MARKET MARGIN INVESTIGATIONS AND PRICE CONTROL OF FRUIT AND VEGETABLES

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ABSTRACT

In an inflationary economy, price control is frequently employed for political and economic reasons. Most market margin investigations of British and Irish fruit and vegetable markets carried out for price control purposes are misleading as certain theoretical and practical problems have not been overcome. The conclusion that prices are, or are not, too high is a value judgement and suitable criteria must be defined. The data used must be appropriate and they must be weighted and analysed according to the criterion used and allowing for differences in type and function of both retailer and wholesaler. Practical difficulties in collecting the necessary data mean that data are frequently incorrect or not available. For similar reasons control of prices or margins is impractical in peacetime.

INTRODUCTION

In an inflationary economy, price control is often imposed for political and economic reasons. The economic reason is to slow down the rate of price increase both directly, by controlling prices, and indirectly, by keeping down index-linked wage rises and by persuading workers that it is not necessary to demand wage increases to keep up with price increases. Politically it is necessary to convince people that a section of the community is not making excessive profits and that an attempt is being made to control inflation. As fruit and vegetables are bought several times a week and account for 14% of British food expenditure (1), their prices are important, both politically and economically.

The price control authority usually investigates prices at three levels: at industry level, at commodity level and, to enforce the price control regulations, at individual shop level. The fruit and vegetable market poses particular problems for each of these investigations. There are daily, weekly, seasonal and annual fluctuations in price. Demand fluctuates with the weather and the availability of substitutes. Supply fluctuates with the weather, with the amount planted and the price in alternative markets.

Most crops are highly perishable so they must be harvested as soon as they mature and must then be sold to the consumer within a few days. Consequently, the market may be oversupplied for a day or two in a period of general scarcity. On any one day, there may be a glut in one market while there is a scarcity in others. The instability is increased where, as in Britain, some retailers attempt to stabilise prices (2), or where the market margin is such that farm-gate demand is inelastic. As a result of these factors, the marketing system which has developed is very flexible, but is difficult to document.

Nearly all the price control studies of the British and Irish markets for fruit and vegetables are done with inadequate knowledge of the market, use inappropriate or incorrect data or have no theoretical basis, so their conclusions are unjustified. In this paper, I will discuss what value judgments, criteria, data and analysis are needed to decide whether or not price control is desirable. Although it is frequently possible to make useful economic judgments using data that are subject to a wide margin of error, they must be the right data for the job and they must be correctly analysed. Next, I will discuss the practical difficulties of obtaining the data, and finally I shall show that the choice of price control methods open to the authorities is limited by the availability of data and by difficulties in defining margins.

Definitions

The margin is the difference between the amount paid by someone when buying and the amount he receives when selling. It is usually expressed as a percentage of the selling price, but it may also be expressed as a sum of money, such as '3p per cauliflower," or as a rate, such as £500 per week in a greengrocery shop.' Margins may refer to one line of produce, to all lines sold by a department or to the turnover of a firm. These are gross margins; the net margin, or profit, is the total gross margin less total costs, and is usually expressed as a percentage of turnover. The mark-up is also the difference between the amount paid by someone when buying and the amount received when selling, but it is expressed as a percentage of the buying price. 100% mark-up is the same as 50% margin. Margins and mark-ups are easily confused.

THEORETICAL CONSIDERATIONS

Weighting

Many studies of fruit and vegetable margins are meaningless because their authors did not appreciate the importance of weighting means. The appropriate method of weighting depends on the criteria used by the price control authority. Typical criteria used are:

a) If firm X's customers pay more for their fruit and vegetables than firm Y's, then firm X is charging too much.

b) If supermarkets' customers pay more than greengrocers' customers, then supermarkets are charging too much.

c) If the average customer would spend more shopping at a supermarket than at a greengrocers' shop, then the supermarket is charging too much. (This implies different weighting to (b)).

d) If certain sectors of the trade have unreasonably high margins, they are charging too much.

e) If certain sectors of the trade are grossly inefficient and incur unnecessarily high costs they are charging too much.

f) If distributors set margins in such a way that they increase the risk to producers or increase price fluctuations to producer and consumer then the policy on margins is wrong. It is frequently argued by growers, for instance, that when wholesale prices are halved there is little change in retail prices, so it is difficult to clear surpluses.

g) If retailers charge margins such that consumers' preferences are not passed on to the grower, then the policy on margins is wrong.

For each of these criteria different data must be collected and they must be combined and analysed in different ways. This is especially important for horticultural products, because of seasonal fluctuations in total supply, seasonal fluctuations in the supply of each vegetable, changes in the product mix and changes in prices and relative prices.

Multi-product investigations

Most investigations cover several products, all greengrocery or all grocery for instance, and this makes interpretation difficult. For instance, two shops may sell the same fruit and vegetables, in the same quantities, and at the same prices and margins, but one may also sell high-margin products, such as flowers or exotic fruit, and so have a higher mean margin for the shop as a whole. These two shops have the same mean margin judged by criterion (c) but not by (a). Again one shop may sell mainly cheap, bulk vegetables at a 25% margin, while another uses bulk vegetables as a loss-leader but charges 25% margin overall. The two shops have the same mean margin for criteria (b) and (d) but not for (a) nor, probably, for (c). Another two shops may sell the same products at the same price and the same margins but one may sell a large volume of low-margin products while the other sells a smaller volume of high-margin products. They have the same mean price for criterion (c) but not for (a). Multiple retailers frequently have shops of each kind mentioned, in which case criterion (a) is particularly difficult to apply.

In addition, shops offer a service with the product; a cabbage bought from a shop which stays open late every night, or which is conveniently located or which has good parking, cannot be equated with the cabbage bought at the other end of town in a supermarket, nor can apples in a plastic bag which may be inspected before being bought in a self-service be compared with the same product weighed out by a greengrocer. As a result, criteria like (b) or (c) may be impossible to apply, as comparable weighted averages cannot be computed, except at shop level.

If margins must be shown to be reasonable (criterion (d)), it is accepted that shops with higher costs may charge higher margins. Shops which have high locational rents, or, because of late opening, high labour costs, or shops with low turnover may reasonably charge high margins. Supermarkets may reasonably charge a low margin on greengrocery, using it as a loss leader. Hypermarkets and large supermarkets are more efficient than small supermarkets and may reasonably charge lower margins. A comparison of two retail chains, each with stores in several of these categories, or a comparison of supermarkets and greengrocers must allow for these differences.

Some retailers charge a constant percentage margin throughout the year, others a higher margin when turnover is low, others a lower margin when prices are high. To get a mean figure for individual shops, for types of shop or for the industry, one must record prices and sales throughout the year and weight accordingly.

Single lines

The fact that margins are high for the product being investigated does not indicate that margins for that crop or for the commodity group as a whole are too high. The optimum pricing pattern and product mix of a firm depends on such factors as the elasticity of demand for a product and the amount of display space available, and these factors may change from week to week. At any one time, the margin on some goods will be high and that on others will be low so the product being investigated may have a high margin in the month of the investigation but a low margin the rest of the year. A crop such as spring cabbage is sold at a time when, because total turnover is low, some retailers charge a high margin on everything to obtain their minimum required income, so the margin on spring cabbage is higher than that on autumn cabbage. Taking the year as a whole and taking all cabbage together, margins may seem low.

Similarly, the optimum purchase of the consumer, whether we talk of the average consumer or the consumers who use one shop, depends on all the products available and their prices, so the best buy overall may be at the shop with the highest price for one commodity.

It is very difficult to examine the margins on one product using criteria relating to customer satisfaction. Criteria such as (f) and (g) which relate to market effects may be used but they should be used with caution (3).

PRACTICAL DIFFICULTIES

The practical difficulties of carrying out price control investigations are those of determining prices at producer, wholesale and retail level and of determining margins of producers, wholesalers and retailers.

Producers' margins

For reasons discussed elsewhere (12) there are serious theoretical and practical difficulties in determining production costs of horticultural producers and it is particularly difficult to obtain their margins. In any case, margins for any one crop would not show whether the producer was making an unreasonable margin for his business as whole. Aggregation of margins would present an impossible task. Generally speaking, fruit and vegetable producers in Britain and Ireland sell in pure competition and cannot influence their selling price. For these reasons price controllers have ignored producers' margins in this sector.

Wholesale prices and margins

The marketing system for fruit and vegetables must be very flexible to deal with fluctuations in supply and demand but, because of this, it is difficult to document. In Britain and Ireland, most fruit and vegetables are sold in a wholesale market, like Covent Garden, by commission agents who sell on behalf of the grower. They may sell to retailers, to wholesalers in the same market, to wholesalers in other markets or to secondary wholesalers. Country wholesalers obtain supplies from local growers and sell them through the wholesale markets. In Ireland and, to a lesser extent, in Britain much of the fruit and vegetables is handled by two or more wholesalers, usually, but not always, performing different wholesaling functions. This double handling is not shown in margins obtained from census data, published accounts or costings. On the other hand, the large supermarkets generally buy direct from growers and importers, so their retail margin includes a large wholesale element, and, as this imposes special problems, their margins will be discussed in a separate section.

The different wholesaling functions should not be confused. For some firms a wholesale margin covers all operations from harvesting to delivering the goods at the shop; for others it may cover two telephone calls. Wholesale margins obtained from published accounts or from census data could refer to either form of wholesaling, though firms that publish accounts are likely to be abnormally big and to be vertically integrated. Attempts to cost the wholesale margins have been unsuccessful as only a very small number of wholesalers have co-operated in Price Commission studies and as these studies do not sufficiently discriminate between different forms of wholesaling (4, 5, 6, 7). The commission charges and handling charges of individual commission wholesalers, importers and panellists are common knowledge in the market and can easily be obtained from the wholesalers, their competitors or their customers, and can usually be related to the services performed. Therefore, the margin of one wholesaler performing a specific function can be calculated. The margins of primary and secondary wholesalers who buy or sell rather than charge commission cannot be identified as easily. Even if they could be, it would not be possible to calculate the wholesale margin because it is not known how many wholesalers handle each item.

Wholesalers' margins depend on the product; the commission on low-value bulky vegetables is higher than that on fruit and the commission charged to a large cooperative or marketing board is lower than that charged to a small farmer. Weighted averages would have to be calculated to determine the mean margin of a wholesaler or the mean margin for a commodity.

Wholesale margins found in these ways exclude costs arising from the dishonesty which must be expected in a trade where large amounts of cash are handled and where accounting cannot always be strict. The Runciman report (7) suggests that wholesalers sometimes tell growers that they received a lower price than in fact they did and keep the difference. They may also sell at a low price to a friendly wholesaler, who can make a profit reselling at the full market price, and who will reciprocate later. A wholesaler may also sell to himself (under British law he should tell his client when he does this), and sell later at a profit. In some markets, porters steal and resell anything left unguarded. Any one act of dishonesty would probably double the margin for the consignment so widespread dishonesty would cause a significant error.

Wholesale margins could be calculated by comparing the price obtained by the producer or importer with the price paid by retailers. In Britain and Ireland, the producer price would only be known by large co-operatives and marketing boards, and, as it would be necessary to relate prices to specific brands and qualities, the exercise would normally be limited to crops like apples and citrus, which are not typical, having lower commission rates and higher unit values than vegetables, for instance. Retailers throughout the country pay different prices and these vary from week to week, so averages would have to be weighted by area, by turnover and over time. Prices paid by retailers would have to be recorded, which, as will be shown below, may not be easy.

Interpretation of wholesale margins is equally difficult; one can compare the charges made by different firms for doing the same job, but one cannot say that the national average wholesale margin is too big, unless one can point to inefficient practices that add to the margin (criterion e).

Retail margins

Retail margins can be obtained by comparing prices at wholesale and retail or by asking retailers for details of margins. If retail and wholesale prices are compared they must be both accurate and comparable, and quantities sold must be known. However, price reporting is not accurate. Prices can vary through a day's trading according to the supply and demand, and a wholesaler may start the day by selling at a high price, then reduce prices as more produce comes on the market, then reduce price drastically to clear his stand before the day's trading finishes. He may give discounts for quantity. Wholesalers in different parts of the market may charge different prices. Prices vary according to size, quality and country of origin. Published prices are based on a non-random sample of perhaps half a dozen wholesalers in each market and the reports may, quite truthfully, quote any of the prices charged in that day, or, for a variety of reasons, quote a false price. As a result a British trade paper frequently quotes a price such as "50-100p" which is useless in calculating margins.

In Ireland the Department of Agriculture and Fisheries quotes a price for a product specified by class, size, origin and, sometimes, producer, and quotes both a model price and a range.

It must be emphasised that 80% of the sales in the wholesale market go to retailers while the rest, particularly the lower quality, goes to caterers. The large supermarket chains and country retailers tend to buy direct from growers. One cannot, therefore, compare the wholesale market price with a countrywide retail price, such as the National Food Survey price (1), as the Price Commission did in the U.K. (6).

Obtaining retail prices is also difficult. Retailers are obliged by law to label certain foods with the price, class, variety and country of origin, but they seldom do this. When they do provide information, it is frequently incorrect or misleading. For this reason, in an Irish study (8) samples of produce were bought over a period, and weighed and graded so that the quality and price could be compared on several dates. This information, when compared with wholesale prices, gave a reasonable indication of margins.

Supermarket margins

Supermarkets are usually quite willing to let a serious researcher know the level of their margins on fruit and vegetables, and it is common knowledge what percentage margin a firm takes. When I have been able to check the accounts, or when independent auditors were employed, these figures have proved reasonably accurate, though a discrepancy arose because retailers ignored V.A.T. in their calculations (9). Generally, though, there is a difference between the margin a firm thinks it gets and the actual margin.

The wastage rate is important to the retailer and to the price controller. If the overall mark-up is to be 33 1/3% (25% margin) then the mark-up must be 57% at 15% waste, 48% at 10% waste, 40% at 5% waste and 35% at 1% waste. Most multiples have a shrinkage of less than 2.5 %, but a quarter have over 6.4% in Britain, and half over 5 % in Ireland, due to poor handling and procurement. These figures are not reliable as there are differences in definitions: one firm costs waste meticulously, including the cost of selling surpluses cheaply at the end of the day; some firms include under 'shrinkage' rotten vegetables thrown out, vegetables sold cheaply, short weight on acceptance, excess weight on scale, shoplifting and other theft; other firms do not know how much they waste.

Another point that must be considered is terms of payment. A supermarket multiple can finance the building of a store by delaying payment on the stock for 3 or 4 months. This means that the supplier loses 5%

to 10% in interest so the margin is 5% to 13% higher than it seems at first sight.

Very few supermarkets keep records which would tell them what margin they actually achieved. Even the largest multiples, with the most sophisticated computer accounting and stock-control systems, find it difficult to integrate the fruit and vegetable departments into the system because of the large number of suppliers, the frequent price changes, the high wastage, etc. I have found that figures such as the purchasing price and the selling price are inaccessible or unused, and the Irish price control officers have found that invoices for purchases were kept, but not analysed, and that there was frequently no record of selling price or quantity sold (8, 9).

Most firms calculate margins by taking an arithmetic mean of the margins on each good, which is inaccurate with fruit and vegetables. Margins fluctuate over time, and margins vary from crop to crop, as it is not always possible to charge exactly the percentage margin required, 33% on an item costing 4p, for instance. In addition, supermarkets level margins, to keep prices steady over time, and average margins, charging a high margin on a cheap cauliflower and a low margin on an expensive cauliflower so that both can be retailed at the same price. Margins also tend to be lower on goods with a fast turnover.

Once the supermarket margin is known, there is still the problem of interpretation. In Ireland, the multiples accept the product at the back door of the shop so the margin is purely retail and excludes packing (8). In England one firm buys from growers, prepacks the vegetables and delivers to shops round the country, so the margin is a full distributive margin, and most other multiples include some distribution and wholesaling in their margin. If one wants to compare the efficiency of firms, the comparison must be confined to firms which perform the same function, which is feasible in Ireland but not in England. Alternatively, one must compare the entire market margin from grower to consumer, but this means that a different criterion must be used. Some allowance should also be made for the size of shop. A hypermarket expects a margin on turnover of all goods of 8 to 10%, where an ordinary supermarket would need 12 to14%, and a counter-service grocer would want perhaps 20%. Some multiples operate only hypermarkets while others have the full range.

Crude figures on percentage margins for all fruit and vegetables, but not for each product, are fairly easily obtained. These are adequate for comparing closely matched shops to see if some are more efficient than others but they are useless for price control. Supermarkets do not usually think in terms of absolute margins so they cannot provide them even in this crude form.

Greengrocers' margins

Most greengrocers know their overall percentage and absolute margin because they operate a cash business and have little carryover from week to week. Their weekly revenue minus their weekly purchases is their margin. This margin includes an allowance for waste, so greengrocers frequently cannot give an estimate of waste except to say what is acceptable for apples or potatoes. Some greengrocers aim at keeping a constant-percentage, overall gross margin, and some aim at a weekly gross margin which is constant throughout the year.

I have found that greengrocers are reluctant to give their margins for a National Prices Commission study though they are very helpful when an ordinary market study is carried out. Margins may also be obtained from the Census of Distribution, though, both in England and Ireland this appears to have missed a large segment of greengrocers and to be unreliable. Companies which are large enough to publish company reports are atypical. The accounts kept for tax purposes show the total revenue and total expenditure, with overheads listed separately, which means that the absolute and percentage gross margin for all fruit and vegetables together is easily calculated, and a price control inspector with compulsory inspection powers could rapidly check margins. The accounts are not likely to be any more accurate than any other accounts kept for income tax purposes by people who employ only family labour and who pay and receive only cash.

To get margins on each product involves much the same difficulties as getting margins from supermarkets, but including, as well, very poor documentation and changing margins, with, for example, cauliflowers bought at 8p and sold at 15p for the first three days, 12p the next two and 5p the last day.

Sometimes the retailer does not know the margin himself: the secondary wholesaler offers him a box of "7p apples" for £5 and the retailer does not know the level of waste or the number of apples.

Comparison of greengrocers' margins is quite as difficult as comparisons between supermarket chains, as a city-centre greengrocer's shop may sell mainly fruit and flowers, while a shop in a working-class residential area sells mainly potatoes, cabbage, carrots and onions. Handling costs and rent, of course, account for many differences in margins. There is a certain amount of vertical integration with wholesalers owning chains of shops, shops buying direct from growers and growers owning shops.

The amount of work involved in getting margins on each line from a greengrocer is little different from that of getting margins from a supermarket multiple so, since six supermarket multiples have half Dublin's fruit and vegetable trade and 40 supermarket and variety-store multiples have 40% of the British trade, both general investigations and the enforcement of price control are concentrated on the multiples.

Profit margins

The annual profit margins of supermarkets and greengrocers can be obtained from their company reports or income tax returns. Greengrocers may sell flowers, frozen foods, fish or health foods as well as fruit and vegetables while supermarkets sell an even wider range. It is impossible to say how much profit comes from fruit and vegetables, let alone from any one line, as overheads would have to be allocated between products and any method of doing this, including allocating according to turnover and allocating according to floorspace, is open to objections.

PRICE CONTROL

To be effective price control measures should be based on information that is easily obtained by price control inspectors or members of the public. In Britain and Ireland price control for fruit and vegetables is impractical in peacetime.

Fixing prices

Normally the first step price controllers take is to fix manufacturers' prices. Instead of questioning the present levels of prices, they accept the prices at a base period and make manufacturers justify any increases, with evidence of higher costs of raw materials, wage increases under the National Wage Agreement and so on. Within a few years, at the current rate of inflation, most costs will have been examined in great detail. This approach does not work with horticulture. There are thousands of producers, each with different cost structures, and it would be impractical to make each justify his price increases. Since they are price takers, this would also be pointless.

Control of prices at production, wholesale or retail levels would prevent the distribution system from working. At present, a complex marketing system disposes of hundreds of fruits and vegetables in quantities that vary from day to day, from week to week and from month to month, to consumers all over the country. The price system allocates supplies between consumers and makes it possible to drop prices to clear a surplus. If a maximum price is fixed, growers who produce out-of-season crops will find they can no longer get the high prices necessary to cover their costs and they will stop producing. Retailers and wholesalers will refuse to handle slow-moving goods with low prices. Any reduction in price will be passed on to the producer and he will stop producing fruit and vegetables, unless he has been making excess profits in the past.

Because of this, price controllers concentrate on distribution margins rather than on prices charged, when dealing with wholesaling and retailing.

Wholesale margins

Attempts have been made to control wholesalers' and importers' margins by legislation. If a constant percentage margin is imposed, the wholesaler is free to raise his margin as inflation raises prices, so control does little to limit price increases. A fixed money margin, on the other hand, will become a smaller percentage as prices rise. In Ireland, distributors are not allowed to charge a margin in money greater than that charged on 23rd June 1973 (10). This is unenforceable because commissions, as opposed to the margin between buying and selling, are not covered by the legislation, because the importers and secondary wholesalers are price takers in a fluctuating market and because a lawyer could spend months arguing whether the regulation refers to one vegetable or to all together or whether a French Golden Delicious apple is the same as an Irish Golden Delicious apple or whether an apple in October is the same as an apple in May. These are in fact the conceptual and practical difficulties that have been discussed above.

Retail margins

Similar legislation has been introduced in Ireland on retail margins (11) and similar problems have been encountered. A team of accountants took a week to examine the accounts of a supermarket chain to compare the margins in one week with the margins in the base period, as the chain could provide only invoices and a list of retail prices (other chains could not provide even this). The National Prices Commission reports that most retailers do not know about the regulation and the large supermarket chains, who do, ignore it on the grounds that it makes price levelling and averaging illegal and it reduces their profits (9).

In Britain, the Price Commission can instruct retailers to reduce their distributive margin as a percentage of turnover. This can only be enforced on large public companies who keep the right records and it must apply to a wide range of goods, to all goods sold by one firm rather than to all fruit and vegetables.

Retailers can reduce their margins by cutting out high margin products, like fruit and vegetables, and replacing them with lower-margin products which take up less space, by selling products with less waste (or by selling the same products at a lower margin. Some problems have been found in defining a firm where there is vertical integration, because the 'buying price' could be taken at several points, for example, at prepacking, at wholesale or on delivery at the shop.

There are some sectors in which control is exceptionally difficult and these are usually ignored. For example, control of import prices is generally regarded as impossible and control of export prices as undesirable. This leads to the situation where Irish companies export at inflated prices and import identical items from associated companies in England at equally high prices. False invoices may also be used. Prices of services are seldom controlled because of problems in evaluating quality and of enforcement. Price controllers sometimes ignore industries which are obviously very competitive, in the hope that competition will keep price down.

CONCLUSION

I have discussed the conceptual and theoretical problems of market-margin investigations at length because nearly all the studies I have seen have had no clearly defined criteria, have used different criteria interchangeably, have used inappropriate data for the criteria or have misinterpreted the data. As a result, the conclusions reached by the studies were quite unwarranted.

Even if the problems are understood, it may not be possible to get the appropriate data. For example, in the main study on which I have worked (8) it was only possible to reach a conclusion because there were gross inefficiencies (criterion (e)) and because the margins charged in Ireland were much higher than the margins charged in England (criterion (d)).

Since price control of horticultural products is not generally successful, price control authorities have resorted to publicity in the hope that (a) consumers will feel that something is being done on their behalf, and (b) retailers will feel ashamed or will fear consumer reaction so they will keep prices down.

The controller may publish comparisons of prices in different stores, but this must be done with care, for a firm may sue if the figures are inaccurate or misleading.

It has been shown already how difficult it is to produce a figure that is not misleading. There is the added complication that, if a retailer knows the products and the weightings used for the comparison, he can reduce the margin on the commodities included in the comparison and increase the margin on commodities not included in the comparison, so that his prices appear lower. Alternatively, as his weightings will not be the same as those of the comparison, he can increase the margins on those items for which his weighting is higher than that used for the comparison and reduce the margins on those items for which he has a lower weighting. If the weightings and commodities are not known, the comparison is probably meaningless and so may be libellous. Either way the consumer is misled.

The conclusions of market margin investigations may also be published, but, as these are usually unwarranted, they mislead the consumer. Publicity is only given to reports saying that prices are too high, and, if the consumer is told often enough that he is being exploited, and nothing is being done about it, he is not likely to cooperate in a policy of wage restraint. The publicity does not have the desired effect on the fruit trade because many of the weaknesses of these studies are obvious and the reports are often greeted with resentment by the trade press (13).

Probably the most valuable service of the price control authority is to provide funds for a searching examination of the inefficiencies of the industry. As long as a study is theoretically sound and the appropriate data are correctly applied, it may bring about improvements in marketing which lead to real and lasting reductions in margins. This may happen even if it is impossible to say that margins are too high or too low according to the criteria laid down for price control purposes.

REFERENCES

1. Ministry of Agriculture, Fisheries and Food, *'Household Food Consumption and Expenditure,'* HMSO, London, 1974.
2. Bowbrick, P., *Acta Horticulturae* 40: 327, 1974.
3. Bowbrick, P., *Ir. J. agric. Econ. rur. Sociol.* 4: 23, 1974.
4. National Board for Prices and Incomes, '*Prices, profits and costs in food distribution,*' HMSO (Cmnd 4645), London, 1971.
5. National Board for Prices and Incomes, '*Distribution costs of fresh fruit and vegetables*,' HMSO (Cmnd 3265), London, 1972.
6. Price Commission, '*Interim report on fruit and vegetables*,' HMSO, London, 1974.
7. '*Report of Committee on Horticultural Marketing*' (Runciman Committee), HMSO (Cmnd 67), London 1957.
8. O'Dwyer, T., O'Neill, F. K., Bowbrick P. and Cowan, C., '*The marketing of fruit and vegetables*,' National Prices Commission (PrI 3100), Dublin, 1973.
9. National Prices Commission, '*Monthly Bulletin'* 32: 91, Stationery Office, Dublin, August/ September, 1974.
10. '*Prices (Stabilisation of Profit Margins of Importers and Wholesalers), Order 1973.*' SI no. 167 of 1973 (PrI. 3240), Stationery Office, Dublin.
11. '*Prices (Stabilisation of Profit Margins of Retailers) Order 1973*.' SI no. 168 of 1973 (Prl. 3241), Stationery Office, Dublin.
12. Bowbrick, P., *Ir. J. agric. Econ. rur. Sociol. 6:* 21, 1976.
13. *Fruit Trades Journal* 146: 1974.