed. He worked for a few other wholesalers before taking the position with Geest. He views the future of the wholesale markets pessimistically; 'the rising costs of overheads, excesses of produce and falling returns have led to greatly reduced margins. There is the necessity, if the wholesale markets are to survive, to streamline business operations and improve efficiency. However, this can have the effect of decreasing the level of service and result in a reduced volume of sales. The future of the industry is with the retail sector of the trade'.

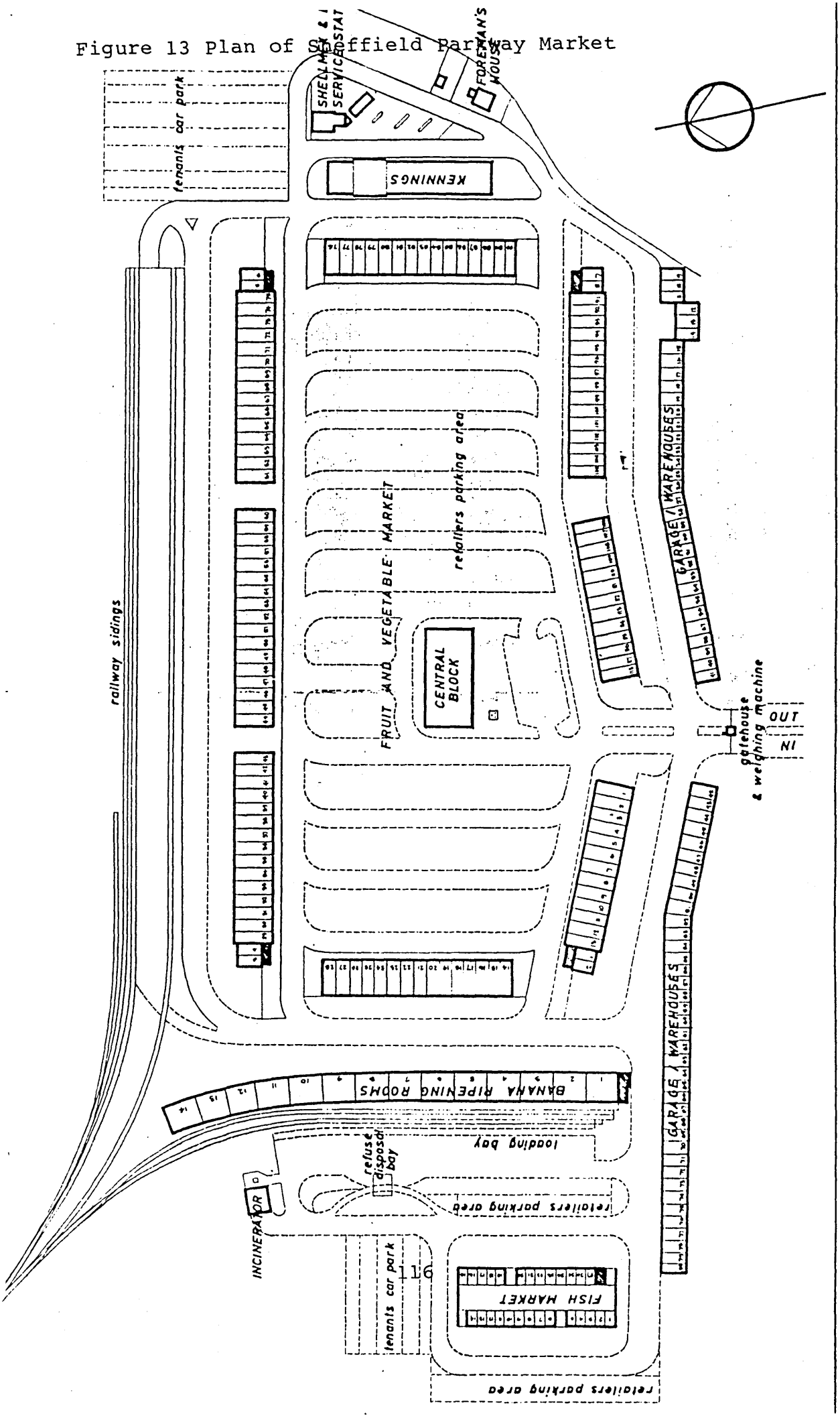
He also identified that where companies are expanding it is at the expense of other firms going out of business.

The Sheffield Parkway Wholesale Market moved to its present site in 1961, when 81 firms occupied the 118 units, 50 with one unit, 26 with two units, 4 with three units and 1 with four units. In 1987 of the 118 units, 111 are occupied by 58 firms; 27 having one unit, 14 having two units, 14 having three units, 1 having four units and 2 having five units. Figure 13 shows a plan of the site, where the fish market is also situated.

Sheffield wholesale market, as are the majority of wholesale markets (there are about five private markets) are under the jurisdiction of the council markets department. Sheffield City Council has sole right to own markets for a distance of 6.67 miles from the 1933 city boundary. The tenants pay a rent, rates and service charge, (for repairs, lighting, security, cleaning and disposal). Ninety per cent of the costs are paid by the tenants, the remaining ten per cent are paid by the council. The service charge paid by the tenants, if not completely utilised must be returned to the tenants, whereas rent and rates go to the treasurer. In 1985 the treasury had £1.7 million profit from the wholesale market.

After a steady period of decline the wholesale market has reached a plateau, with just seven empty units. However

Figure 13 Plan of Sheffield Parkway Market



several units previously empty have been filled by general cash and carry wholesalers and frozen food specialists, rather than fresh fruit and vegetable traders.

Despite efforts by the markets department to encourage promotion of the wholesale market, the wholesalers have not been forthcoming. In 1986 the council offered to match every pound the wholesalers would contribute to an advertising campaign but the wholesalers showed little interest and nothing materialised.

John Cleary Ltd., Leeds Market.

John Cleary Ltd was established in the 1930s in Leeds and is now in the third generation of the family and still a thriving business.

The Leeds Wholesale Market was moved to an out of town site in 1966, when the market consisted of forty wholesalers. The number has now fallen to twenty. The empty units are often taken over by neighbouring wholesalers to use for expansion, as in the case of John Cleary 7 years ago. Their employees number eighteen and trade is divided equally between fruit and vegetables, providing a complete range for customers.

Efficiency is of upmost importance, along with close relations with their suppliers and customers. A high proportion of their business is done to order, so they have

a good idea of the quantities needed to be stocked. In this way wastage levels are minimised and a good, reliable service is provided to the customers. A retailer may be just ten minutes at the market collecting his produce from Cleary's, whereas, for example, if buying from a large wholesaler such as Fyffes, the job may take an hour, fruit, vegetables and flowers being segmented in different parts of the market. Cleary's purchase their produce outright, ensuring class I produce and reducing the paper work involved when commission selling.

It was identified that the larger companies like Francis Nicholls, who sell on commission, tend to stock excess produce resulting in goods having to be sold at a loss. These companies are also prepared to sell such produce as bananas, to smaller fellow wholesalers at a minimum profit level, making it uneconomic for the smaller wholesaler to have their own ripening room.

Dishonesty is prevalent around the markets, a more serious problem to the larger wholesalers, security being harder to control with a large number of employees. The main problems arise when lorries are being loaded and extra pallets are put onto the wrong lorries; the customers say nothing unless they are the ones pallets short.

As regards the size of operations, the larger organisations are increasing in size and the smaller becoming fewer. The

company's view regarding the future of the wholesale markets was that they would be needed to break up bulk and secondary wholesalers would be needed to distribute to areas away from major markets. For example there are no major markets between Leeds and Newcastle leaving a large area to serve.

A contrasting example is that of a commission wholesaler. The wholesaler will take his produce from suppliers he represents on the market and receives commission on what is sold. The wholesaler is however directly responsible for the produce and if he fails to sell it, not only will he receive no commission but he could lose his place on the supplier's panel of wholesalers.

The price that is set is dependent on the return the growers and wholesalers demand. During a day's selling period the price can move up and down - growers and importers telexing the wholesaler regularly to assess sales. If the supplier is making more money elsewhere in the country they will push the price up. On Leeds market there are only five wholesalers who have import licences, underlining the importance of a wholesalers' performance in matching supply with demand to secure the best possible returns for their suppliers.

Customers to the wholesale market are generally loyal to a particular wholesaler and credit terms are offered

providing bank references can be obtained.

Ed Baldwin Ltd, Blackburn Wholesale Market.

Blackburn market is an example of a secondary wholesale market out of which both primary and secondary wholesalers operate.

Baldwins are independent primary wholesalers who specialise in salad stuffs but also stock a range af dairy produce, this diversification giving them a unique selling point on the market, thus attracting additional custom. They deal directly with both home and overseas producers and operate a fully computerised stock control, ordering and invoicing system. Their philosophy for the future is that wholesalers need to adapt, to provide an efficient service and the range of goods demanded to build up their turnover.

Exhibit 1 sums up the general feelings of many wholesalers.

Exhibit 1 'In the words of a wholesaler' -

Fiona Parker - Further to your project request.

A few notes on my existing business - purely vegatables, with a large proportion of this being potatoes.

Changes over the last 5 years:
At wholesale level:
There are contracting numbers of Merchants serving reduced outlets - Greengrocers etc. We expect to see more Wholesalers close down in the near future. Hopefully, the outcome will be that the rest of us will maintain or improve existing volume of sales. Profit margins are under extreme pressure due to :

(a) Competition (Too many people chasing reduced customers)
(b) Wages, general overheads etc.
(c) Unfair lease and high service charges, high rat es., we are jointly attempting to reduce increases from our Landlord - Manchester Corp. Our present lease contains clauses which mean that any unlet premises (some 15/20 units at present) is charged back against existing remaining tenants. Therefore we all have to pay for rent, rates, and service charges on the Landlords empty premises - very cosy for them!! Manchester Corporation have a monopily position because nobody is permitted by Charter to operate a Market within 5 miles of the city centre.

Retail changes:
There are two main reasons forthe decline of the Greengrocer and corner shop:

(1) Small greengrocers are generably unable to afford'High St' rents etc and therefore have to make do with secondary sites.
(2) The Giant Hypermarkets are taking an increasing share due to the trend of 'one stop shopping' together with excellent point of sale skills and top quality produce.

One remedy for retailers to help them compete is to modernize their shops and go over to self-selection.
As far as we are concerned the supermarkets are lost trade because they by-pass the markets due to their vast buying power. They deal direct with the growers and packhouses in the growing areas.

Other factors and conclusions affecting the wholesale trade:
There is a growing swing to people buying frozen and processed vegetables, another nail in the coffin! An interesting anomaly arises here - although we have high levels of unemployment, people are prepared to pay some 4 to 5 times as much for frozen veg then for the fresh. (It might be an interesting ~~exercise~~ exercise for you to extend your project to include a survey as to which social/economic groups buy the frozen veg. It would not surprise me to discover that the poorest people tend to spend their money least wisely).

cont.....

Another problem affecting us is credit control - with so many of our customers going bankrupt, tthere is an increased element of risk. I should point out that a percentage of our trade is to other smaller secondary wholesalers, who seem to be especially vulnerable at present. It seems to be too easy for limited companies to go bankrupt these days with knock-on affects for others. I think almost all of us in this trade feel that their is a strong case for much stiffer laws governing bankruptcy and all of these should be thoroughly investigated by well qualified experts. From what I can see of the new proposed laws in this matter, they are not adequate.

Despite the pessimism projected, I think that there should always be a need for the independant wholesaler/Greengrocer, albeit in reduced numbers. Those of us left in the next crucial years should benefit once a better balance is acheived between wholesalers and the reduced outlets. We have got to adjust to the that a good percentage of our traditional trade is lost forever to the supermarkets and frozen trade.

I hope my views will be of some help to you for your project and I wish you every success.

Michael Jones

Richard Jones M/C Ltd.,
New Smithfield Market,
Manchester.

4.2.2 The Questionnaire to the wholesalers

Empirical detail regarding the structure and conduct of the wholesale trade was collected by means of a questionnaire. (The profile of the sample of wholesalers can be found in section 2.4 and more survey details in Appendix 4)
The results and analysis of the questionnaire can be found in Appendix 4b and are concluded and discussed in chapters 6 and 7. The response rate to the questionnaire was 43 per cent.

4.3 THE RETAILER

As with most independent food specialists, greengrocers and fruiterers have come under increasing pressure from the grocery multiples. The independent sector has declined from 22,000 in 1965 to 13,000 in 1984 (Outspan, 1985), attributable to a changing lifestyle and 'one stop shopping'. Figures among retailers for the first six months of 1986 showed failures of independents totalling 1,500, a rise of 15 per cent over the same period in1985.

The growth of sales via supermarkets offering a wide variety of top quality class I produce, is the biggest factor affecting the decline of both the independent retailer and the wholesale markets. In 1979, 30 per cent of all produce was estimated to be sold via supermarkets, table 3 below gives a breakdown of figures for 1986.

TABLE 3 MARKET SHARE OF FRESH PRODUCE SALES
(Figures for the four weeks to 12 November 1986)

Total fruit and vegetable sales	£167,384,000
Grocers Share	£66,762,000 (39.9%)

Broken down as follows:

Multiple Grocers	39.9%	
Greengrocers	29.8%	
Market Stall	15.8%	
Farm Shop	5.9%	
Marks and Spencer	2.7%	
Others	6.1%	(other department stores)

The 40 per cent that goes through multiple outlets is split:-

Sainsbury	22.2%	
Tesco	18.2%	
Dee Corporation	9.0%	(Gateway, Carrefour, Fine Fare)
Asda	7.9%	
{Argyll	5.0%	(Presto)
{Safeway	5.7%	
Other multiples	9.6%	(Morrisons, Hillards, Kwiksave, Waitrose)
Co-op	11.4%	
Independents	11.0%	(Spar, VG, Wavyline, etc.)

SOURCE: AGB 1986

Trade sources suggest that the process of change will be reaching a plateau towards 1990, when retail distribution will follow a fairly set pattern. However, the retail multiples are concentrating efforts to expand further their share of the fresh produce market, spurred on by lucrative margins. It should be noted that expansion on the part of the multiple will be at the expense of the independent retailer - the fresh produce market being fairly static.

4.3.1 Market Size

The proportion of total consumer spending on food has continued to decline since food prices have risen more slowly than prices of all items. Table 4 below shows the retail market prices for fresh fruit and vegetables between 1980 and 1985.

TABLE 4 THE RETAIL MARKET FOR FRESH FRUIT AND VEGETABLES 1980-1985

(£mn at current prices; indices, 1980=100)

	VALUE	INDEX	RETAIL FOOD PRICE INDEX
1980	2,209.3	100	100
1981	2,385.0	107.9	108.4
1982	2,492.0	112.8	117.0
1983	2,882.1	130.4	120.7
1984	3,032.8	137.3	135.1
1985	3,251.2	147.2	139.1

SOURCE: National Food Survey/Estimates

The market can be divided into major subsectors, fresh fruit being the largest accounting for 35 per cent (by value) of the total in 1984. 'Other' fresh vegetables and potatoes accounted for 28 and 24 per cent respectively, leaving 13 per cent for fresh green vegetables.

Table 5, indicates how the green vegetable sector is dominated by leafy salads. Year round availability and relatively high unit prices take annual domestic sales value to over £120mn. Cabbage with many varieties, and year round availability, follows, with a market value of nearly £110 million. Tomato sales dominate the 'other' fresh vegetable sector, with sales amounting to over £310

million annually. In the fresh fruit sector, apples dominate with a retail market value of £340 million. Bananas follow, with a retail market value of £175 million. All of these items are commodity products, being bought regularly each week, throughout the year.

Consumption figures, shown in Appendix 1, indicate a fairly static picture, and decline for several produce items.

TABLE 5 THE RETAIL MARKET FOR FRESH FRUIT AND VEGETABLES BY TYPE OF PRODUCE, 1984

£mn; %	Value	% of total
Fresh green vegetables	405.9	100.0
of which:		
Cabbages	108.8	26.8
Brussel sprouts	47.5	11.7
Cauliflowers	95.8	23.6
Leafy salads	121.4	29.9
Peas	5.3	1.3
Beans	15.8	3.9
Other	11.4	2.8
Other fresh vegetables	838.9	100.0
of which:		
Carrots	85.6	10.2
Turnips and swedes	31.0	3.7
Other root vegetables	25.2	3.0
Onions, shallots, leeks	115.8	13.8
Cucumbers	64.6	7.7
Mushrooms	114.1	13.6
Tomatoes	310.4	37.0
Miscellaneous	92.3	121.0
Fresh potatoes	729.0	100.0
of which:		
Old potatoes, Jan-Aug	221.1	30.3
New potatoes, Jan-Aug	195.8	26.9
Potatoes, Sept-Dec	312.1	42.8
Fresh fruit	1.059.0	100.0
of which:		
Oranges	134.4	12.7
Other citrus	106.9	10.1
Apples	338.9	32.0
Pears	49.8	4.7
Stone fruit	102.7	9.7
Grapes	49.8	4.7
Soft fruit	56.1	5.3
Bananas	174.7	16.5
Rhubarb	3.2	0.3
Other	42.4	4.0

SOURCE: NFS; Retail Business Estimates

For the year ending July 1986, the apple market showed volume growth of 6 per cent following two years of decline. This reversal was mainly due to a dramatic 18 per cent growth in the volume of French apples sold, which also followed two years of falling sales. The principal reason for their outstanding performance can be attributed to their 'Crunch Bunch' promotional campaign.

A considerable proportion of the fruit and vegetables which have broadened the range in recent years fall into the category 'exotics'. Exotics meaning produce grown abroad which have only become known as a success with the British public in recent years. This sector has been particularly successful and shown steady growth. The Fresh Fruit and Vegetable Information Bureau considers consumption of exotics to have doubled since 1980 and the overall market value was worth about £130mn in 1985. Supermarkets have been quick to respond to this trend in stocking a wide variety and providng point of sale information to inform the consumer about preparation methods. As a growth market, however, it should be noted that exotics still only account for about 4 per cent of sales (by value).

Despite media coverage, the NACNE and the COMA reports (recommendations appendix 6) over the last decade, highlighting how unhealthy the average British diet is, consumption of fresh produce has shown no dramatic change. Recent research,1986,carried out by the Fresh Fruit

and Vegetable Information Bureau on consumer eating habits indicated that 20 per cent of 'housewives' were completely disinterested in their diets and its relationship to health. Furthermore, the report showed that, while 60 per cent of 'housewives' questioned were partly committed to healthy eating, many found it difficult to interest husbands or children - so there was room for improvement.

In its Food Survey report for the fourth quarter of 1985, derived from records provided by 1747 UK households the Ministry of Agriculture showed that low fat milks are gaining ground, butter and margarine dropped back while low fat and dairy spreads increased; fresh fish was up; spending on vegetables increased, although some sectors declined; citrus fruits and fruit juices increased and did well; sugar purchasing was down, although preserves gained ground; and wholemeal and other breads continued to erode the share held by white bread.

Expenditure on vegetables was 11 per cent higher in the fourth quarter of 1985 compared with the same period of 1984. Within this group, consumption of potatoes and fresh vegetables was lower but that of other fresh vegetables and of processed alternatives, especially frozen and canned, was higher.

Expenditure on fresh and processed fruit was 15 per cent higher than 1984 with expenditure on most categories increasing. In volume the consumption of apples and

canned fruit was lower but that of citrus fruits and fruit juices was 20 per cent higher.(National Food Survey)

Although there is potential for expansion in the fresh produce market, convenience is often a deciding factor favouring purchases of frozen or pre-prepared produce.

4.3.2. PACKAGING

With fresh produce markets becoming more demanding in terms of quality and presentation of commodities on offer, the role of packaging continues to assume tremendous importance. Not only must the quality of the produce be good, the whole package must look the part. The range of packaging materials available today is vast and types exist to meet almost every requirement, from preservation to presentation.

At the most basic level packaging breaks produce down into discrete units, usually by weight or count, which conform to buyer requirements. It also has a protective function, to prevent damage in transit and in some cases to help maintain other aspects of quality such as freshness and shelf life. For example, special plastic films have been developed with perforations, pores or even selective permeability to oxygen and carbon dioxide. Facilitating ease of handling is another role, either as a single pack unit or collectively - especially in terms of transport and distribution.

Fulfilling the physical requirements is a necessity but packaging has an equally important part to play in presentation - visual appearance to the buyer at trade or consumer level.

Presentation of fruit and vegetables has improved over the past few years. UK growers of produce were inclined to rely on the produce 'selling itself' until faced with increased competition, especially from other EC members. Fruit, especially, was and still is in some cases, 'jumble packed' (i.e. loose in cartons or trays with possible damage to the bottom layers and surface layer). The example set by suppliers in New Zealand, The Netherlands, South Africa and, more recently, the French apple growers has encouraged UK growers to acquire merchandising skills and improve packaging and presentation.

The improvement has not spread out to all retail greengrocers. The fruit and vegetables for UK consumption are of high quality, wide variety and attractive appearance but by the time the produce reaches some of the less competitive areas of the high street greengrocer, these attractions are not always on show. Only ten years ago, cabbages, sprouts, potatoes and other vegetables were hardly prepared at all before being presented to the consumer. The supermarkets have been instrumental in radically improving the presentation of produce to the consumer, along with the consumer becoming more demanding

for quality produce.

Major multiples have overcome the suspicion with which prepacked fruit and vegetables was viewed by offering 'free flow' produce, which customers bag and then have weighed and priced. Conveniently sized pre-packs are also available. In this way they offered a facility (picking out the items) liked by consumers and a better service than traditional greengrocers, many of whom have since initiated 'self-service'. However, the quality/freshness/price balance is not always in the supermarkets' favour - indicated by the high proportion of sales still from market stalls.

Green crops, such as cauliflower, are now trimmed and packed 'face up' so that the quality of each head is visible. Cabbage, sprouts and leeks are much more often trimmed so there is little wastage. Root crops are washed and packed into nets in convenient portable weights. Certain vegetables and salads are available specially prepared for complete convenient salad dishes for consumers who are prepared to pay for convenience.

Gas packed raw vegetables have been available to large scale caterers for some time and are now being sold to the public. Air is excluded and replaced with a mixture of carbon dioxide, nitrogen and oxygen, which slows down vegetables' ageing and bacterial deterioration and prevents browning. If the pack is chilled at 0-5°C, the

vegetables keep in their original state for up to ten days. The packaging of some fruit in this way is also being considered.

Marks and Spencer, most of whose fresh fruit and vegetables are prepacked, has ensured there is no customer resistance by ensuring top quality produce (at premium prices) at all times.

The future undoubtedly will bring many changes in the field of packaging at trade level. The materials, products and technology, be it manufacturing, machinery or printing are there to be exploited to the good. It is the package on the chocolate bar which forms the basis of its image and marketing strategy, so should the same approach to a more natural and healthy range of produce not be successful?

4.3.3 PROMOTION AND ADVERTISING

The promotional or brand image can exhibit tremendous variety, from the simplest single colour markings to full colour packs with a special identity of their own. In some cases this latter aspect can be seen not just for an individual brand but on a much more widespread basis. The Dutch Central Bureau of Auctions, for example, has developed a colourful national livery which extends to all exports of salads and glasshouse vegetables reaching countries in Europe and beyond. The pack attracts the buyer because it is eyecatching, but also the produce

within is of a considerably high standard to encourage repeat purchase or 'brand loyalty'.

The pack can say a lot about the produce within it. There is an implied correlation between the effort which has been put into the provisions of a functional and good-looking pack and the expected quality of the produce carried.

In line with efforts made to improve quality of produce, growers and others involved at the supply end of the marketing spectrum have worked hard on their packaging but this is not universal. In some ways it is a vicious circle, producers arguing that their produce does not make the returns to justify expensive packaging, e.g. apples cost 2p per pound to pack in printed cardboard boxes.

In some commodities the advent of new and successful packaging has transformed the marketing scene. Several years ago the Dutch developed a pack for radishes which, in a short period of time, elevated the product from the mundane to the sought after.

Advertising expenditure on fresh fruit and vegetables is small in comparison with the size of the market. In general, fresh produce is seen to be a commodity and there has been little attempt at branding, other than by the overseas marketing boards. The sheer number of competing wholesalers, producers and retailers and the lack of packaging obviate against branding other than on a few

varieties such as Iceberg lettuce. The presence of branded imports in the U.K. market has encouraged certain initiatives, such as the National Federation of Fruit and Potato Trades' successful slogan of 1986 'Fresh is Best - Naturally', the Potato Marketing Board's 'Great Brits' promotion and promotions by Food from Britain, attempting to emphasise the quality of fresh U.K. produce, with a 'Quality Mark'. It should be noted that most consumers are not even aware of the country of origin when they buy their fresh produce. (Deciduous Fruit Board).

Appendix 8 shows the relatively low level of above-the-line advertising expenditure. The French, South African, Israeli and Spanish Marketing boards are the only significant regular advertisers. The marketing boards are also active in below-the-line advertising, with much point-of-sale material being distributed to greengrocers via wholesalers. Total advertising expenditure by the fresh fruit and vegetable trade, including point of sale posters, is estimated to amount to £4mn-5mn annually. Among U.K. suppliers' efforts, the mushroom industry's campaign is an example of success of the collective effort of growers marketing a largely unbranded commodity.

The Fresh Fruit and Vegetable Information Bureau (FFVIB) was set up in 1976 to promote and increase consumer awareness and consumption of all fresh fruit and vegetables in the U.K. Promotion is mainly through wide editorial publicity in the national media and the Bureau

provides a daily information service giving prices and availability of all fresh fruit and vegetables. In 1984 it published the Exotic Fruits Book and it is currently running a Demi-Veg Campaign with a cookery book - 'Demi-Veg - the new style of cookery - that is not quite vegetarian'. This is a five-year campaign aimed at an estimated 19 million adults interested in a 'demi-veg' diet.

Many companies give support to the FFVIB, but there are still some who do not contribute and are happy to reap the rewards of the extra business generated by the high level of publicity achieved, without paying for them. It is this lack of commitment at all stages of fresh produce distribution that is holding back the growth of the industry.

Market expansion for sales of oranges, grapefruit and apples, traditionally three of Britain's favourite fruits, would be possible given the right approach to marketing and promotion, say AGB Attwood, who monitor the fresh produce market. Sales of all three fruits are in long term decline and their purchasers are increasingly the older age groups and homes without children. On the same note Dick Walding of the Apple and Pear Development Council (APDC) feels strongly that unless the virtues of fresh fruit are advertised on a generic basis, funded by all suppliers to the market, the industry will continue to lose ground to major competitors - the producers of convenience and snack

foods.

For their 1986/87 promotional campaign the APDC have adopted the slogan 'REAL English Apples and Pears - you can tell them by their taste'. Costing in the region of £400,000, activities are aimed at promoting the distinct personality and quality of home grown fruit with a view to improving upon British apples' 44 per cent share of the home market.

The future trade of the wholesale markets as they are today lies predominantly with the independent retailer. The future of the independent retail trade as a whole rests upon the ability not only to compete with the multiples, but through effective publicity to increase total consumption.

The Retail Fruit Trade Federation was established over 50 years ago to represent the interests of the High Street fruiterer. The Federation represents the views of its members to government, the media, legislators, etc. and provides a comprehensive range of services to members to enable them to trade more efficiently and profitably. In certain areas, for example Birmingham, there are close links between the Retail Federation and the wholesalers, when promotions arise at retail level wholesalers will be informed and can bolster their stocks to match increased demand - everyone working towards one objective. Advertising does not need to be expensive to be effective,

but before promotion begins retailers must ensure their shops are in the right condition; quality produce requires complementary surroundings. Staff should also have knowledge of the produce they handle to advise the consumer on keeping qualities, preparation methods etc.

Retailers can also take advantage of other promotions such as the National Federation Slogan: 'Fresh is Best - Naturally' and utilise it on carrier bags and polybags at relatively low cost. Use of point-of-sale material (often available from producers via wholesale markets) can make an impact during special promotions.

January 1987 saw the launch of a new self-funding promotional scheme to boost public awareness of the independent retailer, in his fight to stem the losing market share battle in the high street. The scheme 'Best shops in town' identifies the skills and value of those remaining retailers. The 'Best shops in town' are defined as those perceived to offer good service, range, quality and value for money. They are initially to be chosen by the public themselves, through commissioning AC Nielsen who are already surveying a sample of consumers' attitudes based on 46 different independent retail categories. The independent retailer will be asked to sign up for the minimum two-year contract, costing £1,750 for the first year, and an initial readership fee of £100. These collective funds will be used to embark on identifying and promoting the participants. The scheme is

on trial in Reading.

4.3.4. RETAIL EXAMPLES

The first example is of an independent retailer with two outlets in Aylesbury. The business originally consisted of three outlets but due to dramatic increases in overheads the third outlet was no longer feasible. The company's overheads had risen 40 per cent in 1986 over 1985, with rent and rates accounting for the major part of the rise.

The customer count for 1986 was similar to that of 1985 and the value of takings was up by a third, the shops offering a self-selection service (reducing the number of staff employed) and a personal service which continued to attract custom. The retailer used to specialise in Exotic produce which attracted additional custom, however the variety now offered by the multiples no longer makes it a unique selling point.

He maintains a consistently high quality range of competitively priced produce sourced from both wholesale market (New Covent Garden) and grower. However, he does feel that the wholesale markets have become a secondary part of many growers' businesses, as they become geared to supply the multiple trade.

This example is typical of many independent retailers questioned.

The second example gives details of a major retail

multiple's fresh produce operation.

For several years the multiple used their local wholesale market to supply their stores with its fresh produce requirements but it was found to be unreliable for quality and continuity of supplies - the major buying criteria.

In order to secure a continuous supply of produce at a satisfactory level of quality, direct links were forged with growers usually dealing through a marketing agent such as Saphir, or a grower co-operative's marketing department. These have been found a useful means of conferring quality and continuity requirements, for which the mulitple is prepared to pay a premium price.

The multiple has recognised that growers can be identified as two distinct groups as far as marketing development is concerned 'the haves' and 'the have nots'; for example, 'apples and pears' have developed a relatively structured organisation level whereas 'carrots' as with many vegetables are an area where little development has taken place, so the use of a marketing agent is necessary.

A four tier operations structure exists at their central fresh produce depot: marketing, merchandising, buying and technical support services. The depot has moved from being buyer orientated to a consumer orientated operation.

Two years ago their produce range numbered 100 items, the range has now widened to more than 200 items of fruit and

vegetables per week. The buyers set a 12-24 month plan for each item of produce, to ensure a continuous supply as far as possible. Over a 12 month period they will have used about 400 different lines.

An example of produce selection can be given for Golden Delicious apples, sourced from several countries around the world. There are three types of specification:

Class I	loose	size: 69-75 cm	This represents about 60% of available apples and 50-60% of actual Golden Delicious sales.
Class I	polybag	size: 60-65 cm	30% of crop 30-40% of sales.
Class I	(supreme) 6 packs	size: 75-79 cm	10% of crop 5-10% of sales.

Cape (South Africa) are usually the best apples but the consumer is becoming changed to accept a more yellow apple - as can be produced in New Zealand. These have in the past been of a poorer quality but more recently quality targets have been satisfied so supplies of New Zealand Apples will increase.

Quality and continuity are the most important criteria for both buyer and consumer, although price does play a role. The company constantly strive to increase efficiency, for example, their packaging charges are about half of what they would be if an outside third party were involved.

They also try to offer value for money packs - bulk packs allowing the consumer to purchase produce at a few pence cheaper per pound, which is what 30-40% of consumers seek.

Regional variations in consumer demands needs consideration. For example, in Scotland 20 cases of red apples are sold to every 8 cases sold in England and the stores cannot sell celery, parsnips or beetroot. In contrast the Welsh consume large quantities of parsnips. New varieties of apple sell best in the South East and exotic produce sales are similar throughout the British Isles. The prices charged to the consumer for all types of produce are the same in all stores. Effort is also made to ensure continuity of stable pricing - unlike the day to day price fluctuations experienced by consumers purchasing from an independent retailer.

Each store receives six deliveries per week which arrive at the same time each day. A quarter of a million cases go through their four depots each week, each working on a 24-hour basis. The process starts on a Wednesday when the buyers decide the following week's range, this is computerised and requisition sheets are sent to each store. On Saturday the stores (via VDU) place their daily requirements for the following week. It is up to the store managers to judge supply and demand to minimise wastage. The orders are processed daily so alterations can be made if necessary.

The stores will also receive a bulletin on promotions, footages etc.

The depot covers an area of 40,000 square feet, 30,000

square feet being accounted for by warehousing, storage, quality control, goods in/out and the packhouse. The packhouse just handles chosen lines of produce that are 'clean' and need no washing, for example apples, tomatoes, onions, oranges, etc. - 60,000 individual packs are processed each week.

The buyers have a placed programme with all suppliers, having predetermined delivery times so they know what is going to arrive and when. There is a quality inspection - random sampling from each delivery - ensuring specifications are satisfied. On average the produce will be at the depot for 2 to 3 hours, although produce such as mushrooms and lettuce are straight into the depot and out again. The maintenance of a cool chain during distribution is essential to extend the shelf-life of the produce to maximise the product's freshness at time of purchase by the consumer.

Close liaison has been established with some growers indicating a degree of vertical integration. For example, the production of Iceberg lettuce. A producer approached the multiple with the idea of producing out of season produce over the winter. The idea was considered favourably and financial backing made available.

The company sees potential for further expansion of fresh produce sales with under 50 per cent of their customers purchasing fresh produce along with their general grocery

items. However, by 1991/92, it is expected that multiple expansion for out of town superstores will have reached saturation.

4.3.5 THE QUESTIONNAIRE TO THE RETAILERS

Empirical data regarding the structure and conduct of the retail trade was collected using a questionnaire, (response rate 37%).

The profile of the sample of retailers can be found in section 2.4 and an example of the questionnaire can be found in appendix 4 along with the results and anlysis, (appendix 4c).

The results are concluded and discussed in chapters 6 and 7.

5. PERFORMANCE

Associations between market conduct and market performance can be defined but cannot be accurately measured to permit meaningful association. Elements of structure can be readily measured and some aspects of performance are measureable therefore it was possible to observe empirical links between market structure and market performance. At this stage marketing margin analysis was adopted.

5.1 The Collection of Data for Marketing Margin Determination.

There are many pitfalls in the collection and intepretation of the data on marketing efficiency and failure to appreciate these leads to severe problems in comparing marketing systems, identifying problems and proposing solutions.

The starting point in collecting information is to identify the costs incurred at each stage of the marketing process and the returns made by those engaged in marketing processes and then to judge whether these costs and margins are reasonable in relation to the services being rendered; whether more or less services should be provided to assist consumers, marketing agents and/or farmers; and whether future improvements are likely to follow from the present level of remuneration obtained by those engaged in producing or marketing the commodity being studied.

5.1.1 Sources of error and ambiguity.

(a) The reference product.

It might at first seem immaterial whether the product is traced from the farm gate to the consumer, or starts at the consumer and works back to the farmer. In practice the need for a consistent approach soon becomes apparent. This is because wastage and loss mean that only rarely does 1 lb of product being sold by the farmer result in the same 1 lb of product being sold to the consumer. The method used in this case was to start with 1 lb of product as purchased by the consumer (the reference product) and then work back through the marketing system identifying all the costs associated with this 1 lb of reference product.

(b) Identifying costs.

For most items of fresh produce it is relatively easy to identify the price at which the reference product is bought or sold, although there may be a range of prices in operation at one time. The difference between the sale price and purchase price of 1 lb of the reference product at any marketing stage is called the GROSS MARGIN for that stage. The difference between the consumer purchase price and the farm gate price of 1 lb of reference product is called the TOTAL GROSS MARGIN.

The identification of costs at each stage is more difficult because this requires obtaining information from the marketing agents; several problems can arise.

The agent may be handling more than one product and several items of cost may be shared amongst the various products, e.g. a retail shop selling a wide range of food would have difficulty in accurately defining the cost associated with selling 1 lb of say apples.

The costs associated with marketing 1 lb of product may vary considerably depending on circumstances e.g. location - transportation costs from market to retail outlet, or grower to market; and local authority rates vary regionally. There are also a variety of ways in which agents may estimate and report on capital costs associated with the marketing process.

The NET MARGIN is defined as the gross margin minus all costs paid. At some stages the marketing agent hires or purchases the majority of resources he uses, in other situations most of the services are provided by resources which the agent himself owns. Consequently, it is possible that two situations performed with similar effectiveness and with similar gross margins may have widely differing net margins.

(c) Wastage.

During the marketing process some of the produce may be lost, stolen, spoilt or wasted so that more than 1 lb of produce is required at the beginning of a marketing stage to provide the consumer with 1 lb of the reference

product. It is important to take wastage into account otherwise the picture obtained of the efficiency process may be distorted. However it has to be assumed that wastage is held in the same perspective at each stage of the distribution channels, ie that one sector does not unduly raise their prices to compensate for waste.

(d) By-products.

During distribution from farm gate to retailer a small percentage of produce may be sold to processors if a decrease in quality makes it unsuitable for direct sale to consumers. For example, apples might be sold for processing into juice.

The procedure used was to record the value of the by-product at the point where it is created and to subtract the by-product value associated with 1 lb of the final product at each previous stage in the marketing process back to the farm gate. In this way the value of the by-products is 'netted-out' or excluded from the calculations, leaving only the costs and margins associated with the reference product. Here it is assumed that by-products hold equal effect at each stage of the distribution channels.

5.2 The Methodology Adopted.

In practice most products are handled by several different intermediaries between farm gate and the consumer and wastage and the creation of by-products may occur at

several different stages. Losses through wastage at one stage influence the quantity required at all other stages and it is thus necessary to devise a procedure which ensures these adjustments are made methodically. Appendix 4 provides greater detail about the survey design, data being collected from growers, wholesalers and retailers whom on returning their questionnaires had expressed an interest to provide further assistance. Exhibit 2 was the sheet used to gather data from the companies.

Exhibit 2
Marketing Margin Data Collection Sheet Example
DETERMINATION OF MARKETING MARGINS
(All information will remain confidential and be used anonymously)

RETAIL STAGE
(Approximations are satisfactory providing figs. are relative to each other)

Type of retailer? (multiple, ind.greengrocer)

Type of produce (British)	APPLES Class I (Cox)	PEARS Class I (Conference)	CARROTS Class I English	CUCUMBERS Class 1 English
Percentage of produce lost through waste	%	%	%	%
Percentage of produce sold as a By-product (eg apples for juice)	%	%	%	%
Value per lb of produce sold for By-product	p/lb	p/lb	p/lb	p/lb
Selling price to consumer/lb OCTOBER 1985	p/lb	p/lb	p/lb	p/lb
Costs / lb:-				
eg Overhead costs ie:- (rent, labour, power)	p/lb	p/lb	p/lb	p/lb
Transport	p/lb	p/lb	p/lb	p/lb
Storage	p/lb	p/lb	p/lb	p/lb
Packing	p/lb	p/lb	p/lb	p/lb
Others:-(state)	p/lb	p/lb	p/lb	p/lb
Purchase price from w'saler/ Grower* OCTOBER 1985	p/lb	p/lb	p/lb	p/lb
Type of wholesaler? (Primary/Secondary*)				

The analysis starts with the same product purchased at the same point in time by the consumer at independent and multiple retail outlets and traces this back step by step to the farmer. One sheet (Exhibit 2a) contains all information relating to a particular stage, the original data being presented in the columns on the left-hand side of each sheet. The mechanisms and procedures for obtaining the appropriate conversion factors are contained in the centre columns of each sheet. For intermediate stages, the selling price at one stage becomes the purchase price of the next stage. The number of sheets used to analyse a marketing channel is equivalent to the number of stages in that particular marketing system, i.e. if there are 3 stages: retailer, wholesaler, farmer, 3 data sheets will be required.

Each sheet refers to stage N: this means the stage being studied on that sheet. Stage N+1 means the stage one closer to the consumer than the current stage and stage N-1 refers to the stage one closer to the farmer than the current stage.

A conversion factor (Fn) is determined at each stage, accounting for loss and by-products, thus generating the pounds of purchased product to produce a pound of the final product for sale. The general formula is shown in column 4 (exhibit 2a) -

$$Fn = Fn+1 \times \frac{1.00}{1-Ln}$$

(Ln=proportion of loss represented by by-products+physical loss)

This is a two stage formula, the conversion factor from the previous stage (Fn+1) is multiplied by the conversion factor for this stage. For the retail stage ie the first stage - Fn+1 = 1 (1lb of the reference product is required to produce 1lb of the final product). For the retail stage in Exhibit 2a

$$1 \times \frac{1}{1-0.03} = 1.031$$

is calculated and the answer 1.031 is recorded in column 5 as Fn. In effect because of the weight loss, 1.031lbs of produce needs to be purchased from the wholesaler to obtain 1lb of produce to sell to the consumer.

An illustrative example appears in Appendix 5a, showing the mechanics of the calculation. The elements of the calculation can be defined in the following way:-

Sn = selling price to stage N+1xFn

Pn = purchase price from stage N-1xFn

Cn = total costs x Fn

Mn = net marketing margin

Summarising -

Mn = Sn - Pn - Cn

This procedure is then repeated for each stage in the distribution channel and a summary of the marketing costs and margins can be produced. This will enable comparisons to be drawn between the costs of marketing the same item of produce and also indicate variations in costs for different items of produce.

Exhibit 2a
Example of a marketing margin calculation sheet.

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Exhibit 2a		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		40			x Fn+1 +	40	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 40 Sn
ITEMISED COSTS	6							
1	7	+						
2	8	+						
3	9	+						
4	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 6.15		x Fn				= 6.341 Cn
PURCHASE PRICE FROM Stage N-1	15		24	x Fn			24.744	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 24.744 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				8.915 Mn
	18							
	19							

5.3 The Results

This section contains a summary of the results of the marketing margin survey. The completed data sheets used to determine the marketing margins can be found in Appendix 5b - grower, wholesaler, independent greengrocer; and grower - multiple retailer, for the four items of produce investigated - class I Cox apples, class I Conference pears, class I English carrots and class I English cucumbers.

In this section the results are presented by produce type, namely apples, pears, carrots and cucumbers. For each type of produce the gross and net margins are identified at each stage of the two channels of distribution and aspects of these are then illustrated by means of a histogram, a table and two pie charts.

Table 6 provides a summary of the marketing margins calculated. Several points can be noted from the table and the pages that follow. Firstly, that for all produce, the margin received by the farmer is greater when distributing produce directly to the retailer. Secondly, the gross margin at both multiple and independent retail stages are similar. However, the independent retailers' costs account for a higher proportion of the gross margin than do the multiples' costs, so their net margin is less than the retail multiples'. Thirdly, the wholesalers' net margin is relatively small. Forthly, wastage levels are less during

Table 6 Summary of Marketing Margin Analysis Results.

MARKETING MARGIN ANALYSIS RESULTS

	CLASS I COX'S APPLES (LOOSE BOXED)				CLASS I CONFERENCE PEARS (LOOSE BOXED)				CLASS I ENGLISH CARROTS (SACKED)				CLASS I CUCUMBERS (SHRINK WRAPPED AND BOXI			
	CHANNEL OF DISTRIBUTION				CHANNEL OF DISTRIBUTION				CHANNEL OF DISTRIBUTION				CHANNEL OF DISTRIBUTION			
	MULTIPLE		W'SALE/RETAIL		MULTIPLE		W'SALE/RETAIL		MULTIPLE		W'SALE/RETAIL		MULTIPLE		W'SALE/RETAIL	
	p	lb	p	lb	p	lb	p	lb	p	lb	p	lb	p	lb	p	lb
RETAILERS' PRICE TO CONSUMER	45	1.00	40	1.00	34	1.00	27	1.00	20	1.00	12	1.00	52	1.00	44	1.00
(retailers' costs)	(2·43)		(6.54)		(2.46)		(3.84)		(1.92)		(1.84)		(2.08)		(5.72)	
(retailers' net margin)	(11.74)		(4.84)		(8.82)		(2.52)		(4.47)		(2.18)		(12.41)		(4.88)	
WHOLESALERS' PRICE TO RETAILER			28.64	1.064			20.64	1.031			8.42	1.053			33.4	1.031
(w'salers' costs)			(1.5)				(0.53)				(0.46)				(1.56)	
(w'salers' net margin)			(0.6)				(0.5)				(0.06)				(1.06)	
FARMERS' PRICE TO W'SALE/RETAIL	30.51	1.031	25.85	1.064	22.56	1.042	19.44	1.063	13.61	1.031	7.9	1.145	37.34	1.042	30.6	1.04
(farmers' mkting costs)	(10.63)		(10.92)		(9.34)		(9.52)		(3.65)		(2.09)		(10.14)		(10.12)	
FARMGATE PRICE (incl cost of production)	19.88	1.15	14.93	1.182	13.22	1.133	9.92	1.155	10.05	1.047	5.81	1.18	27.2	1.114	20.48	1.112

p = pence/lb of reference product net of by-products

lb = lb of raw material per lb of reference product

direct distribution. Finally the price paid by the consumer for the produce is greater when purchasing from the multiple retailer, although the marketing costs and margins account for a smaller percentage of the consumer price compared with the relative proportion of the independent retail price.

Table 6a provides a further breakdown of the cost distribution. The most notable point from this table is that the costs of the multiple retailer are less than those of the independent retailer, labour charges accounting for the majority of the cost difference.

Table 6a
Summary of cost distribution

APPLES

(costs p/lb)	GROWER	W'SALER	G'GROCER	MULTIPLE
Packing (labour+materials)	3.37		0.25	
Grading+O'heads	2.86			1.46
Storage	2.15		0.25	
Transport	0.86	1.41	1.15	
Rent+o'heads			4.5	0.9
Labour				

Cont'd

PEARS

(Costs p/lb)	GROWER	W'SALER	G'GROCER	MULTIPLE
Packing (lab.+materials)	3.21		1.88	
Grading+o'heads	2.10			1.36
Storage	1.15		0.74	
Transport	0.86	0.5		
Rent+o'heads			1.1	1.0
Labour				

CARROTS

(Costs p/lb)	GROWER	W'SALER	G'GROCER	MULTIPLE
Packing (lab.+materials)	0.2		0.125	
Grading	0.6			
Storage	0.5		0.125	1.23
Transport	0.9		0.5	
Rent+o'heads	1.2	0.4	1.0	0.5
Labour				

CUCUMBERS

(costs p/lb)	GROWER	W'SALER	G'GROCER	MULTIPLE
Packing (labour+materials)	3.1		0.25	
Grading + o'heads	2.7			1.0
Storage	0.8		0.9	
Transport	2.5	1.5	1.15	
Rent+o'heads			3.25	1.0
Labour				

NB These costs have not been adjusted for wastage or by-products.

Class I Cox Apples (cell packed box)
[Illustrated in Figure 14 and 14b]

The farmer has a gross margin share of 65.5% of the independent retail price, 37% net margin (less marketing costs) and approximately 13% profit.

The wholesalers' gross margin is 5.5% and net margin is 1.5% of the retail selling price.

The independent retailer receives 29% of the retail price as gross margin with a net margin of 12%.

From the farm gate marketing costs and margins account for 63% of the consumer price.

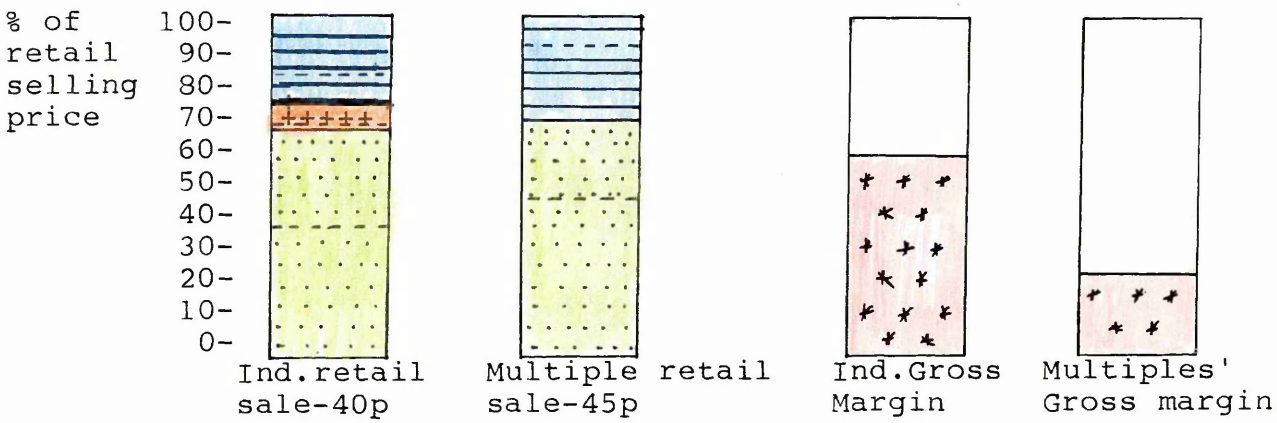
When selling directly to the multiple the farmers' gross margin is 68% of the retail price with a net margin of 44% and approximately 21% profit.

The retailers' share is 32% of the price as gross margin with a net margin of 26%.

From the farmgate marketing costs and margins account for 56% of the consumer price.

Figure 14. Illustration of Marketing Margin Analysis

Results For Apples.



---- = net margin

GROSS MARGINS: Grower = ...
Retailer =
W'saler = +++++

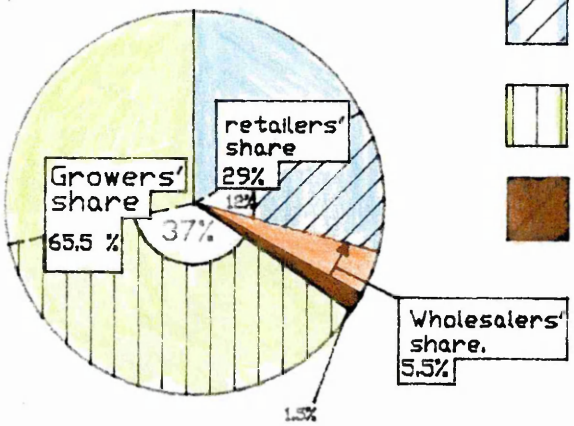
The Proportion of retail gross margin accounted for by costs = *****

Summary of results for apples

	Distribution via market-40p		Distribution direct-45p	
	Gross margin p (%)	Net margin p (%)	Gross margin p (%)	Net margin p (%)
GROWER	26.2(65.5)	14.8(37)	30.6(68)	19.4(44)
W'SALER	2.2(5.5)	0.6(1.5)		
RETAILER	11.6(29)	4.8(12)	14.4(32)	11.7(26)

FIGURE 14b ILLUSTRATION OF THE SHARE OF THE MARKETING MARGINS.

DISTRIBUTION VIA THE WHOLESALE MARKETS.



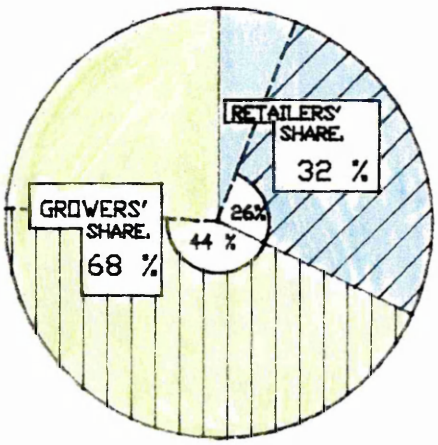
= Retailers' net margin.

= Growers' net margin.

= Wholesalers' net margin.

For 1 lb of Cox's apples Sold by an independent greengrocer.
- 40 pence

DIRECT DISTRIBUTION FROM GROWER TO MULTIPLE.



= Retailers' net margin.

= Growers' net margin.

For 1 lb of Cox's apples sold by a major multiple supermarke

- 45 pence.

Class I Conference Pears (cell packed boxed)
[Illustrated in figure 15 and 15b]

The farmers' gross margin share is 72% of the independent retail price, with a net margin of 37% and approximately 9% profit.

The wholesalers' gross margin is 4% of the retail price with a net margin of 1.85%.

The independent retailer has a gross margin of 24% of the retail price and a net margin of 9%.

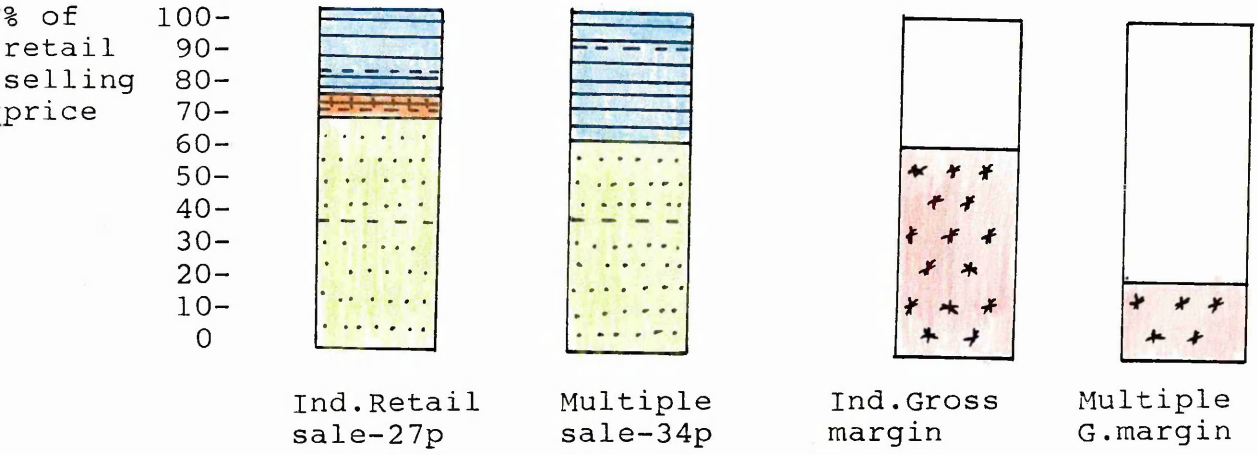
From the farmgate marketing costs and margins account for 63% of the consumer price.

The farmers' gross margin share is 67% of the multiple retail price with a 39% net margin, and a profit of approximately 17%.

The multiple retailer has a gross margin of 33% of the retail price, with a net margin of 26%.

From the farmgate marketing costs and margins account for 61% of the consumer price.

Figure 15 Illustration of the Marketing Margin Analysis Results for Pears.



----- = net margin

..... = Growers' gross margin
= Retailers' gross margin
+++++ = W'salers' gross margin

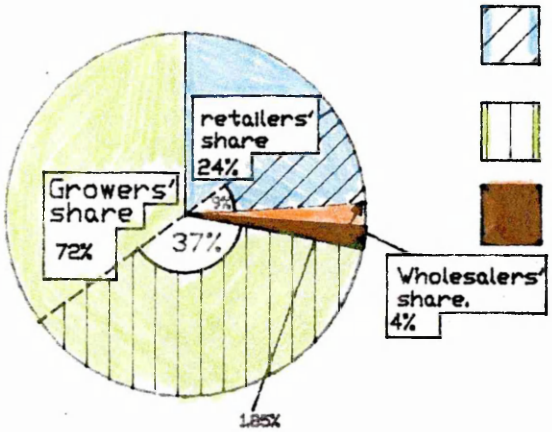
***** = Proportion of retail gross margin accounted for by costs.

Summary of results for pears.

	Distribution via market-27p		Distribution direct-34p	
	Gross margin p (%)	Net margin p (%)	Gross margin p (%)	Net margin p (%)
GROWER	19.44(72)	9.99(37)	22.78(67)	13.26(39)
W'SALE	1.08(4)	0.44(1.85)		
RETAIL	6.48(24)	2.43(9)	11.22(33)	8.84(26)

FIGURE 15b ILLUSTRATION OF THE SHARE OF THE MARKETING MARGINS.

DISTRIBUTION VIA THE WHOLESALE MARKETS.



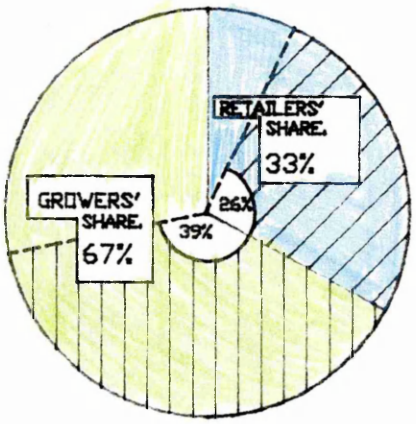
= Retailers' net margin.

= Growers' net margin.

= Wholesalers' net margin.

For 1 lb of Conference pear Sold by an Independent greengrocer.
- 27 pence

DIRECT DISTRIBUTION FROM GROWER TO MULTIPLE.



= Retailers' net margin.

= Growers' net margin.

For 1 lb of Conference pears sol by a major multiple supermarket

- 34 pence

Class I English Carrots (sacked)
[Illustrated in figures 16 and 16b]

The farmer has a gross margin share of 64% and a net margin of 48% of the independent retail price, with profit approximately 23%.

The wholesalers' gross margin is 4% with a net margin of 0.5%.

The independent retailers' gross margin is 32% with a net margin of 18%.

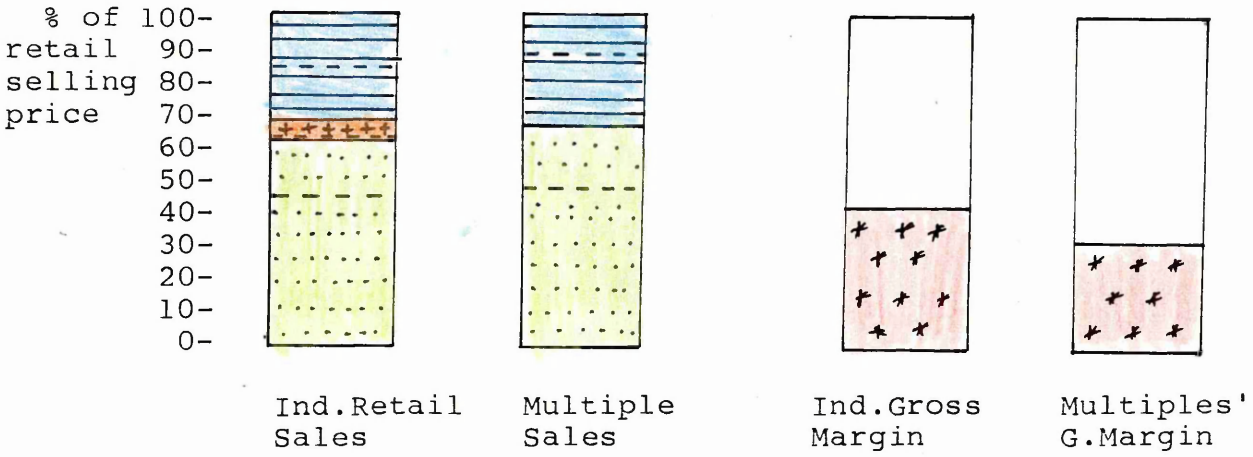
From the farmgate marketing costs and margins account for 52% of the consumer price.

The farmers' gross margin of the multiple retail price is 68%, with a net margin of 50% and approximate profit of 28%.

The multiples' gross margin of the retail price is 32% with a net margin of 22%.

From the farmgate marketing costs and margins account for 50% of the consumer price.

Figure 16 Illustration of the Marketing Margin Analysis Results for Carrots.



----- = net margin

..... = Growers' gross margin
= Retailers' gross margin
+++++ = Wholesalers' gross margin

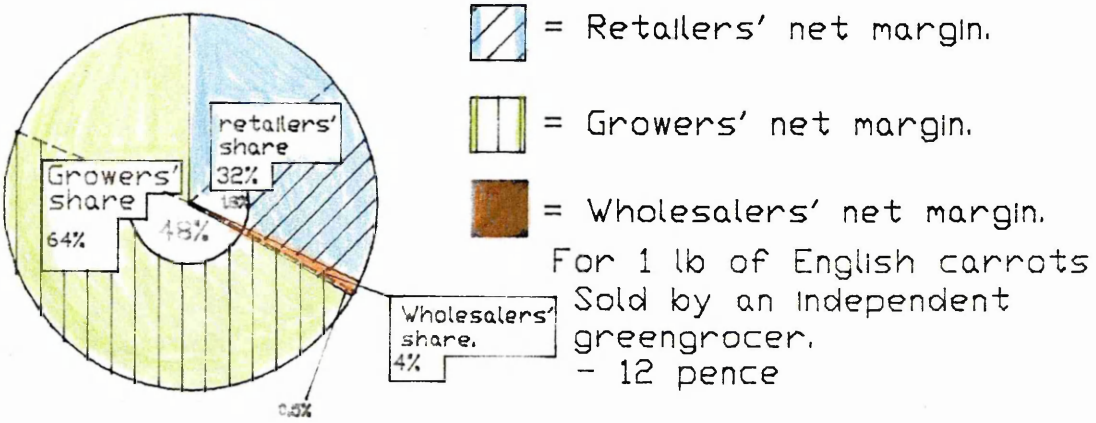
***** = Proportion of retail gross margin accounted for by costs.

Summary of results for carrots

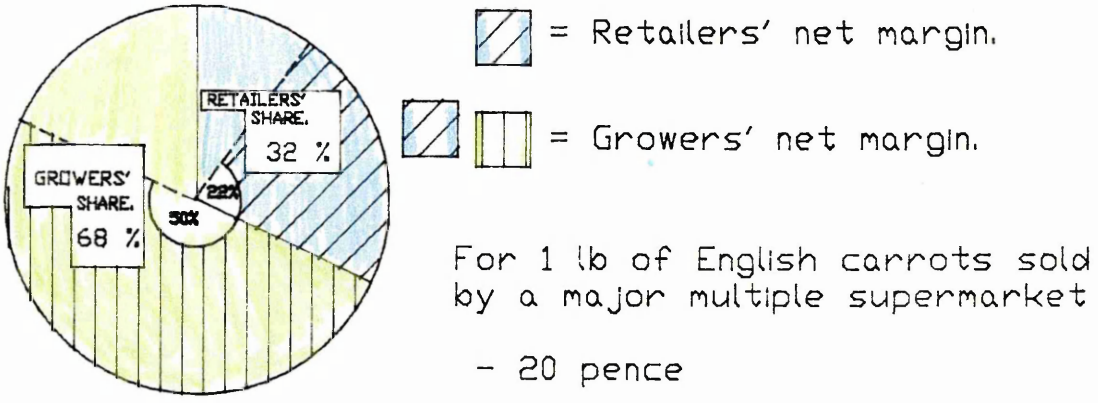
	Distribution via market-12p		Distribution direct-20p	
	Gross margin p (%)	Net margin p (%)	Gross margin p (%)	Net margin p (%)
GROWER	7.68(64)	5.76(48)	13.6(68)	10 (50)
W'SALER	0.48(4)	0.06(0.5)		
RETAILER	3.84(32)	2.16(18)	6.4(32)	4.4(22)

FIGURE 16b ILLUSTRATION OF THE SHARE OF THE MARKETING MARGINS.

DISTRIBUTION VIA THE WHOLESALE MARKETS.



DIRECT DISTRIBUTION FROM GROWER TO MULTIPLE.



Class I English Cucumbers(shrink wrapped and boxed)
[Illustrated in figures 17 and 17b]

The farmers' gross margin share is 70% of the independent retail price, with a net margin of 47% and approximate profit level of 12%.

The wholesaler has a gross margin of 6 % and a net margin of 2% of the retail price.

The independent retailer has a gross margin of 24% and a net margin of 11%.

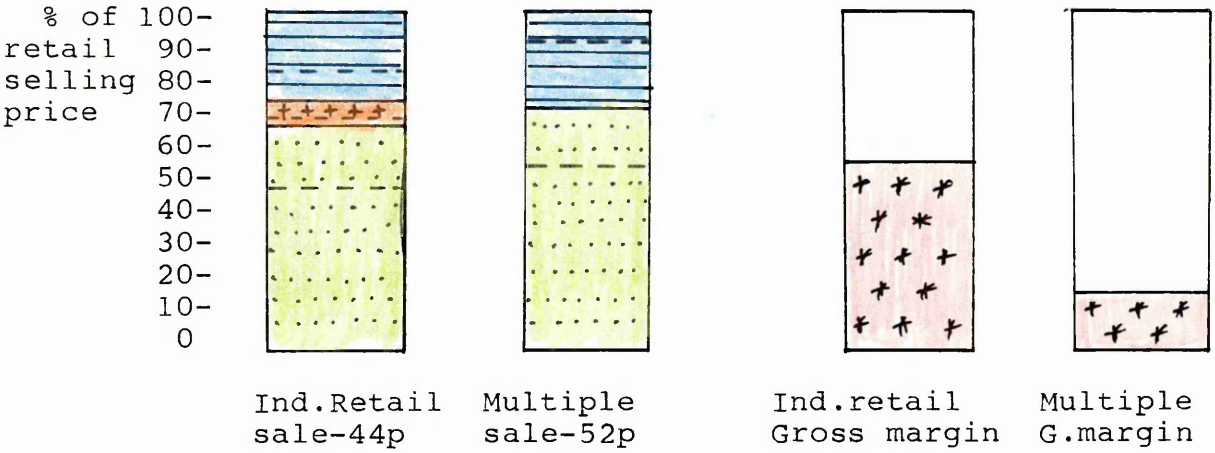
From the farmgate marketing costs and margins account for 51% of the consumer price.

The farmers' gross margin is 72% of the multiple retail price, with a net margin of 53% and approximate profit of 23%.

The multiple retailers' gross margin is 28% with a net margin of 24% of the retail price.

From the farmgate marketing costs and margins account for 47% of the consumer price.

Figure 17 An Illustration of the Marketing Margin Results for Cucumbers



---- net margin

.... = Growers' gross margin
= Retailers' gross margin
++++ = Wholesalers' gross margin

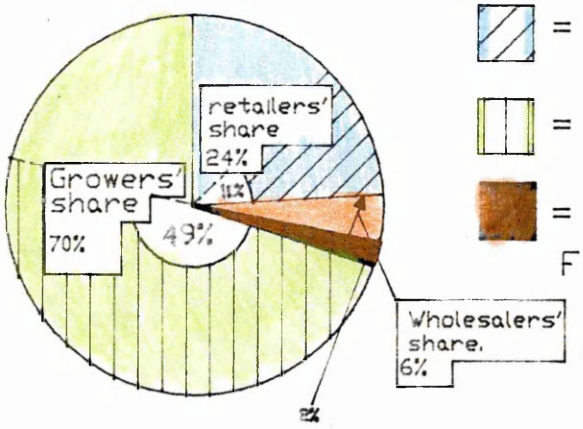
**** = Proportion of retail gross margin accounted for by costs.

Summary of results for cucumbers.

	Distribution via markets-44p		Distribution direct-52p	
	Gross margin p (%)	Net margin p (%)	Gross margin p (%)	Net margin p (%)
GROWER	30.8(70)	21.56(49)	36.92(71)	25.48(49)
W'SALER	2.64(6)	0.88(2)		
RETAILER	10.56(24)	4.48(11)	15.08(29)	12.48(24)

FIGURE 17b ILLUSTRATION OF THE SHARE OF THE MARKETING MARGINS.

DISTRIBUTION VIA THE WHOLESALE MARKETS.



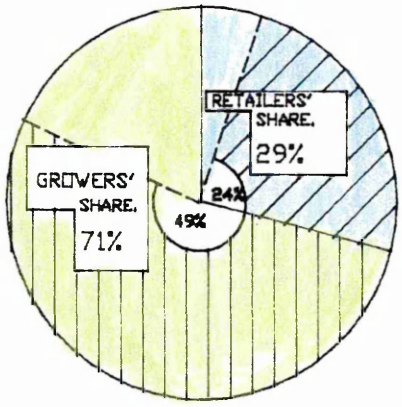
= Retailers' net margin.

= Growers' net margin.

= Wholesalers' net margin.

For 1 English Cucumber Sold by an independent greengrocer.
- 44 pence

DIRECT DISTRIBUTION FROM GROWER TO MULTIPLE.



= Retailers' net margin.

= Growers' net margin.

For 1 English Cucumber sold by a major multiple supermarket

- 52 pence

Figure 18 provides a summary of marketing costs and margins.

Figure 18 Percentage of the Consumer Price Accounted for by the Marketing Costs and Margins.

	Distribution via market	Distribution direct
APPLES	63%	56%
PEARS	63%	61%
CARROTS	52%	50%
CUCUMBERS	51%	47%

Chapter 6.2 draws conclusions from the marketing margin results identifying empirical links between structure and performance.

6 CONCLUSIONS

Section 6.1 draws conclusions from the results generated from chapter 4 and appendices 4a,b and c - structure and conduct analysis. Section 6.2 considers the conclusions from Chapter 5 - the performance of the structure (and conduct).

Section 6.3 summarises the implications of the industry's structure and conduct on performance, identified as the relative efficiences of operation between traditional wholesale distribution and direct distribution to retailers.

6.1 Structure and Conduct

The 1960s were the period when growers recognised a market opportunity to serve retailers direct - many forming themselves into co-operatives and consequently benefiting from the economies of scale when investing in new technology and improved facilities. Of growers questioned in the survey 61 per cent (Appendix 4a, no. 4) were members of a co-operative group, however it should be noted that the members were primarily fruit growers.

Table 7 shows the distribution of fresh produce at the initial part of the food chain through various marketing channels.

For apples no really noticeable change can be observed

between 1981 and 1986, although in previous years it can be seen there has been a decrease in volume going to traditional wholesalers and an increase in volume going to the multiple grocer.

Table 7 Distribution of fresh produce by channel from the growers.

(% volume)

	1981	1986
Apples		
Grower Co-operative	3.5	3.5
Grading/Packing Co.	0	0
Wholesale Market	25.3	26.7
Multiple Retailer	41.6	42.1
Ind Retailer	8.3	8.3
Processor(canning/freezing/further processing)	21.3	19.3
Consumer	0	0
Pears		
Grower Co-operative	0	6.5
Grading/packing Co.	0	0
Wholesale Market	76.0	60.3
Multiple Retailer	11.2	21.4
Ind Retailer	4.6	4.6
Processor(canning/freezing/further processing)	8.1	6.2
Consumer	0	1.0
Cauliflower		
Grower Co-operative	0	0
Grading/packing Co.	3.1	3.1
Wholesale Market	79.8	38.5
Multiple Retailer	6.3	10.4
Ind Retailer	0	0
Processor(canning/freezing/further processing)	10.2	47.1
Consumer	0.6	0.9
Cabbage		
Grower Co-operative	0	0
Grading/packing Co	0	35.7
Wholesale Market	94.3	28.6
Multiple Retailer	0	22.9
Ind Retailer	0	0
Processor(salads,further processed goods)	0	7.1
Consumer	5.7	5.7

With respect to cauliflowers, dramatically less are going to the wholesale market, with increases going to multiples and processors. Volumes for cabbage have again dramatically decreased with respect to wholesale markets and increased to the multiple and processor.

The increase in cabbage and cauliflower sales to processors can largely be accounted for by the increased production of more convenient forms of 'fresh' produce. Increasing quantities of cauliflower being frozen and used in pre-prepared salads and cabbage also being used in salads and for coleslaw.

Appendix 4a No. 5c identifies one major benefit resulting from direct sales to retailers, that is that they experience higher profit margins, the majority of growers achieving a 10-15 per cent higher margin.

Turning to method of sale - firm price or commission. Of the growers questioned 54 per cent of sales were firm price - firm price being favoured as the price is assured and there is better control of the market and consequently price, preventing flooding of the market. (It should be noted that a higher proportion of vegetables and perishable produce are sold on commission through the markets).

It would also appear that given the opportunity the

majority of growers will hold produce to release on to the market at a later date when prices are at a premium. However, not all produce is storable, eg strawberries, and in other cases, eg cabbage, the cost of storage is not justified. Also out of season produce can often be imported at prices less than the cost of storing home grown produce.

Several sources of information regarding stocks and prices are used by growers (Appendix 4a, no 7). The effect of increased information is to increase firm price sales, it allows a choice to be made regarding the wholesale market to be used depending on the best prices. It allows better timing of marketing each variety in any season. Where little information is available, the grower relies on mutual trust to ensure the wholesaler secures a fair price.

Turning to the patronage of the wholesale markets. The majority of growers will use several wholesalers in different markets on a regular basis. This, coupled with the number of growers using one wholesaler in one market indicates that about 60 per cent of the growers are loyal to particular wholesalers. The remaining 40 per cent send their produce to the market where it will get the best price regardless of the distance.

There is a feeling from growers that the wholesale markets have become completely outdated due to a lack of a central

information system and it is increasingly difficult to find reliable wholesalers. They also feel that the wholesalers should buy home produced produce on a firm basis as they do their imported produce. Further comment by a grower in defence of the markets identified that if growers were told to send a better grade of produce to the wholesale markets, the prices made would be higher and the role of the wholesaler improved.

As regards the future of the wholesale markets 75 per cent of the growers questioned saw the markets continuing to decline.

Wholesalers. The annual turnover represented by the companies sampled was £700 million. (Total UK fruit and vegetable sales through wholesale markets are about £2,000 million). However almost 80 per cent of the value can be accounted for by 20 per cent of the companies. (Appendix 4b, no.2).

The majority of the wholesalers questioned were physically handling the produce, incorporating a delivery service.

Supplies were generally sourced from growers, although secondary wholesalers were used, particularly for pears and apples. This could be attributable to grower co-operatives having just one particular wholesaler they use on each

market, so the other wholesalers on the market obtain their supplies from that wholesaler. This could be a case of 'brand' loyalty on the part of retailers who recognise quality standards of particular growers and will use the wholesalers selling that particular 'brand'.

Table 8 shows the distribution of the fresh produce from the wholesalers.

Table 8. Distribution of fresh produce by channel from wholesaler to retail outlet (value £million/annum).

	1981	%	1986	%	1991	%
Market Stall	58.460	(10)	55.742	(9.2)	41.720	(7.4)
Greengrocer	80.253	(13.7)	71.693	(11.8)	67.380	(11.9)
Ind.Supermkt	20.591	(3.5)	18.161	(3.0)	19.064	(3.4)
Multi. S'mkt	310.01	(53.0)	364.45	(60.3)	381.92	(67.4)
2ndry W'saler	113.98	(19.5)	82.310	(13.6)	55.010	(9.7)
Caterer	1.104	(0.2)	11.624	(1.9)	1.702	(0.3)

Sales to multiple retail outlets are relatively high but can be accounted for by the large wholesalers operating largely outside the wholesale markets. Sales via the specialist sector retailers have declined, although the forecast for sales to the greengrocer is that they will stabilise. The secondary wholesaler is also of less significance.

Appendix 4b no. 6 shows sales of class I produce from the wholesalers to be greater than 60 per cent for all the produce concerned.

The statistical analysis conducted (Appendix 4b no.16) show associations between companies with a high turnover and value of class I sales, so this would again indicate that it is the wholesalers with the high turnover, (necessary for high capital investment required to permit supply to multiples) who secure class I produce for the multiple retailers. This analysis also showed significant association between value of turnover and the value of sales on a firm price basis. 42 per cent of wholesalers were in favour of firm price sales, saying that they lead to more stable business arrangements and market stability, as well as securing higher margins and assuring quality of produce obtained. 36 per cent of wholesalers were however discontented with the idea of firm price sales, a typical comment being - 'the market is governed by supply and demand, therefore flexibility in price structure is necessary.'

Wholesalers feel they have increased their efficiency and the service provided (Appendix 4b, no. 15), but in return the industry has been unable to raise its revenue in real terms. The market wholesaler depends for much of his revenue on commission received for items handled. Thus, his gross income is largely determined by a combination of the rate of commission, the level of prices and the amount

of throughput.

When questioned about the volume of produce, almost 60 per cent expected this would decrease, along with 50 per cent of the wholesalers expecting the quantity of class I produce on the markets to decrease -this would result in lower prices to the wholesalers, promoting a gloomy future for the wholesale markets. The wholesalers expect firm price sales to increase which might be an improvement over poor commission rates.

Although exotics look a promising proposition to the wholesalers with possible higher returns, (over 70 per cent of the wholesalers expecting the volume of exotic produce on the markets to increase), it should be noted that some require extra care which may significantly raise their handling costs, so reducing anticipated contribution to revenue.

Bankruptcies and company liquidations are currently running high and in addition the presence of excess capacity in the wholesale markets means that everytime a firm drops out of business, there are fewer companies over whom the fixed costs of these facilities can be spread, for example in Manchester Market. It is clear that a major cause is the growth of direct sales which have not been offset by increasing consumer demand or the widening of the product range.

In other cases the relatively low barriers to entry for the

trade attracts new companies increasing competition for trade. There are also companies experiencing expansion, often the big companies getting bigger with the capital to invest in new technology and cool chain distribution facilities. However any growth is at the expense of other companies going out of business.

The depressed situation of the wholesale markets is not only a worry for the wholesalers but also for the growers, as fewer buyers also weakens their position. It is in their interest to supply the quality and range of produce needed by the wholesalers to obtain a fair price.

Retailers - 54% of those questioned were experiencing an increase in fruit and vegetable sales compared with 21% experiencing a decrease. Explanations for increased sales were improved presentation and store image(including going over to self-service in the case of many greengrocers), improved quality of produce, promotional activity and hard work,(early starts to secure quality and variety of produce at the wholesale market).

Appendix 4c no. 4 shows the source of the retailers' produce. It shows the primary wholesalers are still playing an important role and supplying a significant quantity of class I produce. However if the sources were assessed in value terms it is likely that the importance of the growers as suppliers would rise significantly.

Figures from the survey (Appendix 4c,no.5) show that less than 20 per cent of the retailers are loyal to one wholesaler, the majority using several wholesalers in one market on a regular basis. 48 per cent of the retailers obtained specific services from their wholesalers, ranging from preparation and delivery of orders to providing advice and advertising material. However, 54 per cent of the retailers perceived the future importance of the wholesale markets to decrease.

Issues which have arisen over the past five years or so, identified by the retailers (Appendix 4c,nos.7 and 9) are concerned with both their supply and demand. On the supply side the multiples have priority over the quality produce and in the words of a greengrocer,"the wholesale markets are inefficient - the retailers have had to change, so the wholesalers should". There have also been changes in buyer behaviour with the move to 'one-stop' shopping and consumers are looking for good quality, for which they are prepared to pay. 'Pick your own' and farmgate sales have also affected sales of some produce eg.strawberries. The number of independent retailers has decreased and their trade is being eroded by multiple retail sales. Overall consumer demand is also static.

The pressure on the wholesalers with diminishing margins and bankruptcies also has knock-on effects for the independent retailers. There is scope for more co-

ordination and co-operation between wholesaler and retailer, so they can work together to provide what the consumer demands, similar to the operation conducted by the multiple retailers. The wholesalers could for example ensure the produce from the growers is in satisfactory form for the consumer - packaging standards of British produce still falls short of the standards of imported produce. Traditionally the wholesalers were a necessary pivot, as the only path between grower and retailer - now it is necessary for the wholesalers to give their business a unique purpose to re-establish their function within the distribution operation or alternatives will be found.

6.2 Performance

Having identified issues concerning the structure and conduct of fresh fruit and vegetable distribution, the link with performance, via the use of marketing margins, will be concluded.

The survey provides an overview of the magnitude and composition of the marketing costs and margins. With the growing importance of marketing services, it appears essential that the marketing costs and margins be reviewed regularly, by Government or Trade organisations, in order to assess their effect on producer and consumer prices. A regular review will at the same time indicate opportunities where more in-depth studies are required in order to advise

on the scope for reducing costs through reduction of losses, better transport, storage and marketing planning. This requires the consideration of alternative forms of organisation and techniques of marketing which will lead to improvement in the performance of the marketing system, such as reducing costs and/or improving services to farmers and consumers. In-depth analysis of marketing costs and margins appears even more justified in view of the growing complexity of the marketing system (such as the general trend for marketing costs and margins to expand as a result of, for instance, new technology.) Such in-depth studies have to pay particular attention to adequacy of services, to the recovery of capital invested and to incentives at each stage of the marketing system to generate the services and investments necessary for marketing facilities.

Comparisons of the size of the distributive margin with the cost of production may be very unsound because of the high costs involved in the effective creation of utilities in the field of distribution. These costs may be quite essential and willingly paid for by consumers. Figure 18, shows the marketing costs and margins as a percentage of the consumer price. Apples and pears have the highest percentage of costs at 63% when distributed via the wholesale markets and at 56 and 61 per cent respectively when sold directly to the retailer. These costs can be accounted for by investment in sorting, grading, packaging, distribution and storage facilities - necessary to provide

the quality of produce demanded by the retail multiple (consumer) and minimises wastage; storage reducing market gluts and unsold produce. Carrots and cucumbers have costs and margins accounting for 52 and 51 per cent of the consumer price. The prime reason for a lower cost is probably that carrot storage does not involve as great an investment as the controlled atmosphere stores used for the fruit and the cucumbers are perishable and therefore do not incur the same storage costs.

When distributed directly to the retailer, marketing costs and margins account for a smaller percentage of the price paid by the consumer - both the grower and retailer gaining a larger margin. For the produce surveyed the price paid by the consumer is also higher - the consumer being prepared to pay the extra to assure higher quality.

Looking in more detail at the gross margin - the retailers' share via each channel of distribution is very similar. However the net margin of the multiple retailer is much greater than that of the independent retailer - the multiple's costs accounting for about 20 to 30 per cent of their gross margin, whereas the independent retailer's costs are 40 to 60 per cent. The multiple's unit costs being significantly less as a result of economies of scale - a high turnover and a relatively efficient operation. Thus maximising returns from high investments in their distribution facilities.

Multiple retailer's net margin of between 22 and 26 per cent in these cases, also allows excess capital for promotion, reinvestment, market research and improvement in services to the consumer. Consumers do however pay for this extra service and it is evident that not all consumers are satisfied with this situation; a multiple's survey recently showing only 43 per cent of their shoppers purchasing items of fresh fruit and vegetables when they did their grocery shopping. This leaves 57 per cent to patronize alternatve sources such as the independent greengrocer. Although unable to offer all the facilities such as car parking, as wide a range of fresh produce (up to 200 lines), the independent greengrocer can offer a good selection of quality produce, with the personal service which some people still prefer. So it is necessary for the independent greengrocers to fight to maintain their share of the consumers, as the multiples strive to increase their share still further. Of course if the overall market were to expand, perhaps as a result of generic advertising on the part of the producers, then both channels could prosper.

The wholesalers gross margin is just a small percentage of the overall distribution costs, between 4 and 6 per cent and their net margin in some cases is less than 1 per cent. This highlights further the importance of turnover - as soon as sales volumes begin to decline the wholesaler is heading toward financial problems. It also indicates that

operating to such a tight margin those who survive and prosper must have an efficient operation to allow new capital investment.

6.3 Summary of Conclusions

Within the structure-conduct-performance framework there are elements of structure (conduct) relating to the efficient performance of the distribution function which have not been investigated, due to the nature of the study. For example the construction of cost/prices at both production and retail stages.

Figure 19 illustrates the findings of this study within the framework of the structure-conduct-performance paradigm.

Figure 19 THE CONCLUSIONS OF THE STUDY WITHIN THE FRAMEWORK OF THE STRUCTURE - CONDUCT - PERFORMANCE PARADIGM.

TRADITIONAL DISTRIBUTION CHANNEL VIA WHOLESALE MARKET

DIRECT DISTRIBUTION TO RETAILER

STRUCTURE

- Wholesaler's commission rates are low, throughput static and there is a reluctance by many to accept firm price trading.
- Buyer behaviour has altered with a move to 'one stop' shopping and increasing demand for top quality produce.
- Forward planning and co-operation between wholesaler and independent retailer would reduce waste at the w'sale markets and help secure class I produce on a firm price basis - giving the w'saler greater control over his business operations.
- Wholesalers have no means of/or do not take advantage of collective discussion.
- Customers at the markets cannot satisfy their demand for class I produce :.consumers are supplied with class II goods,(40% mkt stock cLII)
- Increased formation of growers into co-operative organisations.
- Collective forms of organisation make it difficult for w'salers to negotiate on equal terms.
- Storage technology increasing gowers' influence on distribution.
- Technological investment, eg Cool Chain distribution, is expensive yet necessary to permit multiple supply.
- Customers at the wholesale markets find wholesalers unreliable.
- There is a lack of stock and price information at the w'sale markets.
- 75% of growers questioned consider that the wholesale markets will continue to decline in importance.
- Overall demand for fresh fruit and vegetables is relatively static.
- Improved presentation and store image has increased sales in over 50% of retailers sampled.

CONDUCT

- Growers are encouraging firm price trade increasing their control on price formation.
- Improved communications allows the growers to choose where they send their produce.
- 'Branding' of produce has led to a degree of brand loyalty - advantageous to the wholesalers stocking those goods.
- Growers receive 10-15% higher margin when selling diectly to retailers.
- The majority of retailers use several different wholesalers on one market :. w'salers could improve their customer loyalty, eg by the provision of an enhanced service, or range of goods.
- The majority of wholesalers are not market oriented and they depend on the 'traditional' structure/conduct for their existence.

PERFORMANCE

- Gross margins to both multiple and independent retailer are similar but the independent retailer incurs higher costs per unit turnover and consequently has a significantly reduced net margin.
- Wholesalers' net margins are less than 1% so it can be concluded that those w'salers who are prospering must be operating an efficient business. Many businesses are facing liquidation as a result of falling sales and increased rents/rates not compensated for by increased revenue.
- The consumer pays more for the produce surveyed when purchasing from a multiple retailer.

The points below provide a more detailed summary of the conclusions.

1 Many growers are forming themselves into co-operative groups to enable investment in new technology demanded by multiple retailers, therefore increasing their volume of sales by-passing the wholesale markets.

2 The majority of growers achieve a 10-15% higher margin when selling direct to the retailer, therefore it is the retailer, not wholesaler, who has priority over class 1 produce.

3 Growers are encouraging firm price selling to wholesalers as it reduces administrative costs and there is increased control of quantities on the market (preventing gluts) and consequently price.

4 Improved storage technology allows growers to store produce (eg apples) to release onto the market at premium prices. However with an increasing number of imports and extended growing seasons, perhaps the high cost of storage may soon not be recoverable.

5 Availability of reliable information regarding stocks and prices is increasingly demanded by growers to determine their choice of market for daily sales - depending on price maximisation. This is not available from the markets.

6 Many growers have problems, when selling on commission, identifying a wholesaler whom they can trust to ensure maximum possible returns.

7 75% of the growers questioned envisaged the wholesale markets continuing to decline. However if growers were to send a better grade of produce to the wholesale markets, the prices made would be higher and the role of the wholesaler improved.

8 The development of a certain degree of 'branding' by growers has created 'brand loyalty' on the part of the retailers who recognise quality standards. As growers tend to use one or two particular wholesalers on a market, this attracts retailers to those wholesalers, who will then purchase the remainder of their daily requirements. It would therefore be useful for wholesalers to investigate retailers' preferences as regards growers' brands and then perhaps be more selective of the produce taken for sale. This might also stimulate growers whose standards are lacking to take positive action to improve the situation, (with improved grading and packaging), through fear of losing an important point of sale.

9 Wholesalers net margins are in many cases less than 1% of the selling price, therefore a drop in sales can quickly lead to financial difficulty - so it can be concluded that those wholesalers thriving and expanding must be operating an efficient business.

10 Many companies are facing liquidation as a result of falling sales and increased rents, rates and service charges, not compensated for by increased revenue - produce prices rising more slowly.

11 Technological investment, (eg cool chain distribution), demanded by the multiples is expensive and only the larger companies can afford it and therefore exploit the market selling to the multiples. Sales to multiple outlets from wholesalers are significant but can be accounted for by a few large companies operating businesses outside the wholesale markets. The traditional outlet to greengrocers has declined as a result of the greengrocers going out of business.

12 Growers are gaining more control of market prices as a result of improved storage technology and of improved communications which means growers can choose to which market they send their goods.

13 Collective forms of organisation of growers make it difficult for wholesalers to negotiate on equal terms.

14 Wholesalers in the majority of markets do not have a means of/or take the advantage of collectively discussing specific problems.

15 Commission rates to the wholesalers are low, overall

throughput is static and there is a reluctance by many to accept firm price business.

16 The survey showed that up to 40% of the produce available on the markets was class II.

17 Wholesale markets are required as a supply source by the independent sector. The development of firm price business, would help secure class I produce from suppliers, and assisted by forward planning by the independent retailer waste could be minimised. Forward planning would also save the retailer time at the market.

18 Over half of the retailers questioned were experiencing an increase in their fruit and vegetable trade, attributable to improved presentation and store image. However the number of independent greengrocers has declined considerably - a situation which is plateauing.

19 Demand for fresh fruit and vegetables is static despite promotion for consumers to improve their diets. A generic campaign on the part of all concerned could help expand the market.

20 Buyer behaviour has altered with the move to 'one stop' shopping and consumers demanding good quality for which they are prepared to pay. Pick your own and farm gate sales have also increased, significantly affecting sales of

some produce, for example strawberries.

21 The majority of retailers regularly used several wholesalers in one market for their supplies, therefore there is scope for the wholesalers to assure total loyalty from a retailer by means of services offered and reliability. (Exceptions here where a wholesaler specialises in one area of produce so it is necessary for a retailer to go elsewhere to complete the range).

22 Many retailers/caterers purchasing from the markets cannot satisfy their demand for class 1 produce and have to make up with class II, consequently having knock on effects with the consumer shopping at the greengrocer when confronted with poor quality goods.

23 Distribution via the multiple retailers involves high investment operations, working around the clock to satisfy store orders with daily deliveries from suppliers to central depots. Although gross margins at retail level are similar through multiple and independent retailer, the costs of the multiple are significantly less, allowing a higher margin of profit. At the same time the services supplied, including a wide range of consistent quality produce, under the same roof as packaged grocery goods, along side car parking facilities, are superior to those available at the greengrocers.

24 One point of contention, however, is that although

distribution costs per pound are less via the multiple's depot, the price paid by the consumer is generally higher - is this additional profit to the retailer justified by the enhanced service and reliable quality? Research by a major multiple retailer has shown that at least 50% of consumers are not content to purchase their fruit and vegetable supplies alongside their packaged groceries - a fact the multiples are trying to rectify and one which leaves the greengrocers a market to exploit.

25 The traditional distribution channel via the market is not marketing oriented. Wholesalers take it for granted that growers will bring their produce to the market and retailers/caterers will come to the market and buy. Some wholesalers have developed stronger links and play a significant role in determining what they accept to sell, updating their operations and providing services to their customers - taking a positive role in the fate of their businesses which are generally efficient.

Overall however, the wholesalers (wholesale markets) operate in an information vacuum, are relatively labour intensive, with excess capacity, insufficient top quality produce and wholesalers can be left selling produce off below market prices - a relatively inefficient operation compared with the multiple operation. Unless radical changes are implemented the wholesalers' situation is unlikely to improve.

7. RECOMMENDATIONS

The objectives of both channels of fresh produce distribution, via wholesale market and independent retailer, and via multiple retailer, are to satisfy the needs of the consumer by influencing the time, place and form utilities of fresh fruit and vegetables.

Multiple retailers demonstrate how their 'power', resulting from their higher return to the grower, secures consistent volumes of top quality produce, delivered to planned schedules, under specified conditions as regards atmosphere and packaging. The average marketing costs for the produce sold via the retail multiple are less, despite the enhanced services provided during distribution and higher prices paid to the grower. At this point it should be noted the 'power' of the retailer is not such that the multiple retailer can lead in pricing. Both grower and retailer monitor the wholesale market prices as a base for their price setting.

The study has identified that wholesalers at the markets are largely operating in an information vacuum regarding volume of supplies, quality of supplies and market demand. The margin received for their services, identified on page 68d, is also very small - less than 1% of turnover, and the markets are operating below capacity.

As the structure of the industry stands, with a small number of large producers and retailers, and a large number of smaller

producers and retailers dispersed throughout the UK there is a need for regional centres to aid in produce distribution of all qualities from grower to retailer. These centres also need to provide a facility for the distribution of imported produce to the smaller independent retailers. In value terms the multiple retailers account for 40% of fresh fruit and vegetable sales (AGB), leaving 60% being supplied through independent outlets largely sourced from the wholesale markets as a necessary link between many growers and retailers - the facility they currently provided, but not as efficiently as the multiple operation as regards service, quality and information.

In the light of this study the following recommendations can be made:-

1. Reduction of Overheads and Improvement of Service

Markets should be set up on out of town sites, reducing rent and rates. They should be smaller purpose built complexes with the necessary facilities for specialised storage, sorting and packing - a set up similar to a retail multiple's depot. These overheads would be carried over the same or increasing volumes of produce, therefore unit costs can be reduced and the wholesale margin increased to allow for investment in promotions etc.

2. Increase Knowledge of the Market Place

By streamlining operations, and a professional approach growers

would show a greater confidence that their produce would achieve a good price. Long standing relationships i.e. resulting in improved channel communications could be established and a computor network set up between all markets, monitoring continuously regional supplies and demands - with information from both grower, wholesaler and forecasts from retailers. This would allow much quicker response by the wholesalers and the transfer of any surpluses to markets where that produce is in demand by retailers and vice versa. Wholesalers would then be able to specialise their services - for example by providing a grading/packing service for growers unable to afford the facilities themselves, who in the past would mass pack produce unprotected, resulting in damage during distribution and therefore reducing quality. This facility would also allow specific packing for retailers if required.

3. Improve Quality of Supply

With an increase of confidence in the wholesaler by the grower, the wholesaler could be more discerning about the fruit and vegetables he will accept for sale and consequently improve his standards and what he can offer to retailers/caterers using the market.

4. Forward Planning

With an improved information system and operating complex, weekly ordering, rather than daily visits to the market by retailers/ caterers, would allow the wholesalers to plan stock movements thus reducing wastage and unecessary stock holding, whilst maintaining consistent supplies of what the market place demands. Daily

delivery runs could also be established - a move away from the early morning haggling.

A system operating along the lines of these recommendations would put the independent sector on an equal footing as regards quality and reliability of supply, leaving the multiple retailer with the advantage of offering an extensive range of food and non food items and the independent retailer with the advantage of a personal service.

APPENDIX 1

TABLE(i)HOUSEHOLD FOOD CONSUMPTION (oz per person per week)

	Year 1981	Year 1982	Year 1983	Year 1984	Year 1985
Fresh green vegetables	11.98	11.24	10.78	10.83	9.78
Other fresh vegetables	11.83	11.68	15.71	15.26	15.70
Frozen vegetables	4.88	5.25	4.92	5.21	5.97
Canned vegetables	9.35	9.33	9.37	9.10	9.80
Other vegetable products	2.78	2.68	3.08	2.63	2.71
Citrus fruit	4.97	4.42	4.79	4.55	4.08
Bananas	3.12	2.94	2.86	2.91	2.81
Apples	7.28	7.02	7.08	6.84	6.93
All other fresh fruit	4.60	4.38	4.91	4.70	4.71
Canned fruit	2.61	2.65	2.42	2.27	2.21

SOURCE: National Food Survey MAFF

TABLE(ii) DOMESTIC FRESH VEGETABLE CONSUMPTION 1978/86

(1978 = 100)	78	79	80	81	82	83	84	85	86
Potatoes	100	98	93	95	90	90	90	93	88
Green vegetables	100	91	92	89	83	80	81	72	83
Other vegetables	100	98	100	100	99	99	97	100	106
All vegetables (excl potatoes)	100	90	96	95	92	90	89	86	95

SOURCE: National Food Survey

cont'd

TABLE (iii) DOMESTIC FRESH FRUIT CONSUMPTION 1978/86

(1978 = 100)	78	79	80	81	82	83	84	85	86
Oranges	100	107	110	104	92	96	92	82	106
Bananas	100	97	104	105	99	97	98	94	103
Apples	100	113	113	104	100	101	97	99	103
Other fruit	100	109	127	124	116	131	125	138	132
All fruit	100	108	115	110	103	108	105	102	112

SOURCE: National Food Survey

Appendix 1a Volume and value of vegetables and fruit marketed in the UK (home produced).

Vegetables: Output Marketed in the UK Crop Years ('000 tonnes)

	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Cucumbers	46.9	51.9	51.0	54.8	50.0	55.2	50.6	51.8	56.6	57.9
Carrots	487.0	400.3	710.6	553.0	532.6	469.8	443.9	575.5	468.1	490.1
Onions	178.9	139.8	242.0	214.9	230.3	231.2	160.5	210.5	164.8	178.9
Brussels	152.3	118.3	218.7	192.8	205.2	208.4	138.3	186.1	141.6	156.1
Cabbage	515.6	445.2	625.1	437.3	495.7	526.2	420.4	531.6	479.3	546.8
Cauliflower	252.8	182.2	310.1	258.9	297.9	331.8	281.8	311.6	272.8	341.2
Peas (shelled weight for processing)	254.5	169.3	254.2	198.3	224.3	209.5	260.8	226.3	182.6	238.4

Vegetables: Value of Output Marketed in the UK in Calendar Years (£'000)

	75	76	77	78	79	80	81	82	83	84
Cucumbers	9,560	13,540	13,229	13,661	14,976	19,105	12,753	16,457	21,345	21,379
Carrots	25,002	29,706	31,975	27,337	34,011	33,301	41,671	39,222	52,600	57,015
Onions	23,875	33,201	25,723	20,188	32,512	32,050	36,021	30,305	40,048	45,191
Brussels	20,498	24,528	29,600	26,965	30,139	32,816	30,087	33,514	33,342	33,735
Cabbage	35,892	38,005	57,962	33,191	47,100	42,949	51,800	54,877	69,972	99,588
Cauliflower	26,831	22,946	34,150	36,461	36,087	55,543	58,923	54,206	52,634	60,005
Peas (green for processing)	24,881	19,257	29,838	24,585	30,825	33,685	43,921	43,603	35,399	49,421
TOTAL IN OPEN	251,658	264,197	320,923	279,666	388,884	342,419	384,906	386,769	446,389	514,630

Source: MAFF

Domestic Output Marketed in the United Kingdom During Crop Years ('000 tonnes)

Value of Domestic Output Marketed in the United Kingdom During Crop Years (£'000)

(i)	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Cox's	126.0	106.0	51.6	102.4	121.0	84.5	72.8	119.3	100.4	96.3
Total Dessert	229.2	195.0	132.5	192.6	198.2	159.5	145.6	194.4	169.5	168.6
Bramley's	105.5	114.3	115.7	142.8	119.1	136.8	61.6	121.6	103.8	139.8
Total Cooking	127.6	131.0	131.9	164.1	135.4	152.7	77.6	134.7	115.7	151.2
Conference	18.9	40.8	26.9	19.3	48.9	30.0	38.6	30.7	40.1	36.8
Total Pears	26.2	56.9	35.6	25.7	60.1	38.1	45.4	38.1	48.8	43.1
Victoria	4.0	7.1	9.6	10.3	11.5	8.9	3.8	8.8	12.8	10.2
Total Plums	15.7	28.6	33.8	32.2	34.9	31.6	12.2	28.8	28.4	27.3
Strawberries	44.1	35.1	42.0	53.0	52.8	42.2	48.3	43.3	51.0	55.6
Total Soft Fruit	97.2	79.3	78.5	102.4	106.4	92.9	98.9	92.9	112.6	105.9

(ii)	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Cox's	22,314	22,108	18,173	19,318	23,381	23,589	33,714	34,624	41,386	Not Available
Total Dessert	36,053	35,137	39,134	35,220	34,018	39,754	55,121	49,369	62,095	-
Bramley's	10,156	15,265	20,057	14,121	13,374	21,631	23,124	23,287	29,856	-
Total Cooking	12,409	16,884	23,160	16,528	14,827	23,794	26,611	25,489	31,803	-
Conference	3,480	6,858	7,101	4,092	8,401	6,438	13,394	8,814	11,864	-
Total Pears	4,837	9,480	9,420	5,286	10,383	8,434	15,818	10,860	14,659	-
Victoria	909	1,341	2,249	2,106	2,074	2,486	1,598	2,424	3,954	3,220
Total Plums	3,141	4,394	6,726	5,393	5,174	7,969	4,547	6,229	7,630	7,207
Strawberries	19,249	21,851	28,199	39,882	40,676	32,724	43,524	48,479	56,208	59,978
Total Soft Fruit	32,648	37,465	48,327	71,316	74,443	61,919	75,761	84,023	99,252	99,932
Total Fruit	93,555	109,815	130,798	141,470	145,236	152,652	183,550	188,546	222,593	-

Source: MAFF

Appendix 1b Total Cropped Area in the UK

Total Cropped Area in the UK (Hectares)

	75	76	77	78	79	80	81	82	83	84	85
Cox's	11,116	11,006	10,618	10,258	10,194	9,591	8,963	8,791	8,476	8,350	8,319
Bramley's	10,062	9,989	9,942	9,929	9,850	9,525	8,775	8,684	8,395	6,159	6,133
Conference Pears	3,514	3,411	3,380	3,310	3,295	3,232	3,198	3,009	2,934	2,925	2,931
Total Orchard Fruit	52,434	50,775	48,953	47,070	46,546	44,441	41,277	38,797	37,112	35,987	-
Strawberries	6,931	6,930	6,571	6,955	7,852	7,920	7,668	7,418	7,228	6,132	5,975
Total Soft Fruit	17,250	16,416	15,791	16,642	18,290	18,940	18,514	17,705	17,131	16,863	-

Source: MAFF

UK Vegetable Production by Cropped Area (000 hectares)

Open	1980	1981	1982	1983	1984 (p)
Beetroot	2.9	2.7	2.7	2.4	2.9
Carrots	13.7	14.4	13.9	13.1	14.1
Parsnips	2.5	2.6	2.6	2.4	2.5
Turnips/swedes	4.5	3.2	4.1	3.7	4.2
Onions	8.4	9.5	8.4	8.0	8.3
Brussel sprouts	14.8	12.9	13.1	11.7	11.9
Cabbage	20.7	20.4	20.6	19.6	20.8
Cauliflower	16.4	17.1	16.6	16.0	16.6
Beans	12.5	11.0	12.2	10.8	11.9
Peas	57.1	58.5	54.2	45.8	48.0
Asparagus	0.3	0.4	0.4	0.4	0.4
Celery	1.1	1.0	1.0	1.0	0.9
Leeks	1.7	1.9	1.9	2.1	2.1
Lettuce	5.8	5.5	6.0	6.4	6.6
Rhubarb	1.2	1.1	1.0	0.8	0.8
Watercress	0.1	0.1	0.1	-	-
Others	25.7	25.6	24.1	28.2	24.2
Total Open*	189.7	188.2	183.1	175.9	176.6
Protected					
Tomatoes	0.9	0.8	0.7	0.7	0.7
Cucumber	0.2	0.2	0.2	0.2	0.2
Lettuce	1.4	1.3	1.6	1.6	1.6
Mushrooms	0.4	0.4	0.4	0.5	0.5
Others	0.3	0.4	0.4	0.4	0.4
Total Protected	3.2	3.1	3.3	3.4	3.4
Total Vegetables	192.9	191.3	186.4	179.3	180.0

Note: (p) provisional
* total excludes any areas used solely for seed growing

Source: MAFF

The main crops produced were carrots, onions, cabbage, cauliflower and brussel sprouts, which altogether accounted for 62% of total crops grown.

Appendix 1c Volume and value of imports into the UK

(a) Imports into the UK of Fresh Vegetables ('000 tonnes)

	75	76	77	78	79	80	81	82	83	84
Cucumbers	26.0	24.7	25.3	26.4	29.0	32.0	33.6	39.7	40.4	48.1
Onions	148.7	178.8	180.0	179.1	186.4	195.0	198.9	176.9	197.9	210.2
Cauliflowers	24.7	16.6	20.3	14.6	19.1	26.0	31.2	49.2	40.3	50.9
Cabbage	14.9	7.9	29.2	16.5	42.6	28.1	26.9	51.3	30.2	39.7
Brussels	-	0.5	0.8	0.3	0.1	-	3.4	3.1	3.0	2.7
Carrots/turnips	24.2	27.2	28.4	21.0	34.9	29.6	43.7	74.9	34.7	46.8
TOTAL VOLUME	518.8	513.9	515.4	542.5	588.4	649.9	695.3	763.5	719.2	811.1

(b) Imports into the UK of Fresh Vegetables (£'000)

	75	76	77	78	79	80	81	82	83	84
Cucumbers	8,555	9.362	10,308	12,463	14,828	17,337	13,198	17,984	22,583	23,512
Onions	15,040	29,571	23,820	16,987	22,522	29,813	29,538	17,511	21,898	37,743
Cauliflowers	1,905	2,041	4,085	3,066	5,681	5,910	7,460	14,184	9,657	15,876
Cabbage	1,288	1,640	5,434	1,560	7,308	2,793	4,358	9,677	5,211	9,292
Brussels	-	171	310	60	65	-	1,299	1,140	1,175	1,103
Carrots/ turnips	4,145	3,973	7,860	4,789	7,550	8,069	12,105	18,027	8,596	12,134
TOTAL VALUE	137,796	176,492	194,998	197,523	224,002	264,488	278,651	294,919	310,900	391,799

Source: MAFF

Fresh Fruit Imports into the UK

(Value £'000)

	75	76	77	78	79	80	81	82	83	84
Apples	69,578	75,500	94,248	99,879	93,026	101,168	109,673	131,574	127,403	129,515
Pears	10,852	9,848	14,288	14,645	13,897	18,970	23,227	23,392	29,208	25,795
Strawberries	1,639	1,649	2,706	4,702	6,174	8,311	8,644	10,152	11,991	13,437
Plums	4,176	5,303	4,956	5,914	6,574	9,292	9,295	11,381	14,291	12,292
TOTAL VALUE (including cherries, citrus, bananas, melons, peaches, grapes, exotics)	244,391	274,805	327,536	374,957	394,798	545,930	484,873	539,732	601,401	623,166

Source: MAFF

(Volume '000 tonnes)

	75	76	77	78	79	80	81	82	83	84
Apples	329.3	381.4	338.9	343.7	372.2	373.7	423.3	399.4	405.6	401.0
Pears	50.6	47.9	48.5	45.3	44.9	59.7	77.5	63.8	78.5	66.1
Strawberries	1.8	1.3	2.0	4.1	5.5	6.9	7.8	7.5	9.0	10.2
Plums	13.2	20.5	11.4	14.5	14.8	20.6	20.8	21.0	27.4	20.5
TOTAL VOLUME	1422.9	1501.1	1395.0	1483.6	1502.7	1635.2	1712.4	1641.8	1696.5	1706.3

Source: MAFF

Appendix 1d Exports of UK Fruit and Vegetables

	1980		1981		1982		1983		1984	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Apples	12.8	2,812	18.8	3,267	14.5	4,347	20.6	4,500	20.1	6,572
Grapes	1.4	1,358	0.6	960	0.7	1,154	0.3	1,492	0.4	2,166
Pears	2.0	694	1.6	734	1.2	612	1.6	754	1.2	520
Plums	0.5	230	0.3	193	0.6	399	0.6	373	0.4	296
Cherries	0.1	68	0.3	320	—	40	—	39	0.1	62
Strawberries	0.1	84	0.2	116	0.1	173	0.1	101	0.1	129
Tomatoes	5.2	3,454	4.1	2,506	7.1	4,021	7.1	4,382	6.8	4,378
Onions	10.9	1,794	6.3	1,066	9.3	1,282	9.5	1,271	13.5	2,955
Cauliflowers	1.4	331	2.1	554	0.6	149	0.9	202	0.6	126
Cabbage	0.3	45	1.5	249	0.1	24	0.1	27	0.2	69
Brussels sprouts	4.5	1,152	6.8	1,435	0.5	143	0.6	173	0.3	110
Lettuce and endives	0.1	91	0.1	89	0.3	238	0.2	157	0.5	261
Peas	0.9	215	0.6	214	0.6	199	0.5	168	0.4	120
Beans	0.1	45	0.2	83	0.1	165	0.9	181	0.7	207
Carrots and turnips	1.5	261	9.0	1,005	1.5	302	1.2	228	1.6	279
Cucumbers	0.2	95	0.2	119	0.2	120	0.5	356	0.4	269
Mushrooms, truffles	0.1	149	—	106	—	101	—	104	0.1	78
Sweet peppers	0.1	80	0.2	93	0.5	282	0.4	308	0.4	297
Celery	0.6	164	0.8	227	1.5	566	0.8	403	1.0	572

Source: Customs and Excise.

Appendix 2

Commission rates operating similar services to the UK ones

The following commission rates were recently found to be operative:-

LOCATION	COMMISSION RATE	
Great Britain	5-8%	on Imported Produce
	7.5-12.5%	on Home Grown Produce
Germany	8-12%	Home Grown Fruit
	6-10%	Imported Vegetables
	8-10.5%	Imported Fruit
New South Wales	10%	
New Zealand	10%	
Queensland	11.05%	
South Africa	12%	on Fruit
	10%	on Vegetables
Sweden	8%	
Victoria	10-15%	
U.S.A.	10-15%	
Cyprus (Nicosia)	13-17%	
Spain	8-10%	

Source: Davies, 1985

Appendix 3 Price Elasticities of demand for fruit and vegetables

	Food codes (a)	Estimated price elasticity (b)	Significant seasonal and annual shifts in demand (c)	Proportion of variation in monthly average of purchases explained: by the price elasticity (d)	Proportion of variation in monthly average of purchases explained: by the price elasticity and any significant seasonal or annual shifts in demand
VEGETABLES:					
Potatoes, excluding potato products	156–161	−0·11 (0·05)	S & A	0·10	0·76
Cabbages, fresh	162	−0.08 (0.11)	S & A	0·01	0·59
Cauliflower, fresh	164	−2·19 (0·22)	S	0·61	0·79
Leafy salads, fresh	167	−0·85 (0·25)	S & [A]	0·18	0·93
Peas, fresh (g)	168	−2·84 (0·56)	[S] & [A]	0·74	0·92
Beans, fresh (h)	169	−1·34 (0·22)	S & A	0·66	0·95
Brassicas	162, 163, 164, 171	−0·52 (0·11)	S & A	0·30	0·75
Carrots, fresh	172	−0·35 (0·08)	S	0·25	0·89
Turnips and swedes, fresh	173	−0·60 (0·21)	S	0·12	0·93
Other root vegetables, fresh	174	−0·49 (0·17)	S	0·12	0·87
Onions, shallots	175	−0·48 (0·07)	A	0·44	0·53
Cucumbers, fresh	176	−0·40 (0·16)	S	0·10	0·94
Mushrooms, fresh	177	−0·27 (0·33)	S & A	0·01	0·70
Tomatoes, fresh	178	−0·27 (0·10)	S	0·11	0·92
Miscellaneous fresh vegetables	183	−0·49 (0·25)	S & A	0·07	0·77
Tomatoes, canned and bottled	184	−0·27 (0·09)	S	0·15	0·59
Canned peas	185	−0·75 (0·46)	[S] & A	0·05	0·51
Canned beans	188	−0·29 (0·33)	[S] & A	0·01	0·45
Canned vegetables, other than pulses, potatoes or tomatoes	191	−1·14 (0·27)	S & A	0·25	0·68
Canned vegetables excluding potatoes and tomatoes (e)	185, 188, 191	−0·90 (0·35)	S & A	0·11	0·44
Dried pulses, other than air-dried	192	−1·35 (0·29)	[S] & A	0·28	0·56
Vegetable juices	196	−1·43 (0·20)	A	0·43	0·51
Chips, excluding frozen	197	−1·21 (0·29)	S & A	0·24	0·74
Instant potato	198	−1·30 (0·24)			0·36
Canned potato	199	−2·01 (0·74)		0·12	0·35
Crisps and other potato products, not frozen	200	−0·36 (0·35)	S & A	0·02	0·81
Other vegetable products	202	−0·56 (0·31)	S & A	0·06	0·73
Frozen peas	203	−0·75 (0·42)	S & A	0·05	0·44
Frozen beans	204	−1·74 (0·36)	S & A	0·31	0·74
Frozen chips and other frozen convenience potato products	205	−1·04 (0·31)	S & A	0·18	0·82
All frozen vegetables and frozen vegetable products, not specified elsewhere	208	−1·11 (0·35)	S & [A]	0·16	0·60
Frozen vegetables, excluding potatoes (e)	203, 204, 208	−0·86 (0·25)	S & A	0·18	0·73
All frozen vegetables	203, 204, 205, 208	−1·05 (0·20)	S & A	0·20	0·74
FRUIT:					
Oranges fresh (e)	210	−1·26 (0·20)	S & A	0·43	0·95
Othe citrus fruit, fresh	214	−0·76 (0·35)	S & [A]	0·08	0·91
All citrus fruit, fresh	210, 214	−1·09 (0·26)	S & A	0·25	0·94
Apples, fresh (e)	217	−0·17 (0·09)	S & A	0·06	0·73
Pears, fresh (e)	218	−1·10 (0·34)	S & [A]	0·16	0·76
Stone fruit, fresh (h)	221	−2·10 (0·17)	S & A	0·89	0·98
Grapes, fresh	222	−1·65 (0·28)	S & [A]	0·38	0·92
Soft fruit, fresh, other than grapes (g)	227	−4·45 ·0·40	S & A	0·93	0·99
Bananas, fresh	228	−0·62 (0·17)	S	0·19	0·66
Other fresh fruit (i)	231	−1·09 (0·30)	S & A	0·25	0·90
Canned peaches, pears and pineapples	233	−1·13 (0·34)	S & A	0·17	0·66
Other canned and bottled fruit	236	−0·64 (0·51)	[S] & A	0·03	0·40
All canned and bottled fruit	233,236	−0·70 (0·41)	S & A	0·05	0·62
Dried fruit and fruit products	240	−0·00 (0·35)	S & [A]	0·00	0·89
Nuts and nut products	245	−0·43 (0·26)	S	0·04	0·88
Fruit juices	248	−0·09 (0·29)	S & A	0·21	0·91

Source: Household Food Survey, 1984

Appendix 4 SURVEY DESIGN

Sampling theory is concerned with the study of the relationships existing between a population and the samples drawn from it. Through the process of statistical inference, certain conclusions can be drawn about a population from a study of samples taken from it. Statistical sampling theory, based on the mathematics of probability, is particularly valuable in this study for hypothesis testing; identifying associations between the size, turnover, method of sale and quality of certain items of produce at the wholesale markets. It involves the use of tests of significance which are important in the theory of decisions, for example in determining whether the differences noted between two samples are the result of a chance variation or whether they are actually significant.

A number of stages or cycles of stages can be distinguished for the design of a survey, (Oppenheim,1966). The following were followed in this study:-

1. Deciding the aims of the study and the hypotheses to be investigated.

The wholesale markets are in a state of decline and the multiple retailers are expanding their share of the fresh fruit and vegetable trade, via an alternative channel of distribution, being sourced directly from the growers. The aims of the study are to identify and assess changes in the broad environment of the fruit and vegetable markets and to

identify how the wholesalers are adapting to change. In the light of this, to assess the efficiency and effectiveness of the distribution channels for fresh fruit and vegetables - with particular reference to the traditional wholesale markets and direct sales from grower to retail multiple. Also to analyse the particular effects of changing technology on storage and distribution and how it has affected the wholesale function. Then to develop the implications for future developments and improvements in the wholesale function in the U.K..

2. Reviewing the relevant literature; discussions with informants and interested bodies.
From this stage key factors affecting the wholesale markets were identified. These were (at the markets) volume of turnover, quality of produce, method of sale (firm price or commission) annd level of service provided by the wholesaler. Further issues beyond the control of the wholesalers were the increase in sales direct from grower to retailer, a decline in the number of independent greengrocers and a static overall market demand.

3. Designing the survey and making the hypotheses specific to the situation.
From the survey it was necessary to be able to generate more detail about the structure of the distribution channels for fresh produce- getting information from those involved - growers, wholesalers and retailers. Also to

establish whether any statistical associations exist between the variables identified in 2.

4. Designing / adapting the necessary research methods and techniques; pilot work and revision of research instruments.

Postal questionnaires were adopted as being the most cost effective way of collecting the required information over such a widespread population. The main disadvantage of this method being non-response which would lead to the possibility of bias as invariably the returns will not be representative of the original sample drawn. This problem cannot be overcome entirely, but can be partly prevented by sending out reminders.

The questionnaires (Appendix 4 i,ii,iii) were designed with both "open" and "closed" questions - the "closed" questions chiefly relating to the company details, structure and specified variables; the "open" questions being used to establish qualitative data about changes in fresh produce distribution.

A pilot survey was conducted on a small number of respondents. From this it was considered that the questionnaires provided the information required and the main survey commenced.

5. The sampling process.

Before the sample survey was undertaken it was important to define the populations to be sampled - growers, wholesalers and retailers. There are five criteria which are useful in evaluating sample frames,(Yates,1953).

(a) Adequacy. This means that the sample frame should cover the population to be surveyed and that it should do this adequately related to the purpose of the survey.

(b) Completeness. If the sampling frame does not include all those units of a population that should be included, the missing units will not have the opportunity of being selected and the resultant sample will be biased to this extent.

(c) No duplication. With some frames it is possible for a unit to be entered more than once. If there is multiple entry, as with some firms listed in telephone directories and where the sampling frame is the directory, some weighting system may have to be applied to avoid bias.

(d) Accuracy. Many sampling lists contain 'non-existent' units owing to the dynamic nature of these populations.

(e) Convenience. This refers both to the accessibility of the list and to the suitability of its arrangement for the purposes of sampling.

The National Federation of Fruit and Potato Trades Handbook was used for the population of wholesalers - representing, by value, eighty per cent of British Wholesalers. The Directory of Agricultural Horticultural and Fishery Co-operatives in the United Kingdom (1985), the Ross Trade Directory (1985) and telephone directories were used for the populations of growers and retailers respectively.

Random sampling results in every sampling unit in a finite population having an equal chance of being selected in the sample, avoiding bias. The main difficulty of random sampling is that there are very few complete lists of a population which are really satisfactory.

Stratified random sampling was used dividing the population into groups with similar attributes. The probability of selection of a retailer or wholesaler being weighted by the number of branches. (Where multiple retailers were selected, only one questionnaire was sent to avoid repetition of the same answers). The growers were divided into independent or co-operative farmers.

In each stratum the population is more nearly homogenous than in the total population and this contributes to the accuracy of the sampling process.

The sample size was 300 for each population, restricted by limited finances. This represents about 11% of

wholesalers, about 10% of growers and about 2% of retailers. However in terms of value of turnover the percentage of the total population was much higher, it represents 35% of wholesale turnover, about 23% of retail turnover and about 18% of the respective growers.

6. The field-work stage: data collection and returns.

7. Processing the data.

The questionnaire questions were coded (a stage which in retrospect should have been carried out with the design of the questionnaires), and the statistical package MINITAB used to analyse them. Minitab is an interactive statistical package particularly suited to relatively inexperienced computer users, although its range of facilities likens it to programs such as SPSSX, SAS, STATPAK, ROWOPS etc.

The Minitab package consists of a worksheet of columnns and rows and a collection of about 150 commands which operate on the data stored in the worksheet. Although most worksheet operations are on columns, single values ('stored constants') and matrices can also be dealt with.

The results are summarised in Appendix 4a,b and c. Regression analysis and tests of significance were used to establish the existence of associations and their degree of significance.

Marketing Margin Analysis

The second part of the survey was to establish a measure of efficiency between the two channels of distribution identified. Marketing margin analysis was the method used, (linking structure and performance) - dicussed in chapter 3 and the mechanics of the calculations are shown in Appendix 5. For this specific information was required from each stage of distribution regarding costs, selling prices and purchase prices. Exhibit 2 is the table designed for the collection of this information.

Purposive sampling methods were used at this stage - choosing a sample which is 'representative' with respect to the characteristics of the population. Channels of distribution being identified whereby the grower supplies both wholesaler and multiple retailer with a similar standard of produce and this is then followed through to the consumer. Several growers, wholesalers and retailers on returning their questionnaires, expressed an interest to provide further assistance with any research. They were contacted and a 'representative' sample selected.

Error

However attempts are made to control variables a host of possible sources of error are left unaccounted for, such as:-

faults in the design of the survey

sampling errors

errors due to non-response

bias due to questionnaire design and question wording

unreliabity of techniques used

respondent unreliability, ignorance, misunderstanding, reticence or bias

bias in coding and recording the responses

errors in processing and statistical analysis

faulty interpretation of results.

Exhibit 2 Table for marketing margin data collection.

DETERMINATION OF MARKETING MARGINS
(All information will remain confidential and be used anonymously)

RETAIL STAGE
(Approximations are satisfactory providing figs. are relative to each other)

Type of retailer? (multiple, ind. greengrocer)

Type of produce (British)	APPLES Class I (Cox)	PEARS Class I (Conference)	CARROTS Class I English	CUCUMBERS Class 1 English
Percentage of produce lost through waste	%	%	%	%
Percentage of produce sold as a By-product (eg apples for juice)	%	%	%	%
Value per lb of produce sold for By-product	p/lb	p/lb	p/lb	p/lb
Selling price to consumer/lb OCTOBER 1985	p/lb	p/lb	p/lb	p/lb
Costs / lb:-				
eg Overhead costs ie:- (rent, labour, power)	p/lb	p/lb	p/lb	p/lb
Transport	p/lb	p/lb	p/lb	p/lb
Storage	p/lb	p/lb	p/lb	p/lb
Packing	p/lb	p/lb	p/lb	p/lb
Others:-(state)	p/lb	p/lb	p/lb	p/lb
Purchase price from w'saler/ Grower* OCTOBER 1985	p/lb	p/lb	p/lb	p/lb
Type of wholesaler? (Primary/Secondary*)				

Appendix 4i

QUESTIONNAIRE TO IDENTIFY CHANGES WHICH HAVE OCCURRED WITHIN THE FRUIT AND VEGETABLE WHOLESALE TRADE FROM THE PERSPECTIVE OF THE GROWER.
(The following have been selected for analysis:- CARROTS, CAULIFLOWER, WINTER CABBAGE, APPLES (Cox and Bramley), PEARS (Conference) and STRAWBERRIES.)

1.(a) What type of fruit and vegetables do you grow?

	DO YOU GROW THIS FRUIT/VEG.	TOTAL VOLUME (lbs)	VARIETY (please put approx. volume in brackets)
CARROTS	YES/NO		
CAULIFLOWER	Y/N		
WINTER CABBAGE	Y/N		
APPLES	Y/N		
PEARS	Y/N		
STRAWBERRIES	Y/N		

(b) What is your major output? _____

(c) What is the acreage of your farm? _____

2. Do you sort and grade your own produce on your farm? YES/NO

If you have answered YES please answer 2(a).
If you have answered NO please answer 2(b).

2(a) If yes is the produce graded IN THE FIELD / IN A PACKHOUSE (delete)

2(b) If no is the produce graded elsewhere? YES/NO
If no go to question 4.

If yes where is the produce graded?

3. If your produce is graded what proportion of the listed fruit and vegetables are sold in the following classes?

CARROTS

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
ClassI							
ClassII							
ClassIII							

AULIFLOWERS

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
lass I							
lassII							
lassIII							

INTER CABBAGE

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
lass I							
lassII							
lassIII							

PLES

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
ass I							
assII							
assIII							

NT'D

PEARS

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
lassI							
lassII							
lassIII							

TRAWBERRIES

	% 0-10	% 11-20	% 21-30	% 31-40	% 41-60	% 61-80	% 81-100
lass I							
lassII							
lassIII							

.(a) Are you a member of a grower co-operative for any of the listed fruit and vegetables?

CARROTS	YES/NO
CAULIFLOWER	YES/NO
WINTER CABBAGE	YES/NO
APPLES	YES/NO
PEARS	YES/NO
STRAWBERRIES	YES/NO

If you have answered no proceed to question 4(b).

If yes what are the advantages of co-operative membership?

ADVANTAGES	RANK ORDER OF IMPORTANCE (where 1 is most important)
Financial	
Access to information	
Access to facilities	
Product 'branding'	
Marketing	
Others, please state and give ranking.	

NT'D

4(c) If you do not belong to a grower co-operative, why not? (please indicate)

There are no cost benefits

There is not a suitable co-operative

Others, please state.

5. To whom do you sell your 2 main fruit or vegetable crops and in approximately what proportions, now and 5 years ago?

(N=now; 5yr=5years ago)

Table (a), Main Crop. (please state)_____

	% OF TOTAL OUTPUT		METHOD OF SALE %				QUALITY OF PRODUCE %					
			firm/commission price				cl.I		cl.II		cl.III	
	N	5yr	N	5yr	N	5yr	N	5yr	N	5yr	N	5yr
g. 'sale mkt.	50	70	50	30	50	70	30	45	70	55	0	0
Grower-o-operative												
Grading/Pking ompany												
nolesale arket												
etail ultiples												
dependent tailers												
nsumer via O/Farm shop												
ocessor												
ner_____ lease state)												

Table b, second crop (please state)_____

	% OF TOTAL OUTPUT		METHOD OF SALE %				QUALITY OF PRODUCE %					
			firm/commission price				cl.I		cl.II		cl.III	
	N	5yr	N	5yr	N	5yr	N	5yr	N	5yr	N	5yr
Grower-o-operative												
Grading/Pking ompany												
nolesale arket												
etail ultiples												
ndependent etailers												
onsumer via YO/Farm shop												
rocessor												
tner_____ please state)												

. Are gross margins higher when selling directly to the retailer rather than to the wholesaler? YES/NO/THE SAME

If you have answered yes, could you please indicate how much higher the margins are?

5% 10% 15% 20% 25% 30% 35% 40% (please circle)

) When selling through a wholesaler do you prefer fixed price or commission sales?

ADVANTAGES

COMMISSION SALES	FIRM PRICE SALES

(please list)

7. Do you or your co-operative store any produce to release onto the market when prices are at a premium? YES/NO

If yes what facilities do you have or have access to?(eg atmospherically controlled storage)

. If your produce goes to a wholesale market:-
Please tick or state which one(s).

Covent Garden	Leeds
Spitalfields	Birmingham
Bristol	Manchester
Glasgow	Sheffield
Nottingham	Cardiff

OTHER(S),please state....

'or your 2 main crops, which method(s) of distribution do you se? (Indicate by ticking respective boxes)

	MAIN CROP	2nd CROP
i) Do you use one wholesaler in a particular market on a regular basis?		
ii) Do you use several wholesale markets in a particular market on a regular basis?		
iii) Do you use several wholesalers in different markets on a regular basis?		
iv) Do you at any time send your produce to the market where you expect to get the best price, regardless of the distance?		

ther? please state._____

Could you give an indication of average distribution costs incurred, for your 2 main crops?
(pence /pound/mile)

Main crop cost _____

Second crop cost _____

0. Do you have access to any source of information regarding daily market prices? YES/NO

If no go to question 10(c).

(a) If yes what source of information do you use?

(b) Has the level of information available changed your method of distribution? YES/NO
If yes, how?

(c) If you have answered no, how do you ensure a fair price for your crop?

1. What changes have affected the distribution of fresh fruit and egetables in the past 5 years?

- technological changes
- information availability
- wholesaling changes
- retailing changes
- others Please comment.....

2. How do you view the future and why?

(b) How would you like to see the distribution system change within the next 5 years?

(c) Will the future importance of the wholesaler

INCREASE/DECREASE/REMAIN THE SAME ?

ank you for your co-operation. All information received will remain trictly confidential.

Appendix 4ii

QUESTIONNAIRE TO IDENTIFY CHANGES WHICH HAVE OCCURRED WITHIN THE FRUIT AND VEGETABLE WHOLESALE TRADE FROM THE PERSPECTIVE OF THE WHOLESALER.

1. Indicate the % of the listed products that you handle?

	Relative Proportions (%)
FRUIT	_____
VEGETABLES	_____
FLOWERS	_____
GROCERIES	_____
other - please state	_____

2. What proportion of your fruit sales are:-

APPLES .... Cox's...	classI	_____%
	classII	_____%
Bramley...	classI	_____%
	classII	_____%
STRAWBERRIES.....	classI	_____%
	classII	_____%
CONFERENCE PEARS....	class I	_____%
	classII	_____%

3. What proportion of vegetable sales are....

CARROTS.....	class I	_____%
	classII	_____%
WINTER CABBAGE.....	class I	_____%
	classII	_____%
CAULIFLOWER.....	class I	_____%
	classII	_____%

4. What do you see as your principal function? please tick

Wholesale broker physically handling produce ____
Import/Wholesale broker not physically handling produce ____
Import/Wholesale broker physically handling produce ____
Wholesale broker physically handling produce incorporating a local delivery service ____
OTHER please state.....

5. What is the number of employees of your company? Please circle

Under 10 11-25 26-50 51-100 101-150 151-200 200+

b) Please indicate your group/company annual turnover _____

6. How long has the business been established? ____years.

Is there more than one establishment? YES/NO
How many? _____

7. From whom do you buy your stocks and by what method of payment now and 5 years ago?

(N=now; 5=5 years ago)

	QUANTITY BOUGHT PER YEAR		SUPPLIER (grower, w'saler other.)		METHOD OF PAYMENT % firm		% /commission	
	N	5	N	5	N	5	N	5
APPLES Cox's								
Bramley's								
PEARS Conference								
STRAWBERRIES								
CARROTS								
CAULIFLOWER								
WINTER CABBAGE								

7(b) Could you please indicate the percentage of total sales which you sell into the following retail channels, now, 5 years ago and 5 years from now?

RETAIL CHANNEL	% now	%5yrs ago	%5yrs from now
Mkt stall holder			
Greengrocer			
Independent supermarket			
Supermarket multiple			
Other(s) please state.			

8. Are you happy with the general move toward firm price sales? YES/NO

Why?

9. Do you provide any services to your suppliers? eg. transport, storage, controlled atmosphere storage, ripening facilities.

10. Do you provide any services to your customers? eg. preparing/delivering orders.

11. What changes have affected the distribution of fresh fruit and vegetables in the past 5 years? eg.wholesaling, technological, retailing changes.

12. How do you view the future of the wholesale markets?

Will the volume of EXOTIC fruit and vegetables you sell
INCREASE / DECREASE / REMAIN THE SAME

What volume of your total sales do exotic fruit and vegetables currently account for? (%)

0 less than 5% 5-10 10-15 15-25 25-30 30-50 50-80 80+

Will the volume of produce reaching the wholesale markets
INCREASE/ DECREASE / REMAIN THE SAME? delete

Will the proportion of class I produce reaching the markets
INCREASE/ DECREASE / REMAIN THE SAME? delete

Will the proportion of produce acquired on a firm price basis INCREASE/ DECREASE / REMAIN THE SAME? delete

Have you any further comments?

ank you for your co-operation. All information received will main strictly confidential.

QUESTIONNAIRE TO IDENTIFY CHANGES WHICH HAVE OCCURRED WITHIN THE FRUIT AND VEGETABLE WHOLESALE TRADE FROM THE PERSPECTIVE OF THE RETAILER.

1. What type of retailer are you? (please tick)

Independent greengrocer with one retail outlet ___
Independent greengrocer with several outlets ___
Independent grocer with one retail outlet ___
Independent grocer with several outlets ___
Co-operative grocer ___
Voluntary grocery stores (eg.Mace) ___
Chain supermarket ___
Multiple supermarket ___
Other, please specify_____ ___

2. Approximately what percentage volume of total sales are....

	%	%	%	%	%	%	%	%	%	%
FRESH FRUIT	10	20	30	40	50	60	70	80	90	100
FRESH VEG.	10	20	30	40	50	60	70	80	90	100
OTHER state FOOD _____	10	20	30	40	50	60	70	80	90	100
NON-FOOD _____	10	20	30	40	50	60	70	80	90	100

3. Has the volume of fresh fruit and vegetables sold through your store changed within the past five years?

Increased / Decreased / Remained constant (delete)

By approximately how much has it changed _____%

If there has been a change in the volume sold, what would you consider has brought about the change?

4. From where do you buy the following produce?

	% CARROT	% CAULIFL.	% WINTER CABBAG.	% APPLES COX	BRAML	% CONFERENC PEARS	% STRAWBERRIES
W'SALE MKT. name of....							
IN SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___
OFF SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___
GROWER							
IN SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___
OUT SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___
OTHER state.....							
IN SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___
OUT SEASON							
class I	___	___	___	___	___	___	___
class II	___	___	___	___	___	___	___

5. If you buy fresh produce from a wholesaler, do you?
(please tick)

	CARROT	CAULIF.	WINTER CABBAG.	APPLES COX	BRAMLEY	CONFEREN. PEARS	STRAWBERRIES
Use one w'saler in one mkt. on a regular basis	___	___	___	___	___	___	___
Use several w'salers in one mkt on a regular basis	___	___	___	___	___	___	___
Use several w'salers in different mkts	___	___	___	___	___	___	___
Other state.....							

6. Does the wholesaler provide any particular service for you? YES / NO.

If yes, what type of service ? eg. order preparation, delivery.

7. What changes would you identify that have affected the distribution of fresh fruit and vegetables in the past 5 years?

eg. Technological changes, wholesaling changes, retailing changes.

COMMENTS PLEASE.....

8. How do you perceive the future importance of the fruit and vegetable wholesaler?

INCREASE / DECREASE / REMAIN THE SAME (delete)

Have you any further comments on the role of the fresh produce wholesaler?

Thank you for your co-operation. All information received will remain strictly confidential.

APPENDIX 4a

RESULTS FROM THE GROWERS' QUESTIONNAIRE

1. DISTRIBUTION OF FRESH PRODUCE BY CHANNEL FROM THE GROWERS

(% volume)

	1981	1986
Apples		
Grower Co-operative	3.5	3.5
Grading/Packing Co.	0	0
Wholesale Market	25.3	26.7
Multiple Retailer	41.6	42.1
Independent Retailer	8.3	8.3
Processor(canning/freezing/ further processing)	21.3	19.3
Consumer	0	0
Pears		
Grower Co-operative	0	6.5
Grading/Packing Co.	0	0
Wholesale Market	76.0	60.3
Multiple Retailer	11.2	21.4
Independent Retailer	4.6	4.6
Processor(canning/freezing further processing)	8.1	6.2
Consumer	0	1.0
Cauliflower		
Grower Co-operative	0	0
Grading/packing Co.	3.1	3.1
Wholesale Market	79.8	38.5
Multiple Retailer	6.3	10.4
Independent Retailer	0	0
Processor(canning/freezing further processing)	10.2	47.1
Consumer	0.6	0.9
Cabbage		
Grower Co-operative	0	0
Grading/Packing Co.	0	35.7
Wholesale Market	94.3	28.6
Multiple Retailer	0	22.9
Independent Retailer	0	0
Processor(salads/further processing)	0	7.1
Consumer	5.7	5.7

continued....

2. AVERAGE PERCENTAGE OF CROP GRADED CLASS I

	0-10	11-20	21-30	31-40	41-60	61-80	81-100
Apples					X		
Pears						X	
Strawberries							X
Carrots						X	
Cauliflower							X
Winter Cabbage							X

3. LOCATION OF GRADING PRODUCE

	ON THE FARM		
	IN FIELD %	IN PACKHOUSE %	% CO-OPERATIVE PACKHOUSE
Apples & Pears		50	50
Strawberries	80	20	
Cauliflower/ Cabbage	100		
Carrots	70	20	10

4.a CO-OPERATIVE MEMBERSHIP

YES	61%
NO	39%

N.B. Co-operative members were primarily fruit growers.

4.b REASONS GIVEN FOR NON-MEMBERSHIP

No cost benefits
No suitable co-operative
A large proportion of crop sold to processors.

4.c RANKING OF ADVANTAGES OF CO-OPERATIVE MEMBERSHIP

1. Marketing
2. Financial
3. Product branding
4. Access to facilities and technical support
5. Access to information
6. Control of the market.

continued....

5. METHOD OF SALE

5.a. % Firm Price Sales 54
% Commission Sales 46

N.B. A higher proportion of vegetables and perishable produce e.g. strawberries are sold on commission through the wholesale markets.

COMMENTS: ON FIRM PRICE
Price assured
Better control of market and thus price, stopping flooding of the market.

ON COMMISSION
Whole range of quality of produce sold
Too much of wholesaler saying one price and later paying less.

5.b PROPORTION OF GROWERS STORING PRODUCE TO RELEASE ONTO THE MARKET WHEN PRICES ARE AT A PREMIUM - 75%

N.B. It would appear that given the opportunity the majority of growers will hold produce to release at a later date. However not all produce is storable e.g. strawberries, and in other cases e.g. cabbage, the cost of storage is not justified. Also out of season produce can often be imported at prices less than the cost of storing home grown produce.

5.c BENEFIT OF SELLING DIRECTLY TO THE MULTIPLES

A higher profit margin is recorded

% higher	% of growers
5	0
10	40
15	40
20	10
25	0
30	0
35	10

continued....

6. PATRONAGE OF THE WHOLESALE MARKETS

% of growers using one wholesaler in one market on a regular basis	19
% of growers using several wholesalers in different markets on a regular basis	43
% sending produce to the market where it will get the best price regardless of the distance	38

7.a INFORMATION SOURCES USED BY GROWERS

Co-operative Marketing Agent
The Kingdom - Prestel Service (Apples and Pears)
Daily contact with the wholesalers
A grower's own buying agent
Comprehensive analysis of daily sales.

7.b EFFECT OF INCREASED INFORMATION

More firm price sales
Can choose to which markets produce is sent allowing them to follow the best prices
Allows better timing of marketing each vartiety in any season.

Where little information is available, the grower relies on mutual trust to ensure the wholesaler secures a fair price.

continued....

APPENDIX 4a (continued)

8. CHANGES THAT HAVE AFFECTED THE DISTRIBUTION OF FRESH FRUIT AND VEGETABLES IN THE PAST 5 YEARS

1. An increase in the multiple share of the retail trade and the effect of their purchasing pattern.
2. Wholesale Markets are declining, selling lower quality produce.
3. Improved qulity and grading standards by growers.
4. No increase in public consumption, despite increase in total output.
5. The public are more aware of produce quality.
6. There is a trend for growers to joing marketing co-operatives.
7. There is a decreasing number of outlets - it could become a buyers' market and the level of prices would work against the grower.
8. Commission rates are too high - the prices obtained are lowere than firm sales to multiple outlets.
9. Wholesale Markets have become completely outdated due to a lack of a central information system
10. There is an increased demand from processors for cauliflowers for freezing and cabbage for coleslaw.
11. It is increasingly difficult to find reliable wholesalers.

9. COMMENTS ON THE FUTURE OF FRESH PRODUCE DISTRIBUTION

a. Total volume of produce sales unlikely to increase only for top quality with lower qualities going for processing or being unsaleable.
b. The outlook for incomes is stable.
c. There is a need to improve packaging.
d. A need for some retailers to improve their handling of produce.
e. More effort should be made by retailers and wholesalers to sell.
f. Wholesalers should buy home produced produce on a firm basis as they do their imported produce.
g. If growers sent a better grade of produce to the wholesale markets the prices made would be higher and the role of the wholesaler improved.
h. It would be nice to see the power taken away from the multiple giants and back to wholesale markets a little more as it used to be.

10. THE FUTRE OF THE WHOLESALE MARKETS
(% of growers responding)

In decline	75%
Will remain the same	25%

These results are discussed and concluded in chapters 6 & 7.

APPENDIX 4b

RESULTS OF THE QUESTIONNAIRE TO WHOLESALERS

1. The Wholesaler's Principal Functions

	no.	%
a) Wholesale broker physically handling the produce	24	18.6
b) Import/wholesale broker not physically handling produce	15	11.7
c) Import/wholesale broker physically handling produce	27	20.9
d) Wholesale broker physically handling produce including delivery service	63	48.8
	129	100

2. SIZE - indicated by turnover (£ million)

	no.	%
non-response to question	23	18
0 - 5.5m	67	51
5.5 - 10.5m	27	20
10.5 - 20.5m	5	4
20.5 - 30.5m	0	0
30.5 - 40.5m	3	4
40.5 - 60.5m	0	0
60.5 - 70.5m	2	2
70.5 - 90.5m	0	0
90.5 - 100.5m	2	2
	129	100

NB. It can be identified at this stage that about 80% of value of turnover is represented by 20% of the companies.

Total annual turnover represented by companies sampled = £700 million.

Total UK fruit and vegetable sales through wholesale markets = £2000 million.

3. SIZE - indicated by the number of employees

	no.	%
non-response to question	10	7.7
under 10	43	33.3
11 - 25	36	28.5
26 - 50	17	13.2
51 - 100	6	4.4
101 - 150	11	8.8
151 - 200	0	0
200+	6	4.4
	129	100

Correlation coefficient (r) of turnover and number of employees = 0.739
rxr = 0.546 ie 55% of the variation in the number of employees can be predicted through knowledge of the company turnover.

4. SOURCE OF THE WHOLESALERS' PRODUCE (1986)
(% by value through each channel)

(%)	GROWER	CO-OPERATIVE	W'SALER	BROKER
APPLES	44.4	22.2	27.8	5.6
PEARS	29.4	17.6	41.2	11.8
STRAWBERRIES	66.7	6.7	13.3	13.3
CARROTS	65.2	0	21.7	13.1
CABBAGE	76.2	0	14.3	9.5
CAULIFLOWER	79	0	10.5	10.5

5 Distribution of fresh produce by channel from wholesaler to retail outlet (value £ million per annum)

	1981	(%)	1986	(%)	1991*	(%)
Market Stall	58.460	(10)	55.742	(9.2)	41.720	(7.4)
Greengrocer	80.253	(13.7)	71.693	(11.8)	67.380	(11.9)
Ind.Supermkt	20.591	(3.5)	18.161	(3.0)	19.064	(3.4)
Multiple Supmkt	310.01	(53.0)	364.45	(60.3)	381.92	(67.4)
2ndry W'saler	113.98	(19.5)	82.310	(13.6)	55.010	(9.7)
Caterer	1.104	(0.2)	11.624	(1.9)	1.702	(0.3)

*forecast

6. Tables indicating the proportion of class I produce distributed (6a) and the proportion of produce traded on a firm price basis (6b) - 1986

6a	Total Value £ million of produce's sales	Total Value £ million class I	% of sales that are class I
APPLES	33.628	26.079	77.6
PEARS	39.581	31.049	78.4
STRAWBS	15.696	15.521	98.9
CARROTS	19.378	13.936	71.9
CABBAGE	7.334	5.394	73.6
CAULI.	7.708	4.724	61.3

6b

(£million)	Total Value of produce's sales	1981 value firm price sales	1986 value firm price sales	1986 % traded firm
APPLES	33.628	5.439	8.123	24.2
PEARS	39.581	4.404	5.408	13.7
STRAWBS.	15.696	1.152	1.147	7.3
CARROTS	19.378	6.718	8.803	45.4
CABBAGE	7.334	0.844	1.006	13.7
CAULI.	7.708	1.128	1.217	15.8

7. Feelings about the move toward firm price trading.

	% of W'salers responding
a) What move?	21.7
b) In Favour	42.3
c) Against	36.0

8. Comments about firm price trading

In Favour

Firm price trading leads to more stable business arrangements and market stability.

It creates a stronger sales/price attitude.

It secures higher margins.

It assures quality.

Against

The market is governed by supply and demand therefore a flexibility in price structure is necessary.

Goods agreed and paid for, invariably are not up to the standard paid for.

Firm pricing increases wastage and squeezes margins.

Fruit and vegetables are overproduced so supply and demand need to be balanced.

9. Changes in the environment identified by the wholesalers

Increase in direct supply from grower to retailer

Increase in the number of multiple supermarket outlets

Stronger producer groups

Increase in technical demands

Decrease in the importance of the wholesale markets

Increased competition within the markets

Increased efficiency in the markets

Reduced quality of fruit and vegetables available on the markets

Increased overheads

Farm shop trade unrestricted

Increased foreign goods

Increased quality demanded

Increased volume of exotics sold at retail

The market service has improved

Expansion of self service fruit and vegetable shops

Increased popularity of convenience foods having an adverse effect on the demand for fruit and vegetables

A four day working week might improve matters

10. When questioned about the volume of produce reaching the markets -

5.6% said the quantity would increase
58.3% said the quantity would decrease
36.1% said the quantity would remain the same

11. When questined about the quantity of classI produce reaching the markets -

36.1% said the quantity would increase
50.0% said the quantity would decrease
13.9% said the quantity would remain the same

12. When questioned about the quantity of firm price sales to the markets -

51.4% said the quantity would increase
17.1% said the quantity would decrease
31.5% said the quantity would remain the same

13. When questioned about the volume of exotics being sold through the markets -

72.7% said the volume would increase
18.2% said the volume would decrease
9.1% said the volume would remain the same

14. The proportion of fruit and vegetable sales represented by exotics -

% of sales exotics represent	% of Wholesalers
0	20.2
<5	41.3
5 - 10	22.2
15 - 25	6.1
30 - 50	6.1
50 - 80	4.1

15. When questioned about the provision of a service to their customers -

71.4% provide services for customers
70.3% provide services to their suppliers
61.5% provide services to both their suppliers and customers

15a The services provided for their customers (ie retailers)

Local delivery

Stock rotation

Breaking bulk

Credit service

Storage

Temperature controlled delivery

Ripening facilities

Supply goods within 24 hours of harvest

Matching supply with demand

15b The services provided for their suppliers

Transport

Storage/Controlled atmosphere storage

Ripening facilities

Refrigeration

Packing/sorting

Marketing structure

Packing with their own logo

Advice to grower on grading, packing and the varieties to grow

16 Significant critical values of the linear coefficient r, at the 5% (*) and 1% (**) levels of significance.

Class 1 Cox Apples

	a	b	c	d	e
a W'sale function					
b Turnover			**	**	
c Value of sales				**	**
d Value Class I sales					**
e Value firm price sales					

Class I Conference Pears

	a	b	c	d	e
a W'sale function					
b Turnover			**	**	**
c Value of sales				**	**
d Value Class I sales					**
e Value firm price sales					

Class I Strawberries

	a	b	c	d	e
a W'sale function					
b Turnover			**	**	**
c Value of sales				**	**
d Value of Class I sales					**
e Value firm price sales					

Cont'd

Class I English Carrots

	a	b	c	d	e
a W'sale function					
b Turnover					
d Value of sales				**	**
d Value Class I sales					**
e Value firm price sales					

Class I English Cauliflower

	a	b	c	d	e
a W'sale function					
b Turnover					
c Value of sales				**	**
d Value Class I sales					
e Value firm price sales					

There are no significant values for Class I English Cabbages.

There is a positive correlation, at the 5 % level of significance, between company turnover and provision of a service to their suppliers.

There is no significant correlation between turnover and provision of services by the wholesaler to their customers.

APPENDIX 4c

RESULTS OF THE QUESTIONNAIRE TO RETAILERS

1. The Retail Sample Frame

	% of sample
Indep. Greengrocer, 1 outlet	33
Indep. Greengrocer-several outlets	35
Indep. Grocer, 1 outlet	14
Indep. Grocer-several outlets	10
Chain Supermarket (eg.Mace, Spar)	4
Multiple Retailer	2
Farm Shop	2

2. Percentage of retailer's sales accounted for by fresh fruit and vegetables.

	% of sales						
(% of respondents)	10	20	30	40	50	60	70
FRUIT SALES	20	6	8	26	32	4	4
VEG. SALES	18	6	10	34	28	4	0
OTHER FOOD	18	8	4	6	4	6	6
NON FOOD	22	10	4	6	0	0	0

3. The level of fruit and vegetable sales volume

% of retailers experiencing an increase in sales	54%
% of retailers experiencing a decrease in sales	21%
% of retailers with a static friut & veg sales vol.	25%

Explanations for sales increases:-

Improved presentation and store image

Improved quality of produce

Consumer interest in fresh produce as a result of the healthy eating publicity

Promotional activity

Going over to self-service shops

Produce is no longer seasonal

Hard work - early starts to secure the quality and variety of produce from the wholesale market

4. The Source of Retailers' produce

Class I Cox Apples

	% purchased from source cl I	cl II	% of retailers using supply source	% W'salers goods that are class I
Prim.W'saler	83	100	85	77
Sec.W'saler	6		5	
Grower	11		10	

Class I Bramley Apples

Prim.W'saler	83	100	86	76
Sec.W'saler	6		5	
Grower	11		9	

Cont'd

	% purchased from source cl I	cl II	% of retailers using supply source	% W'salers goods that are class I
Class I Conference Pears				
Prim.W'saler	84	100	87	93
Sec.W'saler	6		5	
Grower	10		8	
Class I English Strawberries				
Prim.W'saler}			69	
Sec.W'saler } All sales class I			26	
Grower }			5	
Class I English Carrots				
Prim.W'saler	78	94	80	73
Sec.W'saler	7		4	
Grower	15		16	
Packer		6		
Class I English Cauliflower				
Prim.W'saler	68	89	72	74
Sec.W'saler	5		4	
Grower	27	11	24	
Class I English Cabbage				
Prim.W'saler	67	100	72	80
Sec.W'saler	5		4	
Grower	28		24	

5. The wholesale markets used by the retailers questioned

	% of retailers using the market
Barnsley	5
Birmingham	5
Blackburn	2
Bristol	3
New Covent Garden	5
Coventry	3
Gateshead	3
Henley	1
Hull	5
Leeds	3
Leicester	3
Manchester	3
Nottingham	3
Sheffield	48
Spitalfields	6
Southampton	2

	100

6. The loyalty of the retailers

Retailers using one wholesaler in one market on a regular basis	17%
Retailers using several wholesalers in one market on a regular basis	68%
Retailers using several wholesalers in different markets on a regular basis	15%

7. Provision of services by the wholesalers

% of retailers receiving services from their wholesalers	48%
% of retailers not receiving a service from their wholesalers	52%

<u>The types of service provided</u>

Delivery	59%
Preparation of orders	26%
Personal service/loading	11%
Advice,advertising material	4%

8. Issues identified by the wholesalers during the past five years

a Growth of the multiple supermarket - receiving supplies direct from grower :. the markets are by-passed; also offering a wide range of well presented, top quality produce to satisfy consumer demand.

b Technological changes - cool chain distribution, extending shelf-life and improving quality.

c Quality - improved grading and packaging standards, also prepacks.

d Self-service in retail outlets.

e Changes in buyer behaviour - move to 'one stop' shopping

f Consumers are looking for class I produce and are prepared to pay the price.

g A wider variety of produce is now available.

h The trade of the independent retailer has been eroded by the increase in multiple retail sales - a concentration of business at retail level.

i One company (an independent greengrocer with several outlets and a weekly turnover in excess of 100 tons) commenced trading in 1966 when 95 % of produce was purchased from Covent Garden Market and 5% from local growers. Now 92% of supplies from local growers (cl I) and 8% from the wholesale market.

j Fewer wholesalers are providing a delivery service.

k Wholesale markets are inefficient - the retailers have had to adapt to change - they should.

l Increased consumption of convenience foods.

m The cost of transport in rural areas puts the prices up.

n The multiples have priority over the quality produce from the growers and the wholesalers get what is left so independent retailers have difficulty matching the quality.

o The majority of retailers now sell some fruit and vegetables.

9. The Retailers perception of the future importance of the wholesale markets.

	% of retailers stating
The importance of the w'salers will increase	22
The importance of the w'salers will decrease	54
The importance of the w'salers will remain the same	24

NB Many of those stating an increase in the importance of the wholesalers refer to those remaining wholesalers willing to offer a better service and quality produce.

10. Further comments from the retailers.

a PYO and farm gate sales have affected sales of many items of fresh fruit and vegetables in particularb strawberies.

b The wholesalers are out of touch and losing ground with outdated methods of operation, poor quality and presentation. They are inefficient and not supplying what the consumer demands.

c The prices the wholesalers charge retailers depends on who you are.

d With a few notable exceptions many wholesalers have had 'a head in the sand'attitude to change and the requirements of their customers. Although their importance will decrease the industry will require a thriving wholesale sector for the forseable future.

e Unless the wholesaler is prepared to provide the general requirements of his future customer, for example, prepared vegetables for caterers, prepacking for multiples and giving his customer a first class delivery service with consistent supplies of good quality fruit and vegetables, he is unlikely to survive.

f The wholesalers are fighting a losing battle against multiples dealing directly with importers and even importing on their own behalf.

g UK produce is not as well packaged as imported competition. There is also a need for improved labelling of produce, (eg weight, quality and country of origin).

h Wholesalers and retailers will become more interlinked as part of a chain of distribution. The days of widely ranging market prices and shortages are diminishing as a

result of better handling and communication.

i High rents and rates are forcing many wholesalers out of business, which has knock on effects for the independent retailer.

j An increasing number of freezer shops reduces produce sales from greengrocers.

k There is increased interest in vegetarianism and 'healthy eating'; fresh produce should be an expanding area.

Appendix 5 The Mechanics of Marketing Margin Analysis

" The Methodology Adopted."

In practice most products are handled by several different intermediaries between farm gate and the consumer and wastage and the creation of by-products may occur at several different stages. Losses through wastage at one stage influencing the quantity required at all other stages and it is thus necessary to devise a procedure which ensures these adjustments are made methodically.

The analysis starts with the same product purchased at the same point in time by the consumer at independent and multiple retail outlets and traces this back step by step to the farmer. One sheet (Exhibit 2a)contains all the information relating to a particular stage, the original data being presented in the columns on the left-hand side of each sheet. The mechanisms and procedures for obtaining the appropriate conversion factors are contained in the centre columns of each sheet. For intermediate stages, the selling price at one stage becomes the purchase price of the next stage. The number of sheets used to analyse a marketing channel is equivalent to the number of stages in that particular marketing system, i.e. if there are 3 stages: retailer, wholesaler, farmer, 3 data sheets will be required.

Exhibit 2a Example of marketing margin calculation

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Exhibit 2a		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
.	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		40			x Fn+1	+ 40	
SELLING PRICE NET OF BY PRODUCTS	5					(Bn+1....Bn+n)	- 0	= 40 Sn
ITEMISED COSTS	6							
1	7	+						
2	8	+						
3	9	+						
4	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 6.15		x Fn				= 6.341 Cn
PURCHASE PRICE FROM Stage N-1	15		24	x Fn			24.744	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 24.744 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				8.915 Mn
	18							
	19							

Each sheet refers to stage N: this means the stage being studied on that sheet. Stage N+1 means the stage one closer to the consumer than the current stage and stage N-1 refers to the stage one closer to the farmer than the current stage.

An illustrative example appears, exhibit 2a, showing the mechanics of the calculation. The operation can be summarised using the following formula:-

Mn (net margin) = Sn - Cn - Pn

where Sn = selling price to stage N+1xFn net of byproducts (Fn being the factor adjusting for loss)

Cn = total costs x Fn

Pn = purchase price from stage N-1xFn, net of byproducts.

This procedure is then repeated for each stage in the distribution channel and a summary of the marketing costs and margins can be produced. This will enable comparisons to be drawn between the costs of marketing the same item of produce and also indicate variations in costs for different items of produce.

5.3 THE RESULTS.

The Retail Stage.(exhibit 2a)

Row 1. There are no by-products at this stage, so zeros are entered in columns 2, 3, 4 and 7.

Row 2. The 3 per cent loss per lb is recorded in [illegible]

as 0.03 lb.

Row 3. The total weight of by-products and physical loss (Ln) is recorded in column 3 by adding the quantities recorded in column 3 of rows 1 and 2.

The conversion factor for this stage (Fn) is now calculated, i.e. the lbs of purchased product required to produce 1 lb of the final product. The general formula is shown in column 4 as:

$$Fn+1 \times \frac{1.00}{1.00-Ln}$$

This is a two-stage formula, the conversion factor from the previous stage (Fn+1) is multiplied by the conversion factor for this stage. As this is the first stage Fn+1 = 1.00 (1 lb of the reference product is required to produce 1 lb of the final product).

$\frac{1.00}{1.00-0.03}$ is then calculated and the answer, 1.031, is recorded in column 5 as Fn.

In effect, because of the weight loss, 1.031 lbs of produce needs to be purchased from the wholesaler to obtain 1 lb of produce to sell to the consumer.

Row 4

The retail selling price is recorded in column 2. As this refers to a lb of product sold at the next stage, the appropriate conversion factor is Fn+1 (column 5). In this instance Fn+1 = 1 so 40 pence is also recorded in column 6.

Row 5

In column 6 any by-product values from previous stages (in this case zero) are deducted from the adjusted selling price to give the selling price, net of by-products, of the reference product in column 7.

Rows 7-13

Any itemised money expenditures incurred by the marketing stage are listed in the left-hand margin and their values recorded in column 1 of these rows, the costs being given in as much detail as possible. The conversion factor for each item is Fn (see Row 3) and adjusted costs are recorded in column 7.

Row 14

The total costs of 6.15 pence are recorded in column 1 and multiplied by the conversion factor Fn (1.031) and the adjusted total costs for this stage of 6.341 pence are recorded in column 7.

Row 15

The purchase price from the wholesaler is recorded in column 2 and its adjusted value in column 6.

Row 16

From the adjusted purchase price in Row 15 are deducted the combined values of by-products in this and all previous stages (Bn+Bn+1 ..... +Bn+n) (in this case zero) to give the adjusted purchase price of the equivalent of 1lb of reference product, net of by-products (Pn) recorded

Row 17

The net margin for the retail stage can now be calculated by deducting the adjusted costs (Cn) and the purchase price net of by-products (Pn) from the selling price net of by-products (Sn). The result 8.915 pence is recorded in column 7 as Mn.

Rows 18 and 19

The net margin should cover the remuneration of managerial and personal services by the agent, the costs of financing which he bears, risk taking and profit.

This procedure is then repeated for each stage in the distribution channel and a summary of the marketing costs and margins can then be produced. This will enable comparisons to be drawn between the costs of marketing the same item of produce and also indicate variations in costs for different items of produce.

The results from this survey are summarised in the following pages, Appendix 5a and are discussed in Chapter 6.

Appendix 5a A Summary of the Marketing Margin Calculations and results.

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class 1 COX Apples (cell pack)		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Greengrocer		1	2	3	4	5	6	7
BY PRODUCTS	1		10	x 0.03	= 0.3	x Fn		0.32 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.06 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.064 Fn		
SELLING PRICE TO STAGE N+1	4		40p			x Fn+1 +	40	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 40 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 0.25						0.266
2 Grading	8	+						
3 Storage	9	+ 0.25						0.266
4 Transport	10	+ 1.15		x Fn				1.224
5 Rent, power	11	+ 4.5						4.788
6 Labour	12	+						
7	13	+						
TOTAL COSTS	14	= 6.15		x Fn				= 6.54 Cn
PURCHASE PRICE FROM Stage N-1	15		27.2	x Fn			28.94	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.32	= 28.62p Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				4.48pence Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class I Cox Apples-cell pack STAGE N - Wholesaler		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0				
	3			= 0 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.064 Fn		
SELLING PRICE TO STAGE N+1	4		27.2pence			x Fn+1 +	28.94	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0.32	= 28.62 Sn
ITEMISED COSTS	6							
1 Storage	7	+						
2 Transport	8	+						
3 Rent, power	9	+	1.41					
4 Labour	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 1.41		x Fn				= 1.5 Cn
PURCHASE PRICE FROM Stage N-1	15		24.89	x Fn			26.48	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.32	= 26.16 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				0.96 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class I Cox Apples -cell pack		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		3.56	x 0.075	= 0.267	x Fn		0.316 Bn
PHYSICAL LOSSES	2			+ 0.025				
.	3			= 0.1 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.182 Fn		
SELLING PRICE TO STAGE N+1	4		24.89pence			x Fn+1 +	26.48	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		-0.635	= 25.85 Sn
ITEMISED COSTS	6							
1 Grading	7	+ 2.86						3.38
2 Storage	8	+ 2.15						2.541
3 Transport	9	+ 0.86						1.071
4 Packing	10	+ 3.37		x Fn				3.983
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 9.24		x Fn				= 10.92 Cn
PURCHASE PRICE FROM Stage N-1	15		9.23	x Fn			10.338	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.635	= 9.703 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				5.23 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class 1 Cox Apples-cell pack		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - multiple retailer		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		45pence			x Fn+1 +	45	
SELLING PRICE NET OF BY PRODUCTS	5					(Bn+1....Bn+n)	- 0	= 45 Sn
ITEMISED COSTS	6							
1 Packing	7	+						
2 Grading	8	+						
3 Storage	9	+ 1.46						
4 Transport	10	+		x Fn				
5 Rent, power	11	+ 0.9						
6 Labour	12	+						
7	13	+						
TOTAL COSTS	14	= 2.36		x Fn				= 2.43 Cn
PURCHASE PRICE FROM Stage N-1	15		29.9	x Fn			30.83	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 30.83 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				11.74 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 Cox Apples-cell pack STAGE N - Grower		UNADJUSTED COSTS PER lb (pence)	UNADJUSTED PRICES PER lb (pence)	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS (pence)	CONVERSION FACTORS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS (pence) ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
		1	2	3	4	5	6	7
BY PRODUCTS	1		3.56	x 0.075	= 0.267	x Fn		0.31b Bn
PHYSICAL LOSSES	2			+ 0.025				
	3			= 0.1 Ln	Fn+1. 1.00 / 1-Ln	1.15 Fn		
SELLING PRICE TO STAGE N+1	4		29.9			x Fn+1 +	30.83	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		-0.316	= 30.51 Sn
ITEMISED COSTS	6							
1 Packing-labour+material	7	+ 3.37						
2 Grading+overheads	8	+ 2.86						
3 Storage	9	+ 2.15						
4 Transport	10	+ 0.86		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 9.24		x Fn				= 10.63 Cn
PURCHASE PRICE FROM Stage N-1	15		9.23	x Fn			10.61	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.316	= 10.30 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				9.58 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 Conference Pears		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N- Greengrocer		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		27			x Fn+1 +	27	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 27 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 1.88						
2 Storage	8	+ 0.74						
3 Transport	9	+ 1.1						
4	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 3.72		x Fn				= 3.84 Cn
PURCHASE PRICE FROM Stage N-1	15		20.02	x Fn			20.64	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 20.64 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				2.52 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 Conference Pears		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Wholesale		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
.	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.063 Fn		
SELLING PRICE TO STAGE N+1	4		20.02			x Fn+1 +	20.64	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 20.64 Sn
ITEMISED COSTS	6							
1 Storage	7	+						
2 Transport	8	+ 0.5						
3 Labour, rent, power	9	+						
4	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 0.5		x Fn				= 0.53 Cn
PURCHASE PRICE FROM Stage N-1	15		18.45	x Fn			19.61	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 19.61 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				0.5 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 Conference Pears		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N- Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		2.9	x 0.05	= 0.145	x Fn		0.17 Bn
PHYSICAL LOSSES	2			+ 0.03				
.	3			= 0.08 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.155 Fn		
SELLING PRICE TO STAGE N+1	4		18,45			x Fn+1 +	19.61	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0.17	= 19.44 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 3.37						
2 Grading	8	+ 2.86						
3 Storage	9	+ 1.15						
4 Transport	10	+ 0.86		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 8.24		x Fn				= 9.52 Cn
PURCHASE PRICE FROM Stage N-1	15		6.74	x Fn			7.78	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			-0.17	= 7.61 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				2.31 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 Conference Pears STAGE N -multiple retailer		UNADJUSTED COSTS PER lb 1	UNADJUSTED PRICES PER lb 2	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb 3	UNADJUSTED VALUE OF BY PRODUCTS 4	CONVERSION FACTORS 5	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT UNADJUSTED FOR VALUE OF BY PRODUCTS 6	ADJUSTED FOR VALUE OF BY PRODUCTS 7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.04				
	3			= 0.04 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.042 Fn		
SELLING PRICE TO STAGE N+1	4		34			x Fn+1	+ 34	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 34 Sn
ITEMISED COSTS	6							
1 Packing	7	+)						
2 Grading	8	+	1.36					
3 Storage	9	+						
4 Transport	10	+		x Fn				
5 Rent, labour, power	11	+	1.0					
6	12	+						
7	13	+						
TOTAL COSTS	14	= 2.36		x Fn				= 2.46 Cn
PURCHASE PRICE FROM Stage N-1	15		21.8	x Fn			22.72	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 22.72 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				8.82 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class I Conference Pears		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N- Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		2.9	x 0.05	= 0.145	x Fn		0.158 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.08 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.133 Fn		
SELLING PRICE TO STAGE N+1	4		21.8			x Fn+1 +	22.72	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0.158	= 22.56 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 3.37						
2 Grading	8	+ 2.86						
3 Storage	9	+ 1.15						
4 Transport	10	+ 0.86		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 8.24		x Fn				= 9.34 Cn
PURCHASE PRICE FROM Stage N-1	15		6.74	x Fn			7.64	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.158	= 7.48 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				5.74 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class 1 English Carrots		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N- Greengrocer		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.05				
	3			= 0.05 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.053 Fn		
SELLING PRICE TO STAGE N+1	4		12			x Fn+1 +	12	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 12 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 0.125						
2 Storage	8	+ 0.125						
3 Transport	9	+ 0.5						
4 Rent, power, labour	10	+ 1.0		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 1.75		x Fn				= 1.84 Cn
PURCHASE PRICE FROM Stage N-1	15		8	x Fn			8.42	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 8.42 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				2.18 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Carrots		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N_ Wholesale		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.08				
	3			= 0.08 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.145 Fn		
SELLING PRICE TO STAGE N+1	4		8			x Fn+1 +	8.42	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....bn+n)		- 0	= 8.42 Sn
ITEMISED COSTS	6							
1 Storage	7	+						
2 Transport	8	+ 0.4						
3 Rent, power, labour	9	+						
4	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 0.4		x Fn				= 0.46 Cn
PURCHASE PRICE FROM Stage N-1	15		6.9	x Fn			7.90	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...bn+n)			- 0	= 7.90 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				0.06 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class 1 English Carrots		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.18 Fn		
SELLING PRICE TO STAGE N+1	4		6.9			x Fn+1 +	7.9	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 7.9 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 0.15						
2 Grading	8	+ 1.0						
3 Storage	9	+ 0.125						
4 Transport	10	+ 0.5		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 1.78		x Fn				= 2.09 Cn
PURCHASE PRICE FROM Stage N-1	15			x Fn				
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				5.81 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Carrots		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Multiple retailer		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
	3			= 0.03Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		20			x Fn+1 +	20	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 20 Sn
ITEMISED COSTS	6							
1 Packing	7	+						
2 Grading	8	+						
3 Storage	9	+ 1.36						
4 Transport	10	+		x Fn				
5 Rent,power,labour	11	+ 0.5						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 1.86		x Fn				= 1.92 Cn
PURCHASE PRICE FROM Stage N-1	15		13.2	x Fn.			13.61	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 13.61 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				4.47 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Carrots		UNADJUSTED COSTS PER lb	UNADJUSTED PRICES PER lb	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES lb	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.015				
	3			= 0.015 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.047 Fn		
SELLING PRICE TO STAGE N+1	4		13.2			x Fn+1 +	13.61	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 13.61 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 0.2						
2 Grading	8	+ 0.6						
3 Storage	9	+ 0.5						
4 Transport	10	+ 0.9		x Fn				
5 Rent, power, labour	11	+ 1.2						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 3.4		x Fn				= 3.56 Cn
PURCHASE PRICE FROM Stage N-1	15		4.3	x Fn			4.5	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 4.5 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				5.55 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Cucumbers (for 1b read stick)		UNADJUSTED COSTS PER 1b	UNADJUSTED PRICES PER 1b	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES 1b	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N - Greengrocer		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.03				
.	3			= 0.03 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.031 Fn		
SELLING PRICE TO STAGE N+1	4		44			x Fn+1 +	44	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 44 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 0.25						
2 Storage	8	+ 0.9						
3 Transport	9	+ 1.15						
4 rent, power	10	+ 3.25		x Fn				
5 Labour	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 5.55		x Fn				= 5.72 Cn
PURCHASE PRICE FROM Stage N-1	15		32.4	x Fn			33.4	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 33.4 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				4.88 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Cucumbers (for 1b read stick) STAGE N - wholesaler		UNADJUSTED COSTS PER 1b	UNADJUSTED PRICES PER 1b	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES 1b	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.01				
	3			= 0.01 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.04 Fn		
SELLING PRICE TO STAGE N+1	4		32.4			x Fn+1 +	33.4	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0	= 33.4 Sn
ITEMISED COSTS	6							
1 Storage	7	+						
2 Transport	8	+						
3 Rent	9	+ 1.5						
4 Labour	10	+		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 1.5		x Fn				= 1.56 Cn
PURCHASE PRICE FROM Stage N-1	15		29.6	x Fn			30.78	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 30.78 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				1.06 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Cucumbers (for 1b read stick)		UNADJUSTED COSTS PER 1b	UNADJUSTED PRICES PER 1b	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES 1b	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT	
							UNADJUSTED FOR VALUE OF BY PRODUCTS	ADJUSTED FOR VALUE OF BY PRODUCTS
STAGE N- Grower		1	2	3	4	5	6	7
BY PRODUCTS	1		3.9	x 0.04	= 0.156	x Fn		0.174 Bn
PHYSICAL LOSSES	2			+ 0.025				
	3			= 0.065 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.112 Fn		
SELLING PRICE TO STAGE N+1	4		29.6			x Fn+1 +	30.78	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		0.174 -	= 30.6 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 3.1						
2 Grading	8	+ 2.7						
3 Storage	9	+ 0.8						
4 Transport	10	+ 2.5		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 9.1		x Fn				= 10.12 Cn
PURCHASE PRICE FROM Stage N-1	15		14.88	x Fn			16.55	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.174	= 16.38 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				5.19 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class1 English Cucumber (for 1b read stick) STAGE N -multiple retailer		UNADJUSTED COSTS PER 1b	UNADJUSTED PRICES PER 1b	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES 1b	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS ASSOCIATED WITH 1 1b OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
		1	2	3	4	5	6	7
BY PRODUCTS	1		0	x 0	= 0	x Fn		0 Bn
PHYSICAL LOSSES	2			+ 0.04				
	3			= 0.04 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.042 Fn		
SELLING PRICE TO STAGE N+1	4		52			x Fn+1	+ 52	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....bn+n)		- 0	= 52 Sn
ITEMISED COSTS	6							
1 Packing	7	+						
2 Grading	8	+						
3 Storage	9	+	1.00					
4 Transport	10	+		x Fn				
5 Rent,power	11	+						
6 Labour	12	+	1.00					
7	13	+						
TOTAL COSTS	14	= 2.00		x Fn				= 2.084 Cn
PURCHASE PRICE FROM Stage N-1	15		36	x Fn			37.51	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0	= 37.51 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				12.41 Mn
	18							
	19							

CHANNEL: CONS./RETAIL/ WHOLESALE/FARMER Class I English Cucumbers (for 1b read stick) STAGE N - Grower		UNADJUSTED COSTS PER 1b	UNADJUSTED PRICES PER 1b	WEIGHT OF BY PRODUCTS AND PHYSICAL LOSSES 1b	UNADJUSTED VALUE OF BY PRODUCTS	CONVERSION FACTORS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: UNADJUSTED FOR VALUE OF BY PRODUCTS	COSTS AND MARGINS ASSOCIATED WITH 1 lb OF REFERENCE PRODUCT: ADJUSTED FOR VALUE OF BY PRODUCTS
		1	2	3	4	5	6	7
BY PRODUCTS	1		3.9	x 0.04	= 0.156	x Fn		0.174 Bn
PHYSICAL LOSSES	2			+ 0.025				
.	3			= 0.065 Ln	Fn+1. $\frac{1.00}{1-Ln}$	1.114 Fn		
SELLING PRICE TO STAGE N+1	4		36			x Fn+1 +	37.51	
SELLING PRICE NET OF BY PRODUCTS	5				(Bn+1....Bn+n)		- 0.174	= 37.34 Sn
ITEMISED COSTS	6							
1 Packing	7	+ 3.1						
2 Grading	8	+ 2.7						
3 Storage	9	+ 0.8						
4 Transport	10	+ 2.5		x Fn				
5	11	+						
6	12	+						
7	13	+						
TOTAL COSTS	14	= 9.1		x Fn				= 10.14 Cn
PURCHASE PRICE FROM Stage N-1	15		14.88	x Fn			16.58	
PURCHASE PRICE NET OF BY PRODUCTS	16			(Bn+Bn+1...Bn+n)			- 0.174	= 16.41 Pn
NET MARGIN (FARM GATE PRICE)	17			(Sn-Cn-Pn)				10.79 Mn
	18							
	19							

APPENDIX 6

TABLE 1 NACNE*PROPOSALS

DIETARY COMPONENT	LONG TERM	SHORT TERM
Energy intake	Recommended adjustment of the types of food eaten and an increase in physical exercise so that adult body weight is maintained within the optimal limits of weight for height	
Fat intake (decrease)	30% of total energy (101g/head/day)	34% of total energy (115g/head/day)
Saturated fatty acid intake (decrease)	10% of total energy (33g/head/day)	15% of total energy (50g/head/day)
Polyunsaturated fatty acid intake	No specific recommendations	
Cholesterol intake	No recommendation	
Sucrose intake (decrease)	20kg/head/year	34kg/head/year
Fibre intake (increase)	30g/head/day	25g/head/day
Salt consumption Decrease by:	3g/head/day	1g/head/day
Alcohol intake	4% of total energy	5% of total energy
Protein intake	No recommendation (presently 11% of total energy)	

*NACNE - National Advisory Committee on Nutritional Education

cont'd

TABLE 2 COMA* RECOMMENDATIONS

1. Total fat consumption should be reduced by between 17 and 25%.

2. Saturated fat consumption should be reduced by 25%.

3. Polyunsaturated fatty acids (PUFA) may in certain circumstances be increased by up to 50%.

4. The consumption of fibre-rich carbohydrates such as supplied by bread, cereals, fruit and vegetables was suggested as a way of compensating for the reduced fat intake.

5. The consumption of simple sugars and common salt should not be increased.

*COMA - Committee on Medical Aspects of Food

Appendix 7 List of fruit and vegetables available on Birmingham Wholesale Market. (Along with other available produce)

FRUIT

Apple
Apricot
Arbutus
Avocado
Banana
Babaco
Bilberry, blaeberry and whortleberry
Blackberry and dewberry
Black, red and white currant
Blueberry
Cape gooseberry
Carambola
Cherimoya, custard apple and sour-sop
Cherry
Chinese gooseberry or kiwi
Coconut
Cornel or cornelian cherry
Cranberry
Date
Feijoa or pineapple-guava
Fig
Gooseberry
Grape
Grapefruit, pomelo, ugli, citron etc
Guava
Kumquat
Lemon
Lime
Loquat or Japanese medlar
Lychee, lichee or litchi and rambutan
Mango
Mangosteen
Medlar
Melon
Mulberry
Orange, tangerine, satsuma
Ortanique
Papaya, papa, papaw or pawpaw
Passion fruit or purple granadilla
Peach and nectarine
Pear
Persimmon and Sharon persimmon
Physalis or Cape gooseberry or golden berry
Pineapple
Plum, greengage and damson
Pomegranate
Pomelo
Prickly pear, Indian fig, Barbary fig or tuna
Quince
Rambutan
Raspberry and loganberry
Rhubarb
Sapodilla
Sorb apple, wild service berry and rowan berry
Strawberry
Tamarillo
Ugli Fruit
Water-melon

VEGETABLES

Artichokes
Asparagus
Asparagus Chicory
Asparagus Peas
Aubergine
Beans
Beet Greens
Beetroot
Breadfruit
Broad Beans
Broccoli or Sprouting Broccoli
Brussels Sprouts
Cabbage
Cardoon
Carrots
Cauliflower
Celery and Celeriac
Caltuce, Asparagus Lettuce
Chayote
Chick Peas
Chicory (white, green and red)
Chinese Artichokes
Chinese Leaf
Courgettes
Cucumber
Custard Marrow or Squash
Dandelion Leaves
Earthnuts or Pignuts
Endive
Fennel
Gourds
Ginger
Hamburg Parsley or Parsley Root
Hop Shoots
Jerusalem Artichokes
Kohlrabi or Cabbage-turnip
Lamb's Lettuce or Corn Salad
Land Cress
Laver
Leeks
Lentils
Lettuce and Lettuce Salad
Mange-tout Peas or Sugar Peas
Marsh-Samphire or Glasswort
Mooli
Mushrooms
Mustard and Cress
Nettles
New Zealand Spinach
Okra or Lady's Fingers
Onion, Shallot and Spring Onion
Orache or Mountain Spinach
Parsnips
Peas
Peppers and Chilli - The Capsicums
Plantain
Potatoes
Pumpkin
Purslane
Radicchio
Radish
Red Cabbage
Rocket
Salad Burnet
Salsify and Scorzonera
Seakale
Sorrel
Soya Beans, Mung Beans and Bean Sprouts
Spinach
Spring and Winter Greens
Sweetcorn or Maize
Sweet Potatoes
Swiss Chard and Other Leaf-beets
Tomatoes
Turnips and Swedes
Vegetable Marrow
Vegetable Spaghetti
Watercress
Yams

FISH

Angle or Monkfish
Bass
Bloaters
Bream
Brill
Catfish
Clams
Cockles
Cod
Crab

Crayfish
Crevettes
Cuttlefish
Dab
Dogfish
Eel
Fillets
Flaunder
Garfish
Gurnard
Haddock
Hake
Halibut
Herring
Inkfish
Kippers
Langaustine
Lemon Sole
Lobster
Mackerel
Megrim
Melts
Mullet (grey and red)
Mussels
Oyster
Pilchard
Plaice
Pollack
Prawns
Ray
Roes
Salmon (fresh)
Salmon (smoked)
Scallops
Scampi
Shark
Shrimp
Skate
Snapper
Sole
Sprat
Squid
Stickleback
Trout
Turbot
Whelks
Whiting
Whitebait

POULTRY AND GAME

Chicken
Duck
Eggs
Geese
Grouse
Partridge
Pheasant
Pigeon
Quail
Rabbits
Turkey
Venison

MEAT

Bacon and Hams
Beef and Beef Cuts
Cooked Meats
Lamb and Lamb Cuts
Offal
Pate
Pies
Pork and Pork Cuts

FLOWERS AND PLANTS

Bulbs
Ceramics
Christmas Trees
Dried Flowers
Fertilisers
Florists' Sundries
Flowers
Holly
Mistletoe
Packaging
Peat
Pest Controls
Plants - Flowering and Foliage
Seeds
Seedlings
Shrubs
Silk Flowers
Trees
Tubers

SUNDRIES

Butter
Cash and Carry
Cheese
Confectionery
Cream
Delicatessen
Groceries
Yoghurt

Appendix 8

FRESH FRUIT AND VEGETABLES -
ADVERTISING EXPENDITURE, 1982-85

£'000	1982	1983	1984	Jan-Sept 1985
Apples from France	238	318	498	518
Cape fruit	240	447	373	536
Carmel avocados	83	139	172	45
Mushroom industry	-	588	302	-
Outspan grapefruit	-	-	333	302
Outspan oranges	811	936	396	519
Potato Marketing Board	159	118	241	133
Spania satsumas/oranges	136	102	260	-
Dutch fruit & vegetables	-	-	-	122
Moroccan clementines	138	235	-	-
Apple & Pear Publicity Council	218	-	-	58
Jaffa citrus fruit	328	-	-	307
Total, including others	2,494	3,009	2,689	2,564

SOURCE: Meal

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