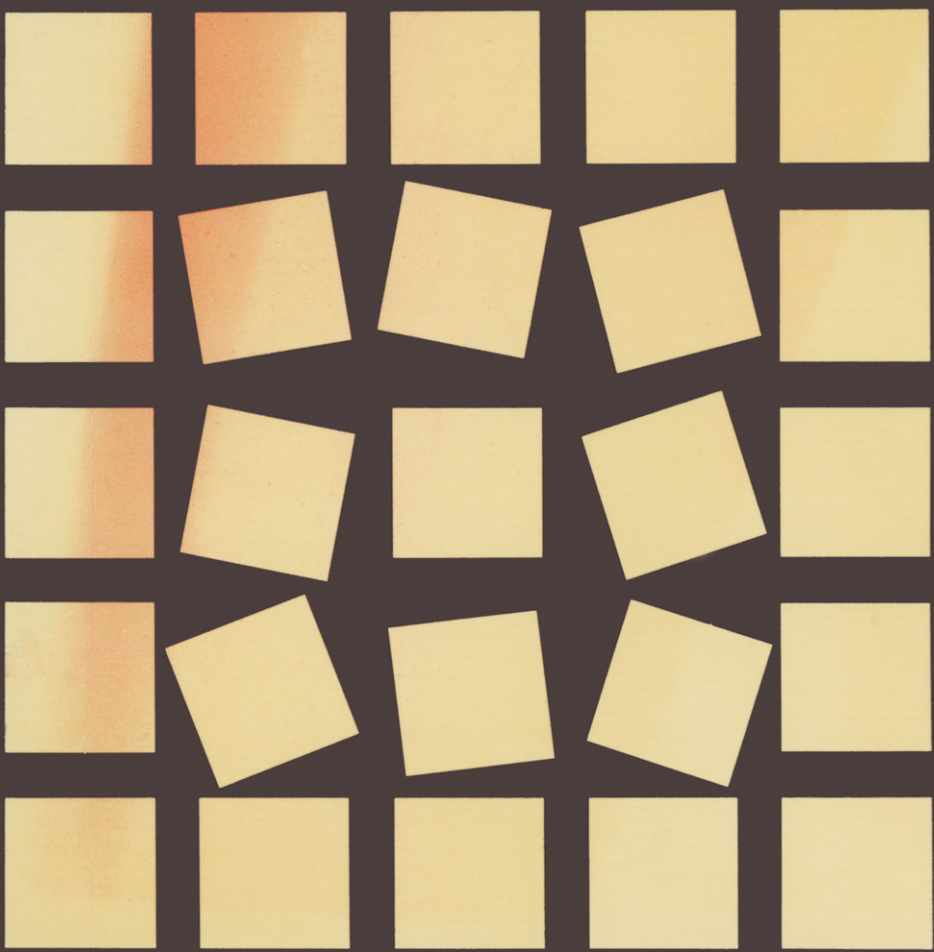
# Pricing

F Livesey

Macmillan Studies in Marketing Management



# PRICING

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# PRICING

F. Livesey

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To Grace, whose affection is above price

# Contents

# Preface

This book has been written with two main groups of readers in mind. The first comprises students taking courses in marketing or in those branches of economics which go under the heading of industrial or applied economics. It is hoped that such students will particularly benefit from the demonstration of how basic economic concepts can be brought to bear on a wide range of pricing decisions.

The second group comprises company executives who are involved in, or whose activities are affected by, pricing decisions. For these readers the main benefit of this book may be found in the comprehensive review of techniques and methods of pricing which are available. In reviewing these methods the author has kept two objectives firmly in mind. The first is to demonstrate that pricing decisions constitute a complex web, and that successful pricing requires an awareness of the many interrelationships among pricing decisions. The second objective has been to evaluate the individual methods or techniques in the light of the constraints which exist in company situations – imperfections of data, lack of time, etc.

Both groups of readers will, it is hoped, benefit from the fact that the results of the latest research into pricing decisions are presented, together with an extensive list of references which will prove useful to anyone wishing to pursue a particular aspect of pricing in greater depth.

*1975* **F. L.**

# Chapter 1

# Objectives and Constraints

Any discussion of pricing policies should be set within a framework of business objectives and of the constraints within which firms operate when trying to achieve these objectives.

Business objectives have been scrutinised by economists, psychologists, sociologists and other observers, and the picture emerging from these studies is one of considerable complexity. Most firms have several major objectives, which may sometimes be complementary and sometimes incompatible. When objectives are incompatible the conflict will usually be resolved in one of two ways. Either a different emphasis may be given to the various objectives at different points in time,[1*] or, alternatively, a policy may be adopted which goes some way towards meeting each objective, but not as far in any direction as a single objective would require. So, for example, a price may be chosen midway between the prices that would maximise the current volume of sales on the one hand or current profitability on the other.

Further examples of compromise solutions will be given, but in the early chapters we explore policies deriving from a series of alternative, single, objectives. It is necessary to sacrifice some of the richness of reality in the early stages in order to build a clear and firm analytical framework. This framework will subsequently be elaborated in some detail.

The objectives which are given particular prominence are: (*a*) to achieve a target rate of return on investment, (*b*) to maintain or improve market position and (*c*) to stabilise prices and/or margins. These objectives were identified as being especially important by Kaplan and his colleagues.[2]

* See pp. 149–63 for notes and references.

Kaplan also identified two other objectives as being important namely to meet or follow competition, and pricing 'subordinated to product differentiation'. These are also discussed in subsequent chapters, although we have preferred to consider them as indicative of the constraints within which the firm operates rather than as objectives. The nature and extent of competition is an external constraint and is discussed in detail in Chapter 2. The product-differentiation activities of the firm, while perhaps helping to minimise external constraints, may impose a fresh set of internal constraints on pricing decisions (see Chapter 3).

Firms are subject to two other major constraints. These are, first, the attitudes, opinions and reactions of consumers and distributors, which are explored in Chapter 4. Second, there are legal constraints of various types. These have tended to become more important over time and are discussed in some detail in Chapter 13.

A very broad distinction can be made between decisions relating to the basic price, and to 'subsidiary' pricing decisions relating to such matters as price differentials, promotional pricing, pricing and the product life-cycle, and so on. The fact that these latter decisions have been termed 'subsidiary' should not be taken as an indication that they are of minor importance. On the contrary they will, in total, have a very significant influence on performance. Moreover they will often account for a majority of the time devoted to pricing decisions. They are only subsidiary in the sense that they must, or at least should, follow on from decisions on basic price levels. We follow this chronological sequence by dealing first with the factors impinging upon basic price decisions (Chapters 2–4) and subsequently moving, via the transitional Chapter 5, to a discussion of subsidiary decisions in Chapters 6–9.

Chapters 10–12 are devoted to pricing in bid situations, transfer pricing (with particular attention to multinational companies) and retail pricing. Although it proved appropriate to deal separately with these specialist topics the analysis in each case builds upon the analysis of earlier chapters. Similarly, Chapter 13, on legislation relating to pricing decisions, pulls together and develops further a number of points that were made in earlier chapters.

By the end of the book the complexity of objectives, and of the factors influencing pricing decisions, will have become very clear; the final chapter very briefly indicates the main implications of this fact and suggests what are the main requirements for a successful pricing policy.

## FURTHER READING

R. M. Cyert and J. G. March, *A Behavioral Theory of the Firm* (Englewood Cliffs, N.J.: Prentice-Hall, 1963) ch. 4.

A. D. H. Kaplan, J. B. Dirlam, and R. F. Lanzillotti, *Pricing in Big Business* (Washington, D.C.: The Brookings Institution, 1958) ch. 2.

O. Wheeley, 'Pricing Policy and Objectives', in *Creative Pricing*, ed. E. Marting (American Management Association, 1968).

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D. V. Harper, *Price Policy and Procedure* (New York: Harcourt, Brace & World, 1966) chs 2, 3.

R. A. Lynn, *Price Policies and Marketing Management* (Homewood, Illinois: Irwin, 1967) ch. 5.

R. H. Barback, *The Pricing of Manufactures* (London: Macmillan, 1964) chs 4–9.

F. Livesey, *Economics* (Stockport: Polytech., 1972) ch. 2.

# Chapter 2

# Basic Models of Price Determination

## THE ELEMENTARY MODEL

We start by assuming that products are undifferentiated, that the costs of all suppliers are identical and that all suppliers initially have equal market shares. We further assume that the objective of all firms is to earn an adequate rate of return on capital employed: the definition of 'adequate' being the same for all firms; however, all firms act independently of each other, that is to say there is no co-ordination on prices, quantities to be supplied, etc. It will be seen that under these conditions the firm's discretion would be extremely limited.

Each firm calculates its average total cost at the expected level of sales, adds to this a profit margin designed to yield its target rate of return, and thus arrives at the target price.[1]

This procedure may appear to contain an element of circular reasoning, since while the price will affect the quantity sold, this quantity has itself been taken into account in the calculation of average cost and thus in the determination of price. In practice this problem will not usually be serious, at least for established products, since sales in previous years will often give a good guide as to what can be sold in the current year provided that market conditions do not change significantly.

However, in some instances expectations will not be fulfilled and we now examine the implications of this for pricing, beginning with the situation where demand is greater than was expected.

## THE RESPONSE OF PRICE TO CHANGES IN DEMAND

In Figure 2.1[2] the firm sets price $0P$ at which it expects to sell $0E$. If demand turns out to be $D_H$ the firm could either sell $0E$ at a price greater than $0P$ or it could sell $0H$ at price $0P$. Either of these decisions will yield a rate of return above the target, and so we should consider as a third possibility a reduction in price.

There are, in fact, many reported examples of price reductions following from increases in demand: most of these represent the passing on of cost reductions arising from economies of scale (see below). In the present situation the most likely response, given the assumed objective, would be to maintain

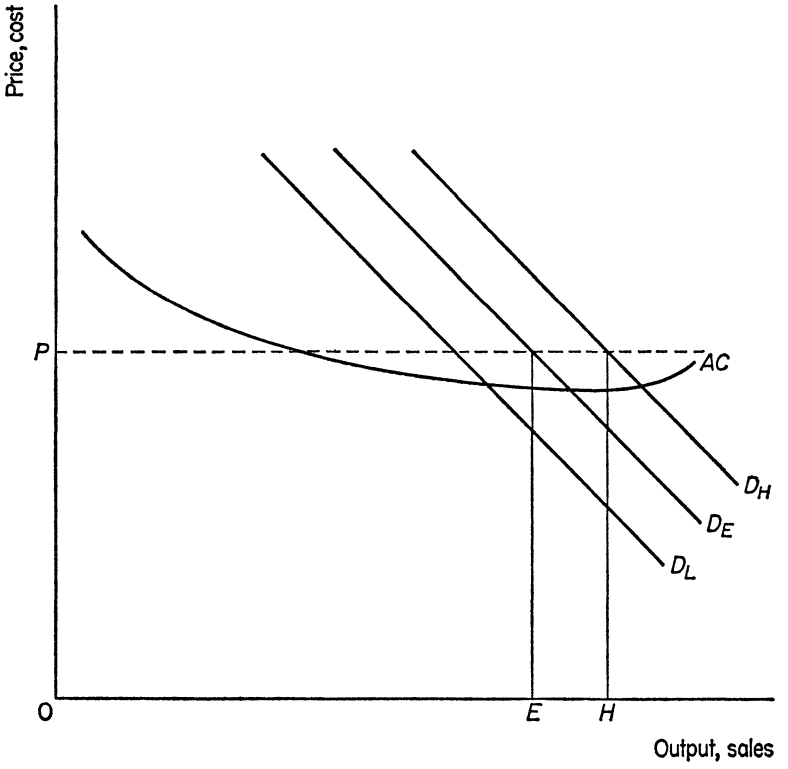


Figure 2.1

price and increase sales. (This would be especially likely if subsidiary objectives were stability of price and margin.)

An increase in price would be most likely to occur if demand was even greater than $D_H$, and if producing at the very high level necessary to meet demand caused average cost to rise.[3] It should be noted that even here a reduction in profit per unit might still leave the return on capital employed at or above the target level, given that there would be very little change in the amount of capital employed as capacity utilisation increased. Moreover if it was felt that the increase in average cost might reduce the rate of return to an unacceptable level (or if the target was a given profit margin per unit) the firm might simply refuse to expand production, preferring to allow its order books to lengthen.

Given the nature of the model it is reasonable to assume that the change in demand would affect all firms equally, that is to say each firm's demand curve would be $D_H$. However, in the absence of co-ordination, there is no reason for any *firm* to make this assumption. Furthermore, even if the firm correctly assessed the state of its rivals' order books, some doubt would remain as to what price would be most appropriate under the new demand conditions.

This can be illustrated by reference to one of the alternatives noted above: the charging of a higher price to compensate for an increase in average cost.

Figure 2.2 shows that the firm could sell 20 per cent more than expected at any price. Now if each firm were to raise its price to $P_H$, each would sell $0H$ and would keep its margins intact.

However, if only one firm increased its price it might lose a high proportion of its orders to rival suppliers.[4] If its demand curve in these circumstances were $D_F$ it would sell only $0F$ at price $0P_H$, and its profits would be much lower than if it had maintained the lower price.

It is, then, absolutely crucial to distinguish between the elasticity of demand[5] (indicated by the shape of the demand curve) when the prices of other suppliers (*a*) also change and (*b*) remain unchanged.

As we shall see later, firms often adopt procedures designed to improve their predictive ability concerning the reactions of competitors, but where considerable uncertainty remains, firms

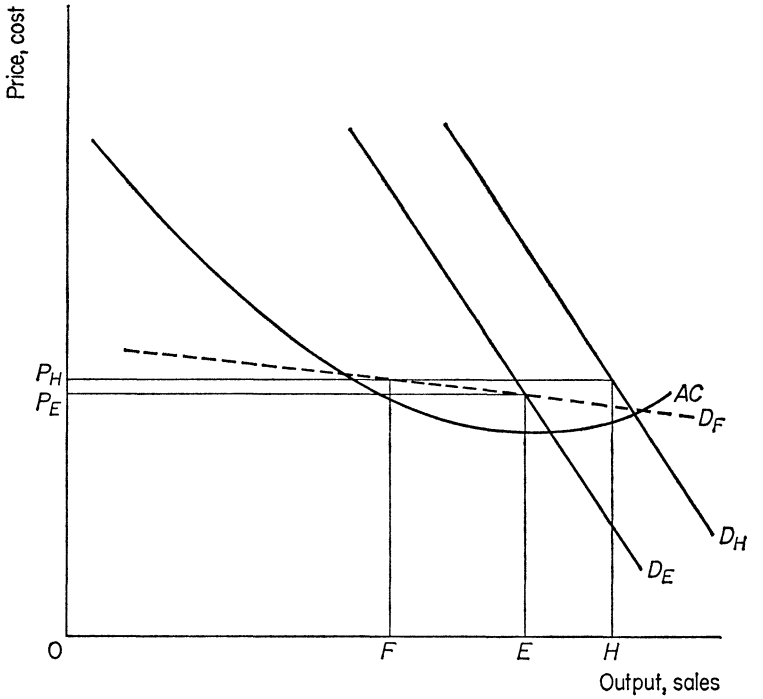


Figure 2.2

will often play safe by maintaining their existing prices at least for some time following the initial increase in demand.

Turning to the situation where demand is less than expected ($D_L$ in Figure 2.1) we can be much less firm in our prognostications, since two conflicting tendencies exist. On the one hand there is the desire to earn higher profit margins to compensate for the lower sales. On the other hand there is the recognition that demand is low and that buyers, aware of their strong position, will be unwilling to accept a price rise.

We should again stress the importance of the assumption of a lack of co-ordination among suppliers, which makes it particularly dangerous for any one supplier to raise his price. Indeed, in the absence of co-ordination, a supplier may respond to the lower demand by reducing his price, hoping to attract buyers from any suppliers who do not reduce their prices. (If other suppliers do not follow, then the elasticity of demand

for the individual firm will be much greater than if all prices are lowered together.)

The temptation to reduce prices will clearly be greater the further demand falls below the expected level. Price-cutting will also be encouraged if a firm believes that it can keep the cuts secret from competitors by, for example, giving discounts from its published price-list. The liquidity position of firms will also be important. A firm with strong reserves may be content to weather the storm, whereas a firm facing impending bankruptcy may see no alternative to making a 'dash for freedom'.[6]

Once price-cutting begins it is difficult to predict where it will stop. However, two possible floors may be suggested. The first is average total cost (either at the expected or the current level of output), since firms will be very reluctant to price below cost. But if sales remain unsatisfactory price may fall to the second floor: average direct cost. In overcoming their reluctance to price below total cost, firms will take account of the fact that cost includes an element of fixed cost, that is to say a cost which is incurred whatever the level of output, and that short-run profits will therefore be greater as long as revenue exceeds direct costs than they would be if production ceased.[7]

Hence, we may see average direct cost as providing the ultimate floor to price in most instances. It must be emphasised however that this is very much a short-term solution. As time passes more and more fixed costs become variable and involve the expenditure of cash, as, for example, when machinery needs to be replaced. If there seems to be little prospect of covering all costs in the long run and of earning the target profit, firms will withdraw from the market. This change in the balance between supply and demand will encourage the remaining suppliers to increase price, an increase which buyers will now be less reluctant to concede. Eventually price will approach the level necessary to yield the target profit.

Figure 2.3 illustrates one possible process of adjustment to an initial fall in demand.

With expected demand $D_E$ each firm sets price $P_E$, expecting to sell $0E$. However, in the face of the actual demand $D_L$ firms reduce price to $P_L$ equal to the level of average direct cost. Each firm now sells its expected level of output $0E$, and

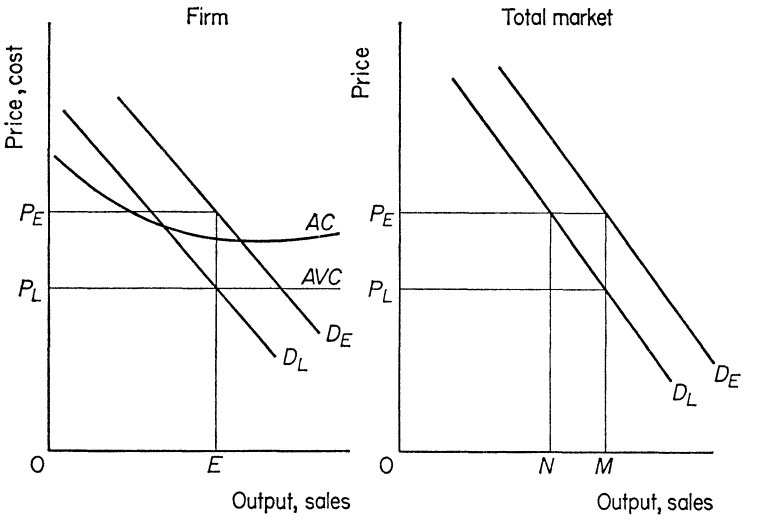


Figure 2.3

the total sold is $0M$ ($0E \times n$, where $n$ equals the number of firms).

Faced with profits well below target, $y$ firms leave the market, each of the remaining firms continues to produce $0E$, but the total produced is now only $0N$ $[0E \times n(n—y)]$, which can be sold at price $P_E$.

## THE IMPLICATIONS OF CO-ORDINATION

We now examine the likely effects of a different set of assumptions from those built into our initial model; and our first assumption is that firms are able, in one way or another, to co-ordinate their activities.[8]

There is no reason to think that the response to higher than expected demand, outlined above, would be changed by the ability to co-ordinate activities, given that the target return continues to be earned. (This does not imply that the target rate would itself be uninfluenced by the ability to co-ordinate a point to which we return below.)

However, co-ordination will reduce the likelihood that prices

will weaken when demand is less than expected. As indicated above, price reductions are most likely when one firm believes that the reductions can be concealed; but a basic requirement of successful co-ordination is the provision of information to competitors.

Again, one firm may institute a price reduction from the fear that if it does not do so, rivals may make a pre-emptive reduction. This fear should be reduced by co-ordination. Consequently, unless it is agreed that the market elasticity of demand is sufficiently high as to make a general price cut worth while, co-ordination will reduce the probability that prices will fall.

## THE IMPLICATIONS OF ALTERNATIVE OBJECTIVES

If firms aim to earn as high a rate of return as possible, rather than merely an adequate return, then they are more likely to respond to an increase in demand by raising prices, but the ability to co-ordinate action will again be crucial. Moreover even if co-ordination is possible among existing suppliers, and even if they wish to increase their rate of return, it does not follow that prices will necessarily be raised. If it was felt that this would encourage new firms to enter the market, to the detriment of future sales and profits, suppliers might decide to maintain their prices, especially if they took a long-term view of profit maximisation.

Another possible target is increased sales, subject perhaps to the earning of a minimum profit. This would clearly imply that suppliers would take the benefit of higher demand in the form of higher sales rather than higher prices. Similarly an emphasis on sales suggests that firms would be more willing to reduce prices when demand was low.

## THE IMPLICATIONS OF PRODUCT DIFFERENTIATION

It is difficult to envisage a situation of product differentiation which is consistent with the other elements of our elementary model – identical costs and market shares – and product

differentiation is discussed in detail in Chapter 3. It should be noted that its general implication is that the products of the various suppliers will be less-perfect substitutes, so that the effect of a change in price by one supplier on the sales of another supplier will be dampened.[9]

## THE IMPLICATIONS OF COST DIFFERENTIALS

If, finally, we drop the assumption of identical costs, we need to examine the implications of two distinct alternative assumptions. One is that the costs of some firms are below those of other firms at all levels of output (Figure 2.4(*a*)). The other is that, because of different levels of capital intensity, the cost relationship changes as output changes (Figure 2.4(*b*)).

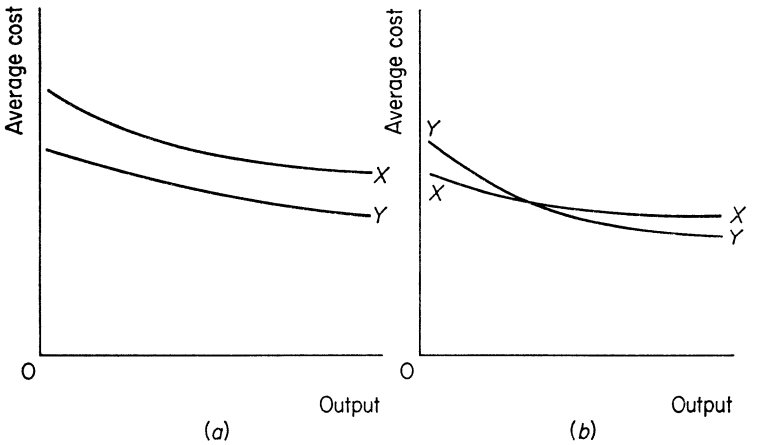


Figure 2.4

In situation (*a*) it is likely that the initiative in pricing will lie with the lower-cost firm, *Y*.[10] The basic choice facing firm *Y* is between setting a price which is sufficiently high to yield acceptable profits to all suppliers, including those with higher costs, such as *X*, and a lower price which may yield lower profits at first, but higher profits in the long run as higher-cost rivals are squeezed out of the market.

A similar choice exists where the firm faces possible competition from potential new entrants who are more likely to be deterred by a low price. These alternative strategies have received considerable attention from various writers, and especially from Professor Bain.[11]

In situation (*b*) there is a strong presumption that firm *Y* will reduce its price in order to attain output levels at which it has a cost advantage over firms such as *X*.

We have explored, by means of an elementary model whose assumptions we have varied, the likely behaviour of prices under various demand conditions. We have by no means explored all the possible permutations which exist, but we have gone as far as is appropriate in the space available. We now examine, in rather less detail, the possible response of price to a deviation in costs from the expected level.

## THE RESPONSE OF PRICE TO CHANGES IN COSTS

We have seen that, for various reasons, firms may be reluctant to change price in response to fluctuations in demand, a reluctance which has led in many industries to a well-defined pricing 'season' during which prices do not normally change. Given that the season might last for six months or a year, firms normally make some allowance in setting prices for cost changes which might occur during the season, as a result of wage bargaining, changes in input requirements, etc.

In recent years, as input prices have risen at an unprecedented rate, the intervals between changes in output prices have tended to become much shorter, and in the United Kingdom the Government finally felt obliged to intervene so as to reintroduce a greater measure of stability.[12]

However, whatever its length, we can think of prices being set for a season, and being adjusted at the beginning of a new season for any changes in costs that have occurred. If cost increases are known to have affected all firms equally, then, given suitable demand conditions, these increases are likely to be recovered in full,[13] whatever the assumptions of our model.

When demand conditions are less favourable, however, upward price adjustments are most likely if co-ordination is

possible, since the fear that the initiator will not be followed by his rivals will be reduced. Similarly upward price adjustments may be facilitated by product differentiation, because of the lower cross-elasticities. (Although product differentiation may also mean that suppliers are affected less-evenly by cost increases.)

Finally, the objectives of the firm, and especially the distinction between a profit and a sales/market share objective, are likely to influence the response of price to changes, and especially to reductions, in costs. Lower prices will clearly be more likely to follow if the objective is an increase in sales/market share or the earning of an adequate profit, than if firms aim to maximise their profits. If profit maximisation is the objective, and if this requires maintained prices (which will of course depend upon the demand elasticity), it will be more likely to follow with co-ordination of activities.

## THE SIGNIFICANCE OF ECONOMIES OF SCALE

As mentioned above some of the most dramatic reductions in cost result from the operation of scale economies.[14] The potential benefits of scale economies give rise to an interesting problem in pricing policy, namely whether the firm should take the risk of reducing price, perhaps to the point where its current margins fall below the usual target figure, in order to try to obtain the sales which would enable it to enjoy economies of scale, or whether it should adopt a more passive policy, maintaining its current margins, and taking advantage of scale economies only as they arise through the 'natural' growth of the market.[15]

In Figure 2.5 the firm, with average cost $AC_1$ is selling output $0Q_1$ at price $0P_1$. Knowing that at a larger output, lower costs could be achieved, as a result of, for example, the introduction of more capital-intensive methods, it might reduce price to $P_2$. If demand is highly price elastic ($D_2$) higher profits will be earned; but with a less-elastic demand ($D_1$) losses will result.

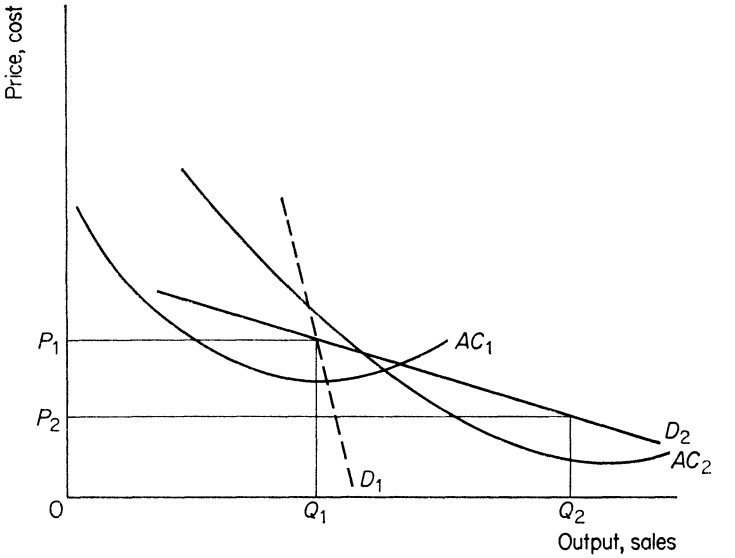


Figure 2.5

## PRICING IN OPEN MARKETS

The various models presented above have shown that the relationship between the price of any product and its cost may be influenced by many factors: the degree of product differentiation, the possibility of co-ordination among suppliers, etc. A feature common to all these models is the assumption that the individual firm has a target price in mind, and that this target price is related, in a fairly definite way, to cost. We have also shown that a price, when set, will often persist for some time (formally, a season), even if demand and cost conditions turn out to be different from what was anticipated.

There are however certain types of market which we define as open markets,[16] in which price is much more responsive to the relationship between *aggregate* demand and supply. The costs, and indeed the policies, of the individual supplier have much less influence on price than in the situations considered above.

Archetypal open markets are auction sales and exchanges of various kinds, such as the London Metal Exchange and the

Baltic Exchange. Most of these markets are characterised by undifferentiated products and large numbers of suppliers, leading to an absence of those relationships between individual suppliers and buyers which are subsumed in the concept of brand loyalty.[17]

A further important characteristic of many open markets is the fact that trading is often intermittent, contracts being struck only during well-defined time-periods in which the quantity supplied is fixed. The result of this situation is that price is heavily influenced by the level of demand. So in Figure 2.6 with $0Q$ supplied and demand at $D_1$ price is $P_1$; with the lower demand $D_2$, price is $P_2$.

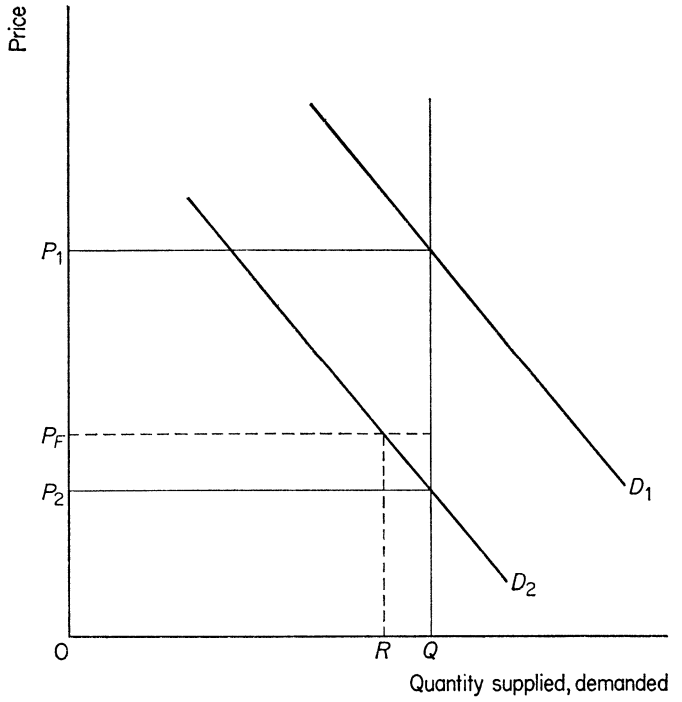


Figure 2.6

Note that this latter price might be unacceptable to some suppliers who would prefer to withhold their supplies from the market. This decision is represented by the restriction of

supply to $0R$, which ensures that suppliers obtain their minimum, floor price, $P_F$.

The extent to which suppliers follow this alternative, that is to say the extent to which supply may *not* be fixed, will depend largely upon the nature of the product; it would clearly be more feasible for non-perishable than perishable products. A second influence is the alternative means available for disposing of the product. In the market for fish for human consumption a floor price might be set by what suppliers felt they could obtain from the manufacturers of fish meal. In the market for fresh tomatoes the alternative of tinned tomatoes might be relevant. Finally, the liquidity position of the supplier may be influential. A firm which requires finance to repay debtors is more likely to accept a 'distress' price than a firm which has less-pressing financial problems.

To summarise, firms operating in open markets have a very simple price decision. In the absence of product differentiation there will be a well-defined market price, and no supplier can expect to obtain more than this price. Conversely there would be no point in charging less than the going price, since it can sell all its output at this price. The decision is therefore whether to accept the market price or whether to withhold supplies from the market. Withholding supplies is in fact a sales, rather than a price, decision, although the aggregate effect of such decisions may be a rise in price.

Similarly when we extend the analysis beyond a single trading period, in which decisions relate to output already produced, to a series of periods, price will be affected by decisions on the part of existing suppliers to withdraw completely from the market, and on the part of new suppliers to enter the market.

In some markets the effects of these 'investment decisions' may be felt fairly quickly. In many agricultural markets for example, supply can be varied from one year to the next by changing the land use. But in other markets, where there is no satisfactory alternative use for the resources employed, for example in many mining enterprises, contraction or expansion of supply may occur only very slowly.

In such markets, price is very sensitive to changes in demand, and open markets are often characterised by a high degree of price instability, sometimes fuelled by speculative purchasing.

Table 2.1 *Prices on the London Metal Exchange*, 1974

(£ per metric ton)

| | *January* | *1974 High* | *October* |
|---|---|---|---|
| Copper-wire bars | 900 | 1400 (Mar) | 620 |
| Tin | 3500 | 4250 (Sep) | 3400 |
| Lead | 260 | 320 (Apr) | 230 |
| Zinc | 550 | 880 (Apr) | 380 |

Table 2.1 shows a rapid rise in price in the first part of 1974, followed by an equally rapid decline which left October prices below those ruling at the beginning of the year.

## PRICE FOLLOWERS

In open markets no single firm can directly influence the going price. In other markets the price may be effectively set by one dominant firm – the price leader – and accepted by the remaining firms.

Price leadership is discussed in greater detail later. Here it is appropriate simply to point out that price followers may be faced by a decision similar to that facing firms in open markets, that is, whether to accept the going price or whether to withdraw from the market. Again this decision will depend upon the profits generated at this price, and the alternative uses of resources that exist.

## MARKET STRUCTURE AND PRICE DETERMINATION

To conclude this chapter we examine the significance for price determination of the more-important aspects of market structure.[18]

## THE NUMBER AND RELATIVE MARKET SHARES OF SUPPLIERS

Economic theory suggests that profit margins will be inversely related to the number of suppliers in the market, partly because

the smaller the number of suppliers the less elastic the demand for the products of each firm, and partly because co-ordination of activity (for example in raising prices to take advantage of an inelastic demand) is easier the smaller the number of suppliers. Several provisos must be made concerning these suggested relationships.

First, the relationships are unlikely to be precise or regular. We cannot assume that significant differences would emerge if the number of suppliers fell from, say, thirty to twenty, or from six to five.

Second, the relative market shares are likely to be significant. If one firm has a very large share of the market it may be accepted by the remaining firms as a price leader, and a pattern of prices may arise which is quite different from that which would emerge from a more even distribution of sales among the same number of suppliers.

The third proviso relates to the concept of 'the market'. As our previous discussion has indicated the total market may be split into several sub-markets by product differentiation and the use of diverse distribution channels.

The final factor which nullifies the simple 'numbers' approach is the influence of *potential* competitors and the ease or difficulty with which they can enter a market, a point also noted above.

Although these various factors prevent the application of any simple rule, one might still expect there to be some general relationship between the number of suppliers and pricing behaviour, and the evidence does in fact support this view.

On the basis of a survey of the results of recent empirical studies Yamey concluded that 'higher levels of concentration in industry tend to be associated with higher prices of products, . . . and with higher profits; and that especially high levels of concentration show the "monopoly" effects most strongly.'[19]

## THE NUMBER OF BUYERS

In the article referred to above Yamey also found some evidence that the concentration of buying power was associated with lower purchase prices.

In some instances buying power may be used to counteract

the market power of large suppliers; this concept of countervailing power has been developed most fully by Galbraith.[20]

Buyers may be in an especially strong position when they can specify that suppliers must quote for business by means of tenders or bids. Given that the product will usually be one-off, or custom-built, the situation is essentially one of monopsony, that is, a single-buyer. Pricing techniques which are especially useful in such situations are discussed in Chapter 10.

## VERTICAL INTEGRATION

We have so far considered situations where a firm enters a given market as either a seller or a buyer. In some situations of course a firm, or a group of firms under common control, may exercise both functions. So, for example, many suppliers of aluminium or steel billets, bars, etc., sell partly to independent fabricators and processors, and partly to units within the same firm. The pricing of inter-company transfers is discussed in detail in Chapter 11. Here it is appropriate simply to point out that vertical integration, especially on a partial basis, militates against the co-ordination of activities and orderly pricing.[21]

## CHANNELS OF DISTRIBUTION

If we define channels of distribution in terms of the relationships between buyers and sellers, we can say that as a general rule the greater the diversity of channels the greater the range of prices is likely to be. At one extreme we have open markets where normally only a single channel is used (e.g. the auction) and where prices are identical, at a given point in time, regardless of supplier or purchaser. At the other extreme some manufacturers have the option of selling (*a*) direct to the public, (*b*) via retailers (of several different types), or (*c*) via wholesalers. If a given manufacturer chooses some combination of the above it is quite likely that identical products will sell at different prices. Different prices are even more likely to arise when different manufacturers choose different channels.

This implies, of course, that the greater the diversity of

channels, the greater the pricing discretion enjoyed by the individual supplier: the manufacturer of woollen suitings has more discretion than the sheep farmer. Discretion does not necessarily imply higher prices. Indeed new channels of distribution have often been developed by firms following a low-price policy. For example extensive distribution of budget-label gramophone records was attained by using such unorthodox outlets as grocery retailers, multiple newsagents, and stands on railway forecourts.

## THE DIMENSIONS OF MARKET STRUCTURE – SUMMARY

The aspects of market structure that we have discussed in this section are not in general amenable to the influence of the *marketing* policies of the individual firm, although some, for example the degree of vertical integration, may be influenced by the firm's investment policies. (The one possible exception to this is where the marketing policy of some firms has involved the pioneering of new channels of distribution. Such firms are however in a small minority.)

But when we come to the final important aspect of market structure, product differentiation, matters are very different. Product differentiation is amenable to, indeed is largely the direct result of, firms' marketing activities. As such it deserves to be clearly distinguished from the remaining aspects and to be discussed in a separate chapter.

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# Chapter 3

# Product Differentiation and the Marketing Mix

Product differentiation indicates the extent to which buyers perceive differences between the goods or services offered by different suppliers, and the extent to which their buying decisions are influenced by such differences. Buyers' perceptions are discussed in Chapter 4, and for the moment it is sufficient to say that the greater the degree of product differentiation the wider the spread of acceptable prices is likely to be.

Product differentiation can take many forms. A distinction is sometimes made between objective and subjective, or between real and imaginary forms. However, such dichotomies are not especially useful or valid;[1] they are based on the premise that buyers' satisfaction depends only upon tangible or measurable benefits, whereas it is now generally accepted that many benefits may exist which, although perhaps not measurable, are nonetheless real, that is to say they meet buyers' needs. These needs may include the reduction of perceived risk, the desire for prestige, the desire to be accepted by one's peers, and so forth.

There is therefore no implication in the following discussion that one type of product differentiation is more desirable or effective than another. Indeed the various examples which are given are designed to show that the appropriateness of any type may depend upon the nature of the product and the market.

## FORMS OF PRODUCT DIFFERENTIATION

### *Technical Performance*

This is clearly of widespread importance, but especially so in

industrial products. Superior technical performance is most likely to justify a price premium in components whose cost is small in relation to the total cost of the final product but whose efficient functioning is crucial to the successful operation of the final product (examples are tunnel diodes in computers and titanium components in aircraft).

Technical performance may also be important in consumer-durable goods such as cars and washing machines. However, research undertaken recently by the author indicates that the relationship between technical performance and price is fairly tenuous in such products.[2] This is probably due partly to the difficulties which consumers have in evaluating technical performance and partly to the importance of other forms of product differentiation such as styling and advertising.

### *Styling*

As just indicated styling may be especially important in consumer durables, particularly where the product is conspicuous in use. In the car industry annual model changes, which often have more to do with changes in styling than in performance, are well established, especially in the United States. In clothing, factors such as the increase in disposable incomes, especially for younger consumers, has led to greater emphasis on styling not only in women's but also in men's clothes.

An interesting example of the effect of styling in this last market was provided by the results of a series of tests on men's trousers undertaken by the Consumers Association, and published in *Which?*, October 1970. Thirteen brands of trousers made from a Terylene/Sarille mixture were tested. Of these brand *X*, a retailer's brand, was found to have outstandingly weak cloth, and yet it was liked the best by the panel chosen to judge the appearance of the trousers.[3]

### *Other Physical Characteristics*

Many other physical characteristics can differentiate one product, or brand, from another. Taste is an obvious example in food and drink. A recent example of a differentiated product which failed to attract sufficient customers and whose formu-

lation was changed after a relatively short period was Watney's Red Barrel beer.[4]

Taste is of course a very individual matter, and some markets have been expanded by producing varieties designed to appeal to the tastes of particular segments of the market. So, for example, in 1972 General Foods introduced Bird's Mellow brand of instant coffee to the British market. Supported by one of the heaviest advertising campaigns ever put behind a coffee (the budget for the first three months was equivalent to an annual rate of £1·5 millions), the coffee was aimed at drinkers who prefer a mild taste, particularly those who make their coffee with milk. Bird's Mellow was introduced at a price between the major manufacturers' brands and the retailers' own labels, indicating that there is often no straightforward relationship between product differentiation and price, and that product differentiation must sometimes be evaluated in terms of other criteria, such as a desire to increase sales.[5]

There are various physical characteristics, such as colour and size, which may form the basis of a successful differentiation strategy for particular products, but which will not be discussed here.

### *Packaging*

The cost of packaging varies from the insignificant (the role of packaging being confined to the protection of goods in transit) to the substantial where the packaging forms an inherent part of the appeal of the product. Many examples of the latter can be found in the cosmetics industry: a report by the Prices and Incomes Board showed that about three-quarters of the material costs of cosmetics are packaging materials and about one-quarter raw materials.[6]

### *Advertising*

This is the form of product differentiation which has received the greatest degree of critical scrutiny, including numerous studies which have utilised elaborate econometric techniques designed to elucidate the relationship between advertising and such variables as profitability rates and changes in sales.

The studies which are most relevant to pricing are those which examine the relationship between advertising expenditure and profitability, since a positive relationship would imply that heavier advertising allows firms to widen the margin between costs and prices.[7] Unfortunately the evidence derived from these studies is by no means unambiguous.[8]

*Service*

There is considerable evidence that the level of service may be an important influence on the choice of supplier, especially in industrial goods markets. For example, Cunningham and Whyte,[9] commenting on the results of a detailed study of fifty-one purchase decisions concerning a range of machine tools, concluded that in the first place 'the reputation of the suppliers for delivery reliability, before and after sales service, and of the product for performance and reliability must in most cases be good or very good before the supplier is invited to quote'. (Past experience could be seen as fulfilling the important role of reducing the customer's perceived risk.) Again Buckner, who investigated by means of a postal questionnaire the attitudes of personnel in British firms which purchased plant and equipment, concluded that, of the factors considered by the production engineers responsible for the purchase decision to be most important, service came second only to technical specification, and ahead of price.[10]

In many consumer goods the manufacturer provides virtually no service to the ultimate customer, either because of the nature of the product, for example most foodstuffs, or because such services as may be required are provided by independent agencies, for example retailers who provide display space and repair facilities. However, there are some consumer goods whose manufacturers do supply services either directly or through a system of approved agents. It is claimed that the continued popularity of the Volkswagen in the U.S. market was largely due to a highly efficient service network. On the other hand, in Britain, the deficiencies of the service networks of the producers of domestic appliances received so much critical attention that the Director of Fair Trading asked for assurances that these deficiencies would be remedied.[11] More-

over the manufacturer of consumer goods may be able to differentiate himself from his rivals by providing a better level of service to retailers.

A specialised form of market where service is extremely important is the rental market. A study of the television rental market by the present author found that 26 per cent of subscribers who had terminated their rental agreements had done so because of unsatisfactory servicing of their sets, and a further 15 per cent because the administrative service of the company was unsatisfactory.[12]

Finally, in 'service markets': hairdressing, banking, insurance, transport, etc, the concept of service is less straightforward, since in one sense, service is the product. However, a distinction can often be made between the primary and subsidiary services. The primary function of a garage may be to repair cars, but important subsidiary services may include the minimisation of the customer's waiting time when delivering and collecting the car, the availability of a breakdown service, the provision of credit, and prompt attention to complaints. In the transportation industry the primary service is the moving of objects from point *A* to *B*, but the reliability and speed with which they are moved will often be of the utmost importance. In their study of the freight transport industry Bayliss and Edwards[13] found that of the reasons given by firms for changing from rail to another mode of transport, slowness and delays accounted for 36 per cent and losses and damage for 27 per cent.

## PRODUCT DIFFERENTIATION AND PRICING

We have discussed the various elements of the marketing mix by which suppliers may differentiate their products. The cost-effectiveness of these elements is discussed in more detail in other volumes in this series. As far as pricing is concerned the present analysis has two major implications. First, as mentioned in Chapter 2, product differentiation has the general effect of impeding substitution and hence of increasing the pricing discretion of the individual supplier. Second, it is important that price should be consistent with the other elements of the marketing mix. For example to charge a low price

for a high-performance product having a prestige image would not only lead to a loss of potential profits but might be positively dangerous if it confused the consumer as to the true nature of the product.[14]

Having made these two points it must be recognised that for many consumers a trade-off will arise between price and some other element of the competitive mix such as service or product-quality. Moreover this trade-off may occur at different stages of the decision-process with price acting sometimes as a qualifying and sometimes as a determining factor. As indicated above Cunningham and Whyte found price to operate as a determining rather than a qualifying factor in machine tools. The work of Gabor and Granger, discussed in the following chapter, suggests that its role as a qualifying factor may be much more important in consumer markets.

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# Chapter 4

# The Price Awareness and Sensitivity of Consumers

The level of consumers' price awareness and their sensitivity to price have important implications for pricing policy. However, measurement in this area is seldom straightforward, and this chapter is mainly concerned with an evaluation of the various measurement techniques that are available and of the results that they have yielded.

## PRICE AWARENESS

We begin with a discussion of price awareness, which is the simpler of the two concepts and the more amenable to measurement by survey techniques.

### *Consumer Goods*

The authors of an early study commented on the 'remarkable dispersion' of price-awareness among different products.[1] The percentage of respondents claiming to remember the price of fifteen grocery products bought within the previous seven days ranged from ninety-five for tea and ninety-three for eggs to seventy for breakfast cereal and sixty-three for flour.

When, for seven products, the estimated prices were checked against the actual prices, the percentage of correct responses again varied considerably, from seventy-nine for tea to thirty-five for breakfast cereal.

These results suggest that some valuable data may be obtained

by elementary market research. But the data will, of course, be time-bound, and will be of least use in inflationary conditions. Indeed it appears that rapid inflation may leave consumers completely confused about price levels. A survey of 496 housewives undertaken in the United Kingdom for Harris International Marketing, in May 1974, revealed that only 15 per cent claimed to know the recommended price of most of the goods they bought, while 23 per cent were unaware of the recommended price of any of the goods. (A further 12 per cent who would not answer could also be presumed to have a low level of price-awareness.)

Temporary price reductions were doubtless one explanation of this situation, but it is reasonable to assume that inflation, then running at an annual rate of 15 per cent, was also partly responsible.

*Industrial Goods*

The belief that purchasers of industrial products are extremely price-aware was based on the assumption that the professional buyer whose livelihood might depend upon the soundness of his decision would ensure that he obtained all the relevant facts before reaching those decisions.

Recent research has cast some doubt on this proposition; it has shown that the buying process may be in one sense more complex and in another sense more simple than is suggested by the 'economic model'. It will be more complex when the purchase decision is influenced by other members of the firm in addition to 'the buyer'. Accountants, engineers, designers, etc. may all make their influence felt, either informally or formally,[2] and the price-awareness of some of these participants may be low.

On the other hand simplification arises when the search procedure is limited. In a study of purchases of certain standard machine tools,[3] Cunningham and Whyte found that in fifteen out of fifty-one purchase decisions only one supplier was considered, while in a further nineteen instances only two or three quotations were obtained. This in itself clearly implies a low level of price-awareness in a substantial proportion of the firms. But in addition it was found that the price information

that was used relating to previous supplies often dated back several years, and that price images were often derived from the general reputation of the suppliers rather than from data on price itself.

*Services*

There is no reason to believe that the diversity of price awareness that exists in respect of goods is not also to be found in services. In professional services, awareness may be affected by difficulties in defining 'the product'.[4] In other service markets there is evidence of low awareness on the part of some purchasers. For example Bayliss and Edwards[5] found that of 361 companies engaged in the purchase of freight transport services only 120 were aware of the prices of alternative modes of transport, and of these only ninety could actually quote prices. Again, Kettlewood[6] found that only twenty-three out of forty-three companies had obtained alternative quotations for freight transport services over the previous ten years.

## THE IMPLICATIONS OF PRICE AWARENESS FOR PRICING POLICY

As we noted above it may not be too costly to acquire data on the price awareness of the consumers of particular products. If the indication is that price awareness is high, then the firm will have to take great care to ensure that its prices are not out of line with competitive products. Furthermore any firm which feels that it has higher costs than its competitors will be wise to try to differentiate its product in order to blur consumers' price-awareness.

If low price-awareness is indicated, the firm will be less inhibited in raising prices. Following enquiries by a senior executive in the Shick Corporation, which revealed that 30 per cent of buyers thought that the price of twenty Shick injector blades was 98 cents, whereas the actual price was 73 cents, the price was subsequently raised to 98 cents, with 'satisfactory' results.[7]

However, it would be dangerous to assume that price could

always be raised with impunity in such situations, for there is evidence to suggest that, even where price-awareness is low overall, price rises may lead to a change of patronage even if the purchaser does not benefit financially thereby.[8]

An alternative reaction by producers to low price-awareness might be to increase awareness so as to be able to take advantage by undercutting rivals. Again some caution should be exercised, since competitors may retaliate, with the result that a general fall in prices follows: a fall that may be difficult to reverse, given the heightened price-awareness.

This is precisely what happened in the banking industry in Britain in the early 1970s. Following official encouragement to increased competition, and stimulated by vastly increased profits, the banks substantially reduced the price charged for various of their services, with persistent leapfrogging as each bank tried to underprice its rivals. And yet there was considerable evidence to suggest that the level of price-awareness among customers had previously been very low.

In the United States a local price war in the petrol market was followed by a considerable increase in price-awareness. The percentage of people able correctly to identify the price of petrol increased from forty-one to fifty-eight.[9]

To summarise, information on price-awareness may be a useful guide to marketing activity by indicating those products for which a policy involving a strong emphasis on price would be most, or least, appropriate. Moreover measures of current price-awareness can often be obtained relatively cheaply, using simple research tools.

Price-awareness is however only an imperfect indicator of price sensitivity and elasticity,[10] whose measurement normally requires more elaborate techniques.

## PRICE SENSITIVITY

Broadly speaking these techniques can be classified as those involving:

(i) the analysis of historical data not generated specifically for this purpose in the first instance;
(ii) price experimentation;

(iii) hypothetical shopping situations;
(iv) the analysis of data derived from informed opinion.

These four approaches are discussed in turn in the following sections.

*The Analysis of Historical Data*

The main problem in analysing historical data is that of disentangling the effects of changes in price from the remaining changes – in incomes, tastes etc. – that might also have occurred during the period studied.

The most usual method of overcoming this problem is the application of multiple regression analysis. The potentialities and deficiencies of this method are carefully evaluated by Professor Robinson.[11] Robinson also derives, using data from the U.K. National Food Survey for the years 1956–67, an estimate of −0·4 for the elasticity of demand for butter. This estimate compares with one of −0·3 for the years 1960–66 (National Food Survey Committee), and −0·4 for the years 1921–38 (Professor Stone).

Now while estimates of this kind may be useful for some purposes, including macro-economic planning, their usefulness for the individual firm will usually be limited, since they refer to the relationship between sales of the product as a whole and the overall, average, price. If one supplier were to vary his price, and this price change was not matched by his competitors, the elasticity of demand for his product would doubtless be much higher than indicated by these estimates. (But if the estimates are accepted by all suppliers, and if these suppliers are able – in one way or another – to co-ordinate their policies, the estimates may then become a useful guide to pricing policy.)

Of course the estimates may not be as stable or reliable as they appear to be for butter. This could be due to various factors, including the inadequacy of the data, and changes in economic circumstances. Ten estimates of the price elasticity for cars in the United States in the post-war period produced figures ranging from −0·6 to −1·4.[12]

These two estimates could clearly have very different implications for price policies, although as it happens in this instance the difference might not have been material. Clare Griffin has

estimated that given the typical cost structure of U.S. car manufacturers, price reductions would be profitable only if elasticity were −4·5 or above.[13]

The remaining three methods are all designed to provide information about the response of consumers to price changes by individual firms, and hence to give more direct guidance for pricing policies.

*Price Experimentation*

The supplier of well established products may reduce the price for a limited period of time in order to compare sales during this period with previous and subsequent periods. It is of course necessary to ensure as far as possible that normal trading conditions prevail during the experimental period. For example a period should be chosen which minimises any seasonal influences. The price reduction should not be promoted by the manufacturer as a 'special offer'. These factors are within the firm's control. However, in other respects control may be more difficult.

First, even if the price reduction is not promoted, consumers may see it as a promotion and hence may increase their purchasing rate above the long-term level. Conversely, when price rises again, the reduction in sales may be greater in the short than in the long run (partly because of the earlier build-up of consumers' stocks).

Second, problems may arise with distributors. Under normal commercial practice a reduced retail price would imply reduced absolute margins for distributors. Given that the price reduction was temporary the manufacturer might feel obliged to maintain these margins at their previous level in order to protect goodwill. However, in so far as the margin offered may influence distributors' willingness to promote this product or brand at the expense of competitive products, the behaviour of retailers during the experimental period might differ from that where price and margins were permanently reduced. (The extreme reaction is where distributors refuse to stock products whose margins are considered to be unsatisfactory.)

A third problem may arise from the activities of competitors. Many consumer markets are characterised by frequent changes

in competitive activity: price reductions, advertising campaigns, competitions, etc., one or more of which may occur during the experimental period. In such circumstances the results obtained might be very suspect.

One way of reducing the possibility of invalidation from this source is to vary prices on a regional basis. This may give a better indication of price elasticity provided that (*a*) competitors are not differentiating their activity regionally and (*b*) consumers in different regions do not differ greatly in their response to price changes.

Despite the problems which may arise in obtaining a satisfactory experimental framework successful experiments have been reported in the literature (and many more are no doubt contained in company files). Joel Dean[14] quotes the results of several experiments which yielded useful information. The first concerned the Parker Pen Co. which was selling Quink ink at 15 cents, a price which was comparable to other inks but which yielded Parker a loss. The experiment consisted of increasing the price to 25 cents in a sample of outlets and comparing sales in these and other outlets. At the higher price a slight sales loss was experienced, but revenue and profitability were significantly improved. The wisdom of Parker's move was subsequently confirmed when several competitors followed the price increase.

This experiment has been widely reported, presumably because it is one of the few instances where so great an increase in price proved viable. It is however important to note the conditions obtaining in this particular instance.

First, the higher priced ink was marketed as New Quink, with the implication of a new formulation. This impression was strengthened by the fact that in some outlets the newly packaged product was sold side-by-side with the old, so that the consumer appeared to have a choice between alternative price/quality combinations. Second it proved easy to obtain the co-operation of retailers, since the higher price entailed more satisfactory margins for them. Finally, the possibility that Parker would be the only firm to increase the price, with the concomitant danger of a loss of sales to the other suppliers, was reduced by the fact that margins in the industry were presumed to be generally unsatisfactory, so that matching price increases by competitors could be anticipated.

Another experiment reported by Dean was designed to identify the extent to which a price premium could be justified on the basis of a brand name. Identical mattresses, some bearing the Simmons brand and others an unknown brand, were offered for sale at different price differentials. When prices were equal the Simmons brand outsold the unknown brand fifteen to one, whereas when the Simmons brand was sold at a 25 per cent premium sales were equal.

Price experimentation may take place before a new product is marketed. For example when the 'Princess' telephone was introduced in the United States, the manufacturers set different prices in different test areas: an installation charge of $8·50 plus a monthly charge of 65 cents, and an installation charge of $29·50 plus a monthly charge of 50 cents. The former price, appearing to be more acceptable to consumers, was adopted as the basis for the company's national pricing policy.

A controlled experiment which used more complex statistical techniques was undertaken in the United States by R. H. Whitman for Macy's department store.[15] Macy's changed their prices over a wide range for a number of products, and the relationship between price and sales was identified by means of correlation analysis. For many of the products analysed Whitman found a price elasticity of demand of around (minus) six, which implies of course that sales would respond dramatically to price reductions.

However, the very fact that such high elasticities were derived suggests that the results should be treated with extreme caution. It seems highly probable that some of the increase in sales represented an advance of purchases by consumers, in order to take advantage of price reductions which were (correctly) judged to be temporary.

Futhermore once a store has developed a certain position in the market this will itself influence consumers' behaviour. As already indicated price reductions below the level usually associated with the store will be seen simply as bargains; but if a widespread programme of reductions becomes part of the company's normal policy it is likely that the store's image will change, and this might well lead to a loss of custom, even if the new image involves lower prices.

Finally, while competitors might be content to stand back

during what they considered to be a temporary, experimental, change in policy, they would be unlikely to do so if this policy became permanent and took sales away from them.

Consequently it would be unrealistic to look upon experiments such as Whitman's as more than a guide to short-term pricing policies, an indicator of the products which are likely to respond most readily to promotional price reductions. This conclusion would remain true however sophisticated the mathematical or statistical techniques used.

### *Hypothetical Shopping Situations*

An alternative approach which avoids some of the problems associated with price experimentation is to utilise a hypothetical shopping situation. This involves asking potential customers whether or not they would be likely to buy a product or brand at different prices. If the product is familiar to consumers, it may simply be named. If it is not, the consumer may be given a verbal or pictorial description or, more rarely, shown the actual product.

Many of the earlier studies of this type have been heavily criticised on various grounds including the small sample size, and the fact that a choice which does not involve the consumer in any monetary cost is quite different from one that does. In particular it is pointed out that very few consumers, faced with a choice between two prices for a *given, specified, brand,* would say that they would pay the higher price.

It would seem in fact that this method is most useful in indicating how many people who are currently non-users of that brand might be persuaded by a lower price to try the brand. It might also give an indication of the extent to which consumers who currently purchase two or more brands might modify their purchasing patterns.

However, a wider applicability has been claimed for more recent applications of this approach, and they would certainly seem to meet some of the criticisms noted above, in that they have (*a*) used large samples, (*b*) not tied the questions to specific brands, and (*c*) utilised sophisticated statistical analysis.

The most interesting results have emerged from work undertaken by the Nottingham University Consumer Group, headed

by A. Gabor and C. W. J. Granger. They were initially stimulated by studies undertaken in France by Stoetzel and Adam which suggested that many consumers have a range of prices within which they would be willing to buy a product (at least on a trial basis) and that the lower limit to the range is heavily influenced by the feeling that the price charged for a product is an indicator of its quality. These ideas have proved especially fertile when applied not to a particular brand, but to the entire market for a product, such as toilet soap or nylon stockings. The basic approach is as follows.

A large (preferably at least 1000), representative sample of people are asked whether they would buy the product at a given price, $P$. Those who reply in the negative are asked whether this is because the price is too low or too high. On the basis of the answers to these two questions the sample can be split into three groups: those who answer 'Yes', designated $B(P)$, those who answer 'No, too cheap' $L(P)$, and those who answer 'No, too expensive' $H(P)$.

By quoting different prices to different respondents information can be obtained on the relative acceptability of various prices. Gabor and Granger found striking similarities in the pattern of responses in respect of the various products, with a tendency for the positive 'buy', responses, $B(P)$, to be normally distributed.

An alternative method, which was adopted by Stoetzel and Adam, involves directly asking the consumer to name the two limits, that is to say the highest and the lowest price at which she would buy. The advantage of this method is that both limits are identified for each consumer, whereas this may not be possible with the alternative method, since it is considered advisable to limit the number of prices called out. This means a considerably smaller sample will be needed to yield a given volume of data.

However, this second method is the less realistic, first in suggesting to the consumer a concept (alternative limits) which might not have been consciously present in her mind, and second in that it resembles the actual shopping situation less closely.

The application of statistical theory suggests that all buy response curves are essentially identical, and that a generic

'norm curve' can be derived which closely approximates to the log-normal curve in its central part (Figure 4.1).

It should be emphasised that the buy response curve is *not* a demand curve. While it shows the propensity of consumers to buy at various prices, it does not say anything about how many articles each consumer would buy at each price. It might be

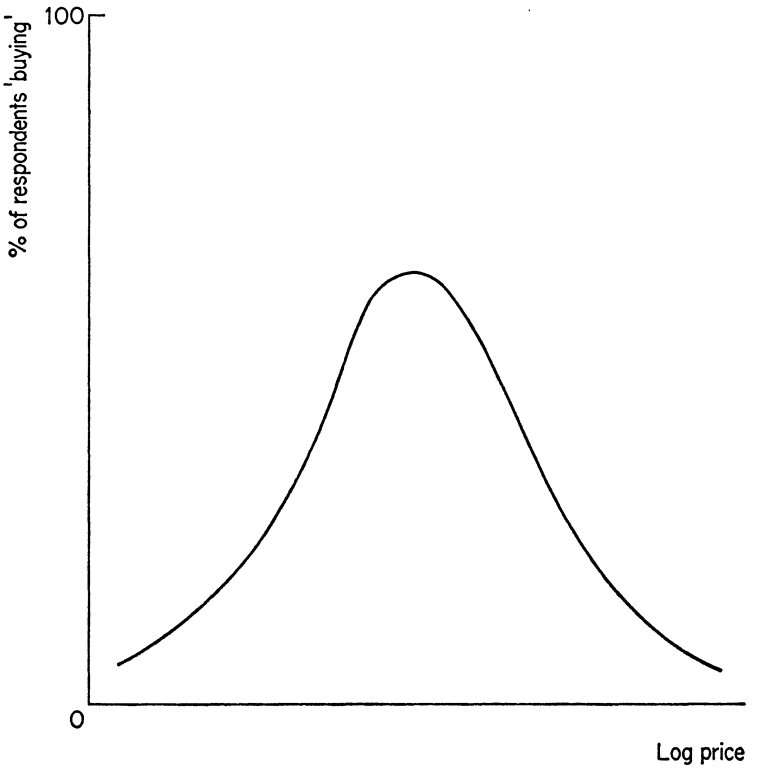


Figure 4.1

that in a given time period, the average number of purchases per buyer would be more at lower than at higher prices. Even allowing for this fact it is clear that there is a point beyond which a reduction in price would lead to a fall in demand, and there is a strong presumption that this is due to the fact that consumers see price as an indicator of quality.[16]

While this is an interesting finding, and may give some

guidance to pricing executives, for example in drawing attention to the potential dangers in price reductions, more precise guidance requires a comparison to be made between the buy response curve and the curve showing the distribution of prices last paid by these consumers.[17] The diagrams below illustrate some relationships which might be found.[18]

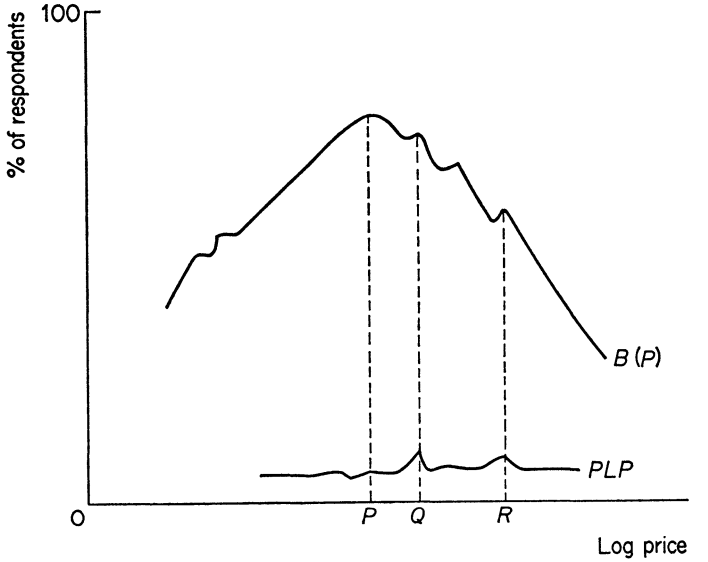


Figure 4.2

$B(P)$ = percentage of respondents indicating willingness to buy at a given price.
$PLP$ = percentage of respondents who last paid a given price.

There would be a strong presumption in the situation represented in Figure 4.2. that many consumers considered that the articles that they last bought were overpriced in the sense that they would not have distrusted the quality of cheaper articles, priced at, say, $P$, rather than $Q$ or $R$. The fact that relatively few consumers did buy the brands that were available at price $P$ must have been due to some factor, other than price, specific to these brands. (An analysis of the factors that differentiated these brands from competitive brands might be valuable in

indicating what should be avoided if a new cheaper brand were to be introduced.)

Of course the shape of the price last paid curve would be strongly influenced by the existing price structure, and this structure might well become de-stabilised by the successful introduction of a cheaper brand. The gains to be obtained from such a policy might, therefore, prove to be short-lived if the prices of competitive brands were reduced. However, in the markets for repeat-purchase, mass-consumption products, to which this method has been mainly confined to date, short-lived gains are often the only gains which are to be expected!

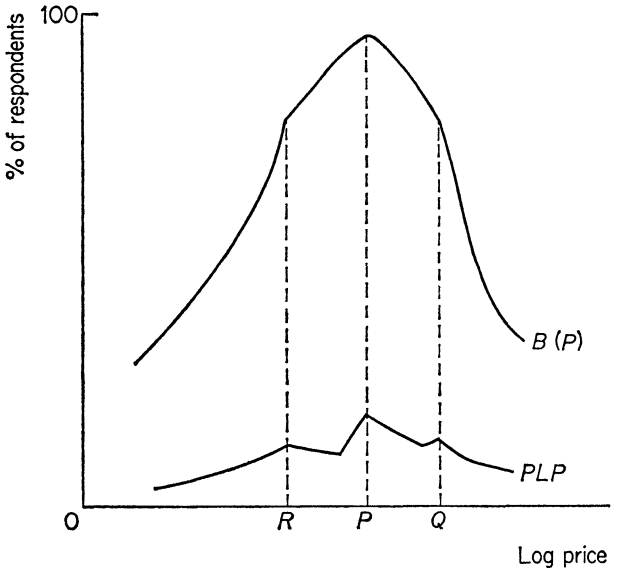


Figure 4.3

$B(P)$ = percentage of respondents indicating willingness to buy at a given price.

$PLP$ = percentage of respondents who last paid a given price.

A pattern such as that in Figure 4.3 would suggest that the structure of prices in this market was felt to be equitable, with the peaks of the $B(P)$ and the $P$–$L$–$P$ curves coinciding at price $P$. Moreover the range of prices which are likely to be

consistent with a high market share is fairly narrow: 80 per cent of consumers would buy at prices within the range *R–Q*, the percentage falling off steeply beyond these two prices.

If a potential entrant were interested in maximising volume, he might be tempted to enter at price *P*, the price acceptable to the highest proportion of consumers. However, it should be noted that this is also the price at which the market is most 'crowded', in terms of the price most frequently paid. Therefore prices *R* or *Q* might be preferable. Moreover even if *P* were the volume maximising price, it does not follow that it would also maximise profits. Indeed it is quite likely that *Q*'s higher margins would be accompanied by higher profits overall.

Faced with this same data the supplier of an existing brand, presently priced at *P*, might be tempted to raise his price to *Q*. However, he might run up against the problems associated with a price increase which we discussed above. The effect of changing price differentials on market shares has in fact also been investigated by the Nottingham Group, mainly with regard to those products where a high proportion of sales is accounted for by a few, very well established brands.[19]

As we mentioned above, Gabor and Granger have claimed that the greater degree of rigour which they have introduced widens the applicability of this technique. Attention has already been drawn to certain inherent problems in application, for example the difficulty of predicting and allowing for competitive responses. In addition the basic assumption underlying the approach, that is to say the hypothesized relationship between price and perceived quality, has been challenged. Gardner[20] found little support for such a relationship when cues to quality other than price exist. Monroe,[21] summarising previous research, concluded that 'Findings on the price–quality relationship are mixed, although there are some indications that a positive relationship exists, at least over some range of prices for some product categories. Implications of the price–quality relationship on the shape of the demand curve are inconclusive.'

One should also note that the brand share model developed by Gabor, Granger and Sowter, mentioned above, assumes that for well established brands a low price will not be a deterrent to purchasing.

Overall then, it appears that while the hypothetical shopping

approach has generated extremely valuable data in some markets,[22] the approach must be used with caution and discrimination. (In this it is, of course, no different from any other market-research technique.)

*Two Comparative Studies* Two studies are especially interesting in that they compare the results yielded by different approaches. Stout[23] estimated the percentage change in sales that would follow from a 1 per cent change in the prices of four grocery products using an in-store experiment, a simulated shopping situation (a motorised van mock-up), and a hypothetical shopping situation (i.e. personal interviews). In the store experiment all four products exhibited a negative price–quantity relationship, whereas in the simulation only three products, and in the personal interviews only two products, did so. Moreover the statistical *t*-test showed that only the relationships derived from the store experiment were stable.

As part of their development of the brand-share model, referred to above, the Nottingham Group found that the hypothetical and in-store methods gave similar results when the brands were closely competitive, but not in other situations.[24]

The only well-documented report of the application of the hypothetical approach to *industrial products* is the study by Buckner referred to above. Two points are of particular interest here. First, whereas 40 per cent of purchasing personnel indicated that they would be willing to switch suppliers in response to price differentials within the range 1 to 9 per cent, only 14 per cent would do so if the differential were more than 10 per cent, indicating a perceived price–quality relationship. Second, as already noted in the section on price-awareness, different members of the purchasing team attached greatly differing significance to price, a factor which makes the survey approach less appropriate for such products.

### *The Analysis of Data Derived from Informed Opinion*

Perhaps the main advantage of the hypothetical over the in-store experimental method is its lower cost. A way of further reducing the cost of data collection is by seeking the views of people who are in contact with consumers: wholesalers, retailers, or

the manufacturer's own staff. By reducing the size of the sample, and by utilising data which already exists (albeit not formally documented) within the firm, the cost of data collection is reduced.

However, difficulties may arise in the interpretation of the data so obtained. A retailer may not wish to stock an additional product and hence, in an attempt to dissuade the manufacturer from producing, he may suggest that the product would sell only at an unrealistically low price. Conversely if the retailer wished to encourage the manufacturer to produce, he might suggest a higher price, not only because this would imply that the prospective returns to the manufacturer would be high, but also because a higher price would entail a higher margin for the retailer.

Again the manufacturer's sales staff would be strongly tempted to suggest that a low price would be desirable, if they felt that this would help them to shift the product.

Despite the fact that the information obtained from these sources should be treated with caution, this does not imply that it cannot be utilised. Indeed if no historic data is available (as for instance for a new or recently introduced product) and if test marketing is not feasible, this method may be the best alternative to proceeding by guesswork.

Bayesian decision theory is concerned with the utilisation, in a highly formalised manner, of data which is not 'hard', that is to say which is highly subjective. The basis of the approach is to attach probabilities to a range of possible outcomes, such as the volume of sales at given prices. If one can draw on the experience of different people then the probabilities which finally emerge can be seen as the best guess of 'informed opinion'.[25]

Some highly elaborate models have been developed by which the possible outcomes of a series of interconnected events can be explored. For example a price reduction by one manufacturer may lead to an increase in his sales; this may cause rival manufacturers to reduce their prices; the price reductions may cause plans to increase capacity to be modified, and so forth. Probabilities are attached to various outcomes at each stage of this process, and so a series of joint probabilities is derived.

Clearly the more stages there are, the greater will be the number of possible final outcomes. In the case considered by Green in the above study more than 400 stemmed from an initial four alternative prices. The probabilities attached to those final outcomes (which may be expressed in terms of sales or profits) stemming from each initial price are combined to give an expected pay-off from that price. A comparison of the pay-offs indicates which price is likely to be the most profitable.

The processing of the data contained in these elaborate models is feasible only with the aid of a computer, so that again the cost–benefit relationship is an important consideration. On the benefits to be derived from the technique we can do no better than quote Professor Green, a pioneer in this area of research: 'Good decision making is not a case of replacing managerial judgment by marketing research "facts", but augmenting it by objective analysis. Bayesian decision theory can enable the executive to marshal these judgments systematically and trace through their implications. The question of whether the invocation of such "consistent" procedures helps or hinders the decision process is still moot.'[26]

## FURTHER READING

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# Chapter 5

# Costs and Prices: Some Additional Considerations

In putting forward the simple models of price determination in Chapter 2 we suggested that cost is an important determinant of basic price. We saw that the relationship between cost and price might differ from market to market (and indeed between firms supplying a given market) in accordance with the state of demand, the structure of the market, and the objectives of firms. However, we continued to talk in terms of a single price being charged by a firm at any given time to all its customers.[1]

It is now time to relax this assumption, to recognise that a firm's price structure may be far more complex than indicated so far, and to explore the factors which the firm should take into account in determining its structure. In this chapter we consider the first of these factors, the likely behaviour of costs in response to a change in the level of output.

## THE BEHAVIOUR OF COSTS IN RESPONSE TO CHANGES IN OUTPUT

We have already made the distinction in Chapter 2 between those costs which do and those which do not change as the level of output changes. The significance of this distinction for pricing policy is discussed in great detail in a number of books.[2] However, we can demonstrate the main principles involved by means of a couple of relatively short case studies.

### *The Dove Rubber Company*[3]

The Dove Rubber Co. is a large multi-product company mainly

engaged in the industrial goods market. In order to counteract a fall in the demand for its traditional products, the company introduced a new toy 'Bouncing Donkey' for sale through toy shops. Its existing production capacity was sufficient for an output of 20,000 units a year; in the first year sales were well below expectations at 2000 units. Average cost at this level of output was calculated as follows:

| | |
|---|---|
| Labour | £1·50 |
| Materials | £0·70 |
| Selling | £1·90 |
| Distribution | £0·10 |
| | £4·20 |

Since the selling price to the retailer was £4, the situation was clearly most unsatisfactory. Moreover although the costs of the selling and distribution facilities which had been established solely in connection with the new product were included, no allowance had been made for the use of other, existing, administrative facilities: nor was a depreciation charge levied.

However, there was considerable evidence to suggest that the main impediment to a much higher level of sales was the price of the Bouncing Donkey which was priced to the retailer at £1 above competitive, albeit poorer quality, products. Market research suggested that if this competitive price of £3 could be matched, sales of 20,000 could be expected, while 8000 units might be obtained at an intermediate price of £3·50. If the price of £4 was maintained, it was unlikely that sales would exceed 2500 units a year.

Estimates of costs at these three output levels were:

*Labour:* the production director believed that the existing labour force working on this product was underemployed, and that an extra 500 units a year could be produced with no increase in total direct labour costs. However, at higher levels of output additional workers would be required, and in view of the uncertainty concerning the quality of the new labour and the degree of training required, it would be prudent to assume that labour costs per unit would be at the same level as at present (i.e. at an output of 2000 units).

*Materials:* the chief purchasing officer thought that he would

be able to obtain a reduction, in the form of a quantity discount, of 5 per cent of present prices with an output of 8000 units and above.

*Selling:* it was believed that the present, rather rudimentary, selling organisation would be able to cope with sales of up to 10,000 units a year, but that higher levels would require these facilities to be duplicated, causing annual costs to rise from £3800 to £7600.

*Distribution:* it was estimated that up to an output of around 10,000 units the increase in distribution costs would match the increase in the volume of sales; thereafter more expensive facilities would be required which would cause costs to rise faster than sales, so that unit costs would increase by 50 per cent with sales at 20,000 units.

Putting together this data gives the cost estimate presented in Table 5.1.

Table 5.1

| | *Output (units per annum)* | | |
|---|---|---|---|
| | *2500* | *8000* | *20,000* |
| Cost per unit: | | | |
| Labour | £1·20 | £1·50 | £1·50 |
| Materials | £0·70 | £0·66½ | £0·66½ |
| Selling | £1·52 | £0·47½ | £0·38 |
| Distribution | £0·10 | £0·10 | £0·15 |
| Total specific cost | £3·52 | £2·74 | £2·69½ |
| Price | £4·00 | £3·50 | £3·00 |
| Profit per unit | £0·48 | £0·76 | £0·30½ |
| Total profit | £1200 | £6080 | £6100 |

Taking into account the likely behaviour of costs as output changes, we see that prices which would have seemed completely unrealistic at the level of costs pertaining at an output of 2000 units can in fact yield profits.

It should be noted that these profit figures have emerged from a comparison of revenue with those costs which have been specifically incurred in the manufacture and sale of the new product. No allowance has been made for depreciation and administration charges.

Now given the fact that even with annual sales of 20,000 units the Bouncing Donkey would account for only a very small part of Dove's total turnover, and given that the firm has excess capacity, it is reasonable to assume that the total depreciation and administration charges will not be affected by the production of the Bouncing Donkey.

It does not follow that all members of the firm will see things in that light. The managers responsible for the profitability of other products can be expected to exert pressure for the new product to take its 'fair share' of depreciation and administration charges, that is, for an absorption costing to be applied to these products.

*Absorption Costing*

The interpretation of a fair share will no doubt differ among different members of the firm, especially in view of the diversity of methods of overhead cost allocation which exists.[4] For the sake of simplicity, let us assume that the basis of allocation adopted by Dove is a constant charge per unit of output, 20p for depreciation and 30p for administration. Profitability figures recalculated on this basis are presented in Table 5.2.

Table 5.2

| | *Output (units per Annum)* | | |
|---|---|---|---|
| | *2500* | *8000* | *20,000* |
| Cost per unit: | | | |
| Specific Cost (from Table 5.1) | £3·52 | £2·74 | £2·69½ |
| Depreciation | £0·20 | £0·20 | £0·20 |
| Administration | £0·30 | £0·30 | £0·30 |
| Total | £4·02 | £3·24 | £3·19½ |
| Price | £4·00 | £3·50 | £3·00 |
| Profit (loss) per unit | (£0·02) | £0·26 | (£0·19½) |
| Total profit (loss) | (£50) | £2080 | (£3900) |

The ranking of the three alternatives is changed dramatically. A price of £3·50 is now the most profitable while £3, which was previously marginally preferable, now appears likely to generate the heaviest loss.

Furthermore it is clear that there is a level of central charges

such that no price would have appeared to be profitable. In those circumstances the company might have decided not to enter the new market. Similarly if it had entered on a specific cost basis, and this was subsequently changed to a total ('fair shares') basis, it might decide to withdraw. And yet we have seen that such a decision would cause the firm to forego additional profits as measured by the excess of revenue over specific costs.

*The Contribution Approach* The possibility of missed opportunities, together with the impossibility of deriving a uniquely correct basis for the allocation of non-specific costs, are the main criticisms levied at the full cost or absorption-costing approach.[5] The alternative system advocated by these critics is the direct costing or contribution approach.

As the term suggests, direct costs are those that can be directly attributable to a particular product. This is clearly a similar concept to specific costs, as used above. In fact we used specific rather than direct costs because in this instance they included selling and distribution costs, whereas these would usually be excluded from the calculation of direct costs. Separate selling and distribution facilities were needed in this instance because the company was moving into a different type of market: consumer as opposed to industrial. Had the new product been an industrial product requiring no additional selling or distribution facilities the charge for such facilities could have been excluded from our calculation, along with depreciation and administration costs.[6]

*Absorption and Contribution Approaches Compared* We showed above that the contribution approach was the more likely to lead to the setting of a price which maximised profits (revenue minus specific costs). However, this conclusion depended upon the existence of facilities which would otherwise have remained idle, owing to the downturn in the firm's traditional markets. It may be that in the future these markets will revive; if in the meantime the spare productive facilities have become utilised in making a new product, the firm will not be able to meet the increased demand for the established products. In these circumstances the loss of any profit that could have been earned

from other products should be included as a *cost* (the opportunity cost) of supplying the new product.

The problem is of course that one cannot anticipate with any reasonable degree of certainty what the level of opportunity cost will be, and accountants are reluctant to include any cost which cannot be quantified. Given this degree of uncertainty absorption costing can be seen as a rather crude alternative, as a method of imposing a charge for the use of facilities which may have alternative uses, in the future if not at present. Absorption costing may then be justified, not on the grounds of equity but as a rationing device.

The fact that if the demand for its traditional products did not revive, Dove might be able to reduce its capacity, would be a further argument for imposing a charge for the use of the facilities retained, a charge which should again be covered by the revenue from the new product.

In the more general debate concerning the merit of contribution pricing, the same basic arguments as were applied to the above cases are deployed. On the one hand it is claimed that it avoids the allocating of non-specific costs by methods which have no logical justification (and which, incidentally, may be very time-consuming) and which may lead to higher prices than the market can stand. In defence of absorption costing it is claimed that it ensures that all costs are covered, whereas contribution costing might lead to prices at which the company would fail to cover its costs and make the profit it requires.

Each side advocates its case with considerable conviction and enthusiasm.[7] Despite the passion that the debate generates, one sometimes has the feeling that there is a certain amount of shadow boxing and that the contestants may have more in common than perhaps appears.

The point is that although, as we have shown, to base price on full cost on the one hand and on direct (or specific) cost on the other may lead to different prices in specific instances, this need not always be so. In particular there is no presumption that prices set on a full cost basis will be necessarily higher than those set on a contribution basis, since the (profit) margin set over direct costs may be considerably higher than that set over full costs.

If we relate this back to the Dove Company, we can illustrate

this point by reference to the price of £3, which is expected to generate sales of 20,000 units. The relevant figures from Tables 5.1 and 5.2 are combined in Table 5.3.

Table 5.3

| | |
|---|---|
| Cost per unit: | |
| Specific cost | £2·69½ |
| Non-specific cost | £0·50 |
| Total, full-cost | £3·19½ |
| Profit (loss) per unit: | |
| Full cost | (£0·19½) |
| Specific cost | £0·30½ |

On the basis of this comparison we concluded that a price of £3 would be acceptable under a contribution, but not a full-cost approach. However, if the margins expected were, say, 10p a unit under full cost and 40p a unit under contribution, a price of £3 would be unacceptable in both cases.

It appears that no clear distinction can be made between these two alternative procedures in terms of any *inherent* tendency for one or the other to generate more profitable business. Any difference is likely to arise from the implementation of the procedures, and the crucial question is whether *as a matter of fact* one procedure is more likely than the other to lead the firm to make the most appropriate response to market conditions.

There is a strong presumption that contribution pricing will be more conducive to downward movements in price below the target level since the cost base is lower, and there may be less resistance to an erosion in the target margin than to setting a price below the cost base itself.[8]

Whether this greater flexibility is desirable depends upon a whole host of factors:

(i) The reactions of consumers to price cuts. If consumers see price as an indicator of quality, a price-cut may be detrimental to sales. In other instances the rise in sales may not be sufficient to compensate for the lower price. Barback quotes a lace manufacturer to the effect that 'It is no good trying to create business by price changes.

The demand is either there or not, and if you lower the price it is very difficult to raise it again when trade improves.'[9]

(ii) The reactions of competitors will clearly affect the demand elasticity. These reactions may be influenced by, among other things, their views of demand elasticity, their liquidity position, the relative importance of price in their marketing mix, and whether they are aware of the initial price reduction.

(iii) The length of time during which market conditions are expected to remain depressed. If the market is likely soon to revive it might be preferable to maintain prices because of the problems of raising prices, referred to above.

(iv) The rate of technological change in the industry. If the market is one subject to rapid innovation and the introduction of new products then it becomes appropriate to adopt a shorter time horizon in respect of existing products, to maximise short-run profits without too much heed to longer run considerations. (Note that if innovation has a high fashion element the goods may have low price-elasticities.)

(v) The costs that are involved in changing prices. These will normally be greater the greater the number and the wider the variety of the outlets through which the product is sold.

Finally, it should be noted that even in those circumstances where downward flexibility might generally be inappropriate, selective flexibility, that is to say the reduction of the prices of some of the company's products, or for some of its customers, might be desirable.

### *Incremental Analysis: Precision Instruments Ltd*

To illustrate this point we introduce another mythical company, Precision Instruments Ltd. In analysing the pricing decision made by this company we make use of the concept of incremental cost, which is simply the additional cost that would be incurred in increasing output by a given amount, that is, the amount to which the particular decision refers.[10]

From the above definition it will be clear that only specific costs will enter into incremental cost, unless of course the decision refers to an increase in output of more than one product.

The decision to be considered here arose from an enquiry to Precision Instruments, a manufacturer of desk calculators, from an overseas country. Until now Precision had confined its activities to the domestic market, with a normal rate of production of 250 units a month at a cost of £30,000 (£120 a unit). These calculators were sold through a limited number of dealers at a price of £150.

The overseas company offered to buy 600 calculators over a six-month period at a price of £100. In terms of the firm's current cost levels it appeared that the new business could be supplied only at a loss. But it was found that Precision could increase its rate of output to 350 units a month, at which the total cost would be £38,500. The average unit cost at £110 remains above the price offered, and a full-cost approach would still suggest that the order would produce a loss.

However, an incremental cost approach yields a different picture. Table 5.4 compares the situation (*a*) if the order is not taken and (*b*) if it is taken.

Table 5.4

| | *No. produced* | *Total cost* | *Price* | *Revenue* | *Profit* |
|---|---|---|---|---|---|
| (*a*) | 250 | £30,000 | £150 | £37,500 | £7500 |
| (*b*) | 350 | £38,500 | 250 at £150 | £37,500 | |
| | | | 100 at £100 | £10,000 | |
| | | | | £47,500 | £9000 |

The additional revenue (£10,000) exceeds the incremental cost (£8500) to give an increase in profit of £1500 a month. If the firm wishes to increase its absolute profits then the order should be taken. Again an objective of maximising the rate of return on capital employed would probably be met by taking the order, since it is most unlikely that capital employed would increase in the same proportion as profits, given that the capacity of the firm is unchanged. An objective of higher sales would also imply that the order should be taken.

In fact we have here a fairly straightforward example of

incremental analysis. Let us now introduce a complication which often arises in connection with such decisions. If the foreign distributor insisted that the order should be fulfilled within three months then it would displace some of the 'normal' production. For each of these three months 200 units would be produced for export and only 150 units for the home market. The firm would then have to try to evaluate the consequences of this situation.

One possibility is that any domestic orders not fulfilled during these three months are lost. The situation in each of these months would then be as in Table 5.5.

Table 5.5

| *No. produced* | *Total cost* | *Price* | *Revenue* | *Profit* |
|---|---|---|---|---|
| 350 | £38,500 | 150 at £150 | £22,500 | |
| | | 200 at £100 | £20,000 | |
| | | | £42,500 | £5,000 |

The displacement of higher- by lower-price orders has led to a reduction in profit. The incremental revenue of £5000 is less than the incremental cost of £8500.

Of course other, less pessimistic, outcomes are possible. Domestic customers might be willing to accept some delay in meeting their orders, a possibility that Precision might be able to explore before coming to a decision on the new order. In other instances it may be impossible to resolve the uncertainty: for example one cannot quantify the loss of goodwill which may result from a delay in supplies. However, uncertainty must be accepted as a fact of life. Its existence does not weaken the case for use of incremental analysis.

Another very important feature of the Precision case is the fact that the two markets into which the company would be selling were separated geographically. It is of course important to ensure that separation of one form or another, most usually by space or time, does exist, since, in the absence of separation, there may be a danger that the low-price buyer will enter the high-price market, undercutting the original supplier.

Another danger which would be minimised here is that buyers at the higher price might recognise that other customers have

been treated more favourably. This may at best lead to some loss of goodwill and at worst to pressure for price reductions so as to ensure equality of treatment in future transactions. These principles, and others underlying the operation of a successful differential pricing system are further developed in the next chapter.

## FURTHER READING

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# Chapter 6

# Differential Pricing

Differential pricing is the charging of different prices for identical goods or services when supplied at different times and/or to different customers.[1]

## DIFFERENTIAL PRICING AND PROFITABILITY

As indicated in the Precision Instrument case differential pricing may enable profits to be increased when the firm is supplying different markets which are clearly separated. A second condition, which was implicit in the analysis, is that the elasticity of demand in the two markets shall differ.

In Precision Instruments the increased profit came about via an increase in sales, and this is a situation to which we return below. First, however, we shall show that, if these two conditions are fulfilled, differential prices will yield higher profits than common prices, from a given level of output.

In Figure 6.1 we start from a situation where the firm sets the same price, $0P$, in both markets. In order to simplify the analysis we assume that at this price sales in both markets are identical, at $0Q$. The firm now introduces a price differential, raising the price in market $B$, where demand is inelastic, and reducing the price in market $A$, where demand is elastic, so that the total quantity sold remains the same (i.e. the reduction from $Q$ to $Q_B$ equals the increase from $Q$ to $Q_A$). In market $B$ the change in revenue is $P_BCEP$ minus $EDQQ_B$. In market $A$ the change in revenue is $FGQ_AQ$ minus $PDFP_A$. In both markets revenue is increased, although total output, and hence total cost, is unchanged.

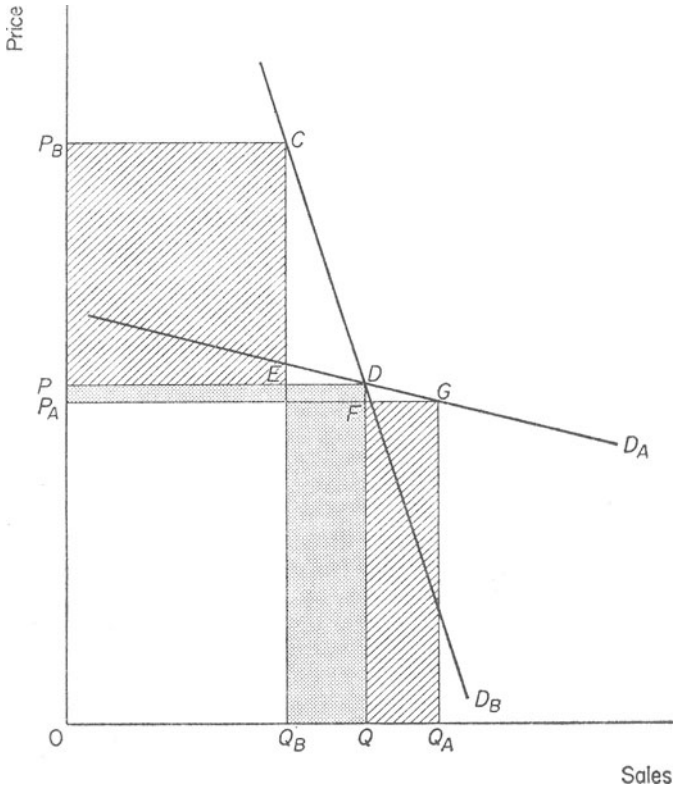


Figure 6.1

Turning now to the situation where an increase in output is feasible (Figure 6.2) we again start by assuming that price and quantity are identical in the two markets. We make the further simplifying assumption that within the price range $P$–$P_L$ demand is elastic in $A$ and inelastic in $B$. If the firm's objective is to increase sales revenue, it should reduce price in $A$, but not in $B$.[2]

This basic analysis can be applied to pricing in all those instances where a firm is able to subdivide its market. We now consider in turn each of the main bases for subdivision, beginning with the basis illustrated by the Precision Instruments case.

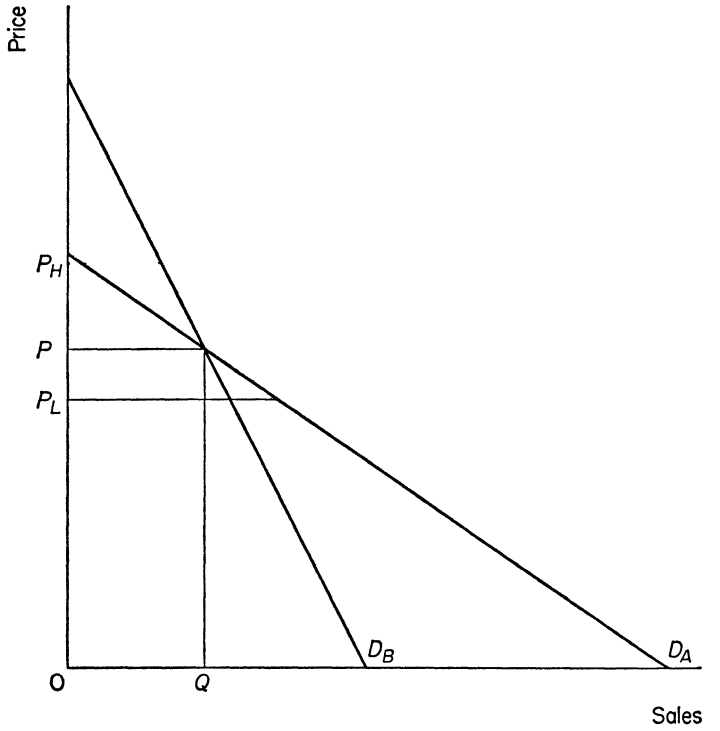


Figure 6.2

## THE SUBDIVISION OF MARKETS BY SPACE

Looking first at pricing in domestic markets, it is clear that the scope for geographical price differentials is likely to be greater in large than in small countries. Where geographical differentials are feasible, a firm may choose to operate one of a number of alternative pricing systems.

### *F.o.b. Origin, Ex-works*

When a product is sold f.o.b. (free on board) origin, f.o.b. mill, or ex-works, the buyer is responsible for choosing and paying for transportation, that is to say no geographical price differential is imposed by the supplier. However, the total cost to the

buyer will differ in accordance with his distance from the plant, and hence it will be more difficult to sell in distant areas (unless all suppliers are located in the same area and adopt the same system). If, in order to increase sales in these areas, the f.o.b. price is lowered, then of course the firm may extract less than it could from those customers nearer to his plant.

Similarly if the firm attempts to differentiate its product in order to counteract the price advantage of suppliers located nearer to these distant customers, greater costs may be incurred than are necessary to win sales in the easier 'home' markets.

Hence firms with aggressive marketing objectives may find f.o.b. pricing inappropriate. Conversely if firms are happier to 'live and let live', their objectives may be facilitated by an f.o.b. policy.

Other advantages of this policy may include less uncertainty in budgeting through being able to relate sales volume directly to revenue and profit margins, and a simplification of procedures in that the manufacturer no longer has the responsibility for transportation.

Companies for whom these considerations are less important and who are more interested in expanding than stabilising their share of the market, may opt for a delivered-price system, of which there are a number of variants.

*Single-zone Delivered Price*

In this, the simplest form of delivered-price system, the manufacturer quotes a price, inclusive of transport, which does not vary with the location of the customer. The implications of this system are the reverse of the f.o.b. system. Now the firm is involved in the business of transportation (even if the provision of the transportation facilities are subcontracted). Further there is an additional element of uncertainty in the relationship between sales and profitability, in that a change in the pattern of sales between near and distant customers will result in a change in profits.

On the credit side the firm will now have a better chance of winning orders from distant customers. But because the transportation costs will clearly mean that average delivered prices will exceed f.o.b. prices, the edge which the firm would

have over competitors in its 'home' market will be lost. Indeed if all firms adopt a single-zone, delivered-price policy the competitive situation becomes very flexible.

Although in a single-zone system there is no price differentiation, a form of price discrimination can be said to exist, since differences in cost are not reflected in differences in price. This can again be explained in terms of demand elasticities, in that each firm feels that demand is more elastic in distant than in home markets.

*Multiple-zone Delivered Prices*

This system, under which delivered prices are uniform within each of two or more zones, comes midway between the two previous systems in terms of simplicity, certainty and aggressiveness. There are price differentials between zones. There may also be price discrimination both between and within zones.[3]

*Basing-point Pricing*

Basing-point pricing is a system of delivered prices in which the cost of transportation, which is added to the price of the product, is calculated as from a basing point.

In a single basing-point system the charge to the customer will depend upon his distance from the basing point, regardless of which of the company's plants supplies him. (A plant may or may not be designated as a basing point.) Hence different customers will pay different prices which are unlikely fully to reflect differences in costs.

This system reduces the incentive for a customer to stipulate delivery from a given plant, that is to say the nearest plant, that would exist with an ex-works system, and the freedom of the supplier to allocate his output in terms of overall cost-effectiveness is thereby increased.

Firms may however meet difficulties in trying to implement a single basing-point system because of the price discrimination which is involved. As we have pointed out price discrimination also occurs when uniform delivered prices are charged. But at least in that system there would seem to be an element of fairness in that all buyers pay the same price. Under the basing-

point system buyers pay different prices which can be seen not to reflect actual differences in costs. A loss of goodwill would be especially likely to arise if customers had located their plants near to that of a supplier (as frequently happens in some industries) and the supplier subsequently adopted another location as a basing point.[4]

Basing-point systems have sometimes been operated on an industry-wide basis. This clearly implies some form of co-ordination of activity on the part of the firms in the industry, perhaps price leadership, perhaps collusion. Once established, such a system could in principle serve to make competition more perfect since one possible source of price differences between suppliers (i.e. transport cost) is obviated and the attention of the buyer can be concentrated on any differences in product prices.

More perfect competition implies a greater uniformity of prices, and this has been found to exist in practice. But it does not follow that these prices will necessarily be lower than they would be under some other system. If the firms are able to co-operate in devising an industry-wide system, co-operation might extend to individual ex-works prices.

Certainly basing-point systems have run into legal difficulties because of their potential for restricting competition, an aspect which is discussed further in Chapter 13.

## PRICE DIFFERENTIALS IN INTERNATIONAL TRADE

The barriers created by space are clearly greatest when firms are selling in different countries, and there is evidence that despite some reluctance to 'subsidise the foreigner'[5] prices tend to be lower in export than in domestic markets, because of the greater competitive pressures in the former.

For example, on the basis of interviews with senior personnel in twenty-nine British engineering companies, Rosendale concluded that 'Most firms set about the pricing process for export sales in much the same way as for home sales but experience greater competitive pressure on prices . . . most firms were emphatically opposed to the setting of prices in the

home market which did not fully cover direct costs plus a full contribution to overheads. . . . In export pricing nine firms were prepared to consider and, if necessary, accept such prices.'[6]

The international price structure of car manufacturers has been well documented.[7] The figures presented in Table 6.1 indicate that the manufacturers of the three models considered that they faced significantly different demand conditions in the different markets.

Table 6.1 *Ex-Works Prices in Foreign Markets, 1966–9* (average price in domestic market = 100)

| | *U.S.A.* | *Switzerland* | *U.K.* | *Netherlands* |
|---|---|---|---|---|
| VW 1300 | 104 | 94 | 97 | 101 |
| Ford Cortina | 97 | 95 | 100 | 80 |
| Renault R8 | 96 | 102 | 90 | 97 |

*Source:* D. G. Rhys, 'Barking up The Wrong Carriageway', *The Guardian* (22/10/74).

The fact that different suppliers apparently took differing views about elasticities should not be surprising since these elasticities will be influenced by a wide range of factors pertaining to a particular manufacturer, or even a particular model. For example Volkswagen's relatively high price in the United States presumably reflected its stronger market position *vis-à-vis* competitive models in that country.

## THE SUBDIVISION OF MARKETS BY TIME[8]

In arriving at a decision as to the optimum time-pattern of prices one has to consider the conditions of both demand and supply, and in each case important differences exist between goods on the one hand and services on the other.

Beginning with demand one of the most striking differences is that many services are subject to severe 'peaks' in demand. Far more telephone calls are made during the day than at night, the greatest demand for passenger transport facilities arises when the majority of people are travelling to and from work, many leisure activities are subject to heavier demand in the evening than during the day.

Turning to the supply side there are considerable difficulties in trying to match this pattern of demand. Since services cannot be stored for future consumption, matching demand would imply a very erratic work-pattern for the labour force, entailing such things as early starts, late finishes, and split shifts. Financial incentives help to compensate for these conditions, but the public authorities which supply many of these services are often unable to afford the required incentives, so that sufficient labour may not be available to service the peak demand.

Another problem is that it is not possible to make any adjustment in such capital inputs as buildings and machinery. Since some of the costs incurred by the installation of these assets will continue whether or not they are being utilised, the firm may wish to install less capacity than is needed to meet the peak demand.

The restriction of supply will cause difficulties for the consumers since they too are unable to store services for future consumption. In general we can say that the quality of the service will decline in such circumstances, queues will form, either literally, as at bus stops, or metaphorically, as when telephone services become overloaded so that numbers are obtained less quickly.

The reverse situation applies in off-peak periods, when supply exceeds demand and buses, trains, and cinemas, etc., have room to spare.

In such situations there are several factors which suggest that prices should be higher in the peak than in the off-peak periods. First, costs will be higher in respect of peak periods. By this we mean not that the cost per unit of 'output' (e.g. passenger mile) will be higher (indeed given that the output per unit of time is higher, unit costs may well be lower), but that the capacity of the supplier is determined by the level of the peak demand hence the costs incurred in extending the capacity beyond that which would be required to meet the off-peak demand should attach to, and be recovered from, peak-period customers.

On the demand side, differential pricing is suggested by the belief that demand is likely to be less elastic in peak than in non-peak periods. But there are factors on the demand side which may militate against the implementation of differential prices in some instances. For example in transport services it

may be thought unfair that higher fares should be charged for people going to work than to housewives going shopping or visiting friends, since the workers have to travel to work while for the housewife the journey is optional.[9]

The other complicating factor on the demand side is the uncertainty surrounding the elasticity of demand. Peak-period customers may react to a widening of the price differential in one of two ways. First they may switch their 'purchases' from peak to off-peak periods. Long-distance, business telephone calls may be deferred from the morning, when the peak-rate charges operate, until the afternoon, when the standard rate comes into operation; private calls may be deferred until the evening, to take advantage of the cheap rate. Such transfers of custom will cause total revenue to fall, although this may be balanced and, hopefully, outweighed by the reduction in 'capacity costs'.

The second possibility is that some people may stop demanding the service. Telephones may be disconnected; rail users may buy cars. Here of course the loss of revenue is greater than when a change occurs in the time pattern of purchases, and therefore it is less likely that the overall effect will be to the supplier's benefit.

We have discussed the possible effects of price differentials on existing customers, but it is also important to consider the effect on potential new customers. One of the most prominent indications of the greater attention given to marketing by British Rail in recent years is the increase in the number of concessionary tickets available at off-peak periods.[10]

The examples given so far in this section have mainly related to differentials within a 24-hour period. However, the same principles underlie longer-term differentials, as for example the offering of cheaper train tickets at the week-ends.

Seasonal differentials are also to be found. Probably the best example is the holiday industry, where winter rates are often much cheaper than summer rates, especially for overseas package tours. An important factor in this market is the degree of vertical integration that has occurred in the industry. Tour operators have acquired fixed assets, especially hotels, and in an attempt to increase the utilisation of these assets have offered exceedingly cheap off-peak holidays.[11]

Regular price–time differentials are much less important for most manufactured goods, simply because of the ability to store the product. Time differentials will in fact usually reflect poor planning or a failure of expectations rather than a deliberate policy. So goods which are in danger of physical deterioration or are going out of fashion or becoming obsolescent may be sold for whatever revenue can be obtained. January is often the best time to buy Christmas cards; diaries are at their cheapest during March and April.

There are however a few manufactured products whose supply and demand conditions are similar to those of services (e.g. electricity). Interestingly there is a well-established price–time differential in electricity, designed to encourage the consumption of electricity at night. In addition the tariffs for industrial and commercial users are related to the peak demand at any one time during the year: another pricing method designed to encourage a more even time–pattern of demand.[12]

## THE SUBDIVISION OF MARKETS BY THE FUNCTIONAL ROLE OF THE CUSTOMER

Manufacturers' customers are of four major types, namely other manufacturers, wholesalers, retailers, and final consumers. Some manufacturers may sell to all four types of customer, and in such instances the price structure of the manufacturer will be very complex. We examine some of these very complex situations below, but first we examine simpler situations where the manufacturer is selling only to one type of distributor, either wholesalers or retailers. We begin with some general considerations which apply to both of these groups.

The first consideration is whether the manufacturer should accept or challenge the discount structure which is established in that market. Changes do take place in conventional structures. For example the Prices and Incomes Board found that during 1961–7 (a period of resale price maintenance), while the revenue per unit of the manufacturers of chocolate and sugar confectionery rose by 13 per cent, the margins of distributors rose by 29 per cent.[13] Nevertheless any manufacturer who wishes to challenge the structure that exists at any given

time by offering lower discounts will almost certainly have to offer distributors some compensating advantage, such as a better quality or more heavily advertised product, whose rate of stockturn would be greater than that of competitive products.

This leads on to the second general consideration, namely that distributor discounts can be seen as one element in the marketing mix, as one of several alternative forms of expenditure. With a given retail price the basic choice is between a high manufacturer price (low distributor discount)/high-cost (sales promotion, R and D) strategy, and a low manufacturer price (high distributor discount)/ low-cost strategy.

In deciding which of these strategies to adopt, the manufacturer should consider his relative strengths and weaknesses *vis-à-vis* his competitors. The firm which feels that it has superior research facilities and technical know-how may decide for the high-cost/low-discount strategy. Conversely a firm lacking such advantages which seeks to break into a market may feel that rather than try by advertising to overcome the advantages (in terms of reputation and familiarity) of established firms, it would be better to try to obtain the loyalty of distributors by offering higher discounts.

Having taken a view on the relative merits of these two strategies the manufacturer then has to decide how to apply the chosen strategy, and specifically by how much the discounts offered should deviate from the conventional figure. This requires a decision on two further matters: how many distributors he wishes to attract and what role he wishes them to perform.[14]

These two questions are closely related in that a high discount will normally both attract more distributors and will enable them to offer a wider range of services in support of the manufacturer's product.[15]

## DISCOUNTS TO WHOLESALERS

In analysing the role that the manufacturer may wish distributors to perform it is convenient to make a distinction between the two major types of distributor, namely the wholesaler and the retailer. The wholesaler's functions which are of particular interest to the manufacturer include:

1. Informing the retailer as to the availability of the manufacturer's product, and providing advice about product characteristics.
2. Providing display facilities where the manufacturer's product may be inspected.
3. Holding stock so that the retailer can replenish his stocks more readily than if he had to call on the manufacturer's stocks.
4. Breaking bulk, so as to provide the retailer with 'packages' (e.g. cases) of a more convenient size than that provided by the manufacturer.

The relative importance of these various functions will vary from one product or market to another. For example display facilities are more important for interior design products than for foodstuffs. In addition, within any given market, manufacturers may wish to put more or less emphasis on any particular function. For example Joel Dean[16] quotes the manufacturer of refrigerators who decided that in one of his major markets the functions of the retailer should be confined to displaying six basic models, taking orders for them, and arranging the terms of the individual transactions. The wholesaler was allocated tasks which would more usually be performed by the retailer: the receiving of goods, inspecting them and delivering them to the customer, installing the refrigerator and being responsible for all subsequent mechanical servicing. In such a situation a reallocation of the total discount as between retailer and wholesaler could be seen as both an incentive to the wholesaler to undertake the additional functions and as necessary compensation for the additional costs incurred.

A second example quoted by Dean[17] is the manufacturer of building materials who gave a discount of 5 per cent to wholesalers who re-sold in car-load lots shipped directly from the manufacturer to the retailer, and a 12 per cent discount on shipments that were warehoused by the wholesaler and subsequently sold by him in smaller lots. The additional discount was estimated to cover the cost of performing the third and fourth functions enumerated above.

While it may sometimes be difficult to make such precise adjustments of discounts to reflect differences in functions, it may be possible to make a cruder distinction in terms of the

broad characteristics of distributors. In order to qualify for a particular level of discount the wholesaler may have to demonstrate that he has the facilities which are presumed to be necessary to provide the required support for the product.

For example the Monopolies Commission[18] showed that Lucas defined several classes of distributor:

1. Wholesale electrical agents and motor distributor agents who were expected to offer a specialised service in electrical equipment, to carry adequate stocks (particularly of spare parts for repairs), to diagnose faults and undertake repairs and testing. The wholesale electrical agents were mainly wholesalers who had some retail sales, while the motor distributor agents were mainly retailers with some trade sales.
2. National factors (two only in number) who had branches in most large towns, whereas other factors usually had one establishment only or covered only a small section of the country.
3. Electrical stockists who specialised in motor electrical equipment, and had been appointed service agents of *other* manufacturers.

The discounts allowed to these various types of distributor (excluding quantity and other special discounts) are presented in Table 6.2.

Table 6.2 *Discount off List Prices* (per cent)

| | *Fast-moving spares and accessories* | *Slow-moving spares* |
|---|---|---|
| Wholesalers' electrical agents | 45 | 35 |
| Motor distributor agents | 35–45* | 35 |
| National factors | 45 | 35 |
| Other factors | 42½ | 32½ |
| Electrical stockists | 40 | 30 |

*Dependent on turnover.

## DISCOUNTS TO RETAILERS

The most obvious function performed by retailers is to present the manufacturer's goods to the purchasing public. This usually

implies providing storage and other display facilities[19] and making the product available in the amounts required by consumers.

The level of facilities required will vary from product to product, and this is reflected in the varying discounts offered for different products (see Table 6.3).[20]

Table 6.3 *Gross Margins in Certain Trades, 1966*

| *Trade* | *Gross margin* (%) |
|---|---|
| Boots and shoes | 37·3 |
| Radio and electrical | 36·9 |
| Furniture and allied | 32·8 |
| Bookshops, stationers | 28·6 |
| Grocers | 16·1 |
| Confectioners, tobacconists, newsagents | 15·9 |

*Source:* Census of Distribution, 1966.

As indicated above, while a conventional level of discounts may apply in a given trade, a manufacturer may wish to depart from the usual figure, and it is clear that even in terms of the basic functions set out above there is scope for considerable variation in the level of support provided by the retailer. This is even more true when one takes into account various other services that might be provided: delivery, extended credit, etc. (although these services are normally available in respect of the products of all manufacturers).

The differential nature of the services provided by different types of retail outlet has been recognised by the higher discounts offered to department stores.[21] U.K. Census of Distribution figures show that gross margins in department stores are around one-fifth greater than for retailing as a whole (a difference which may be partially due to differences of product mix).

We said at the beginning of this section that high discounts may be seen as an alternative to other forms of sales-promotion activity. However, there are some products, for example some domestic appliances, which are subject to considerable advertising expenditure and which also have high distributor discounts. This clearly implies that the recommended price will be high in relation to the manufacturer's price, and in this

situation there is a strong incentive for some retailers to engage in vigorous price competition.

These 'discounters' typically provide relatively little service, at least in their early years, and for this reason *may* receive lower discounts than the conventional retailers. However, since their operating costs are lower they still feel able to cut their prices in order to generate greater sales volume. If this strategy is successful they may then be able to take advantage of quantity discounts, even perhaps to the extent of buying on more advantageous terms overall than those firms who are providing a fuller range of services.

This possibility may pose a dilemma for the manufacturer. On the one hand if the total volume of sales increases as a result of the lower prices set by the discounters, then the manufacturer will benefit. (Although this raises the question as to why the lower recommended price was not set initially.) On the other hand if retailers who provide full support lose sales to the discounters, they may reduce the level of support, and may indeed refuse to stock the product.[22]

## PRICING TO OTHER MANUFACTURERS

We turn finally to sales to other manufacturers: Since the amount bought by a manufacturer may exceed that bought by the typical distributor, and may indeed represent a substantial part of the supplier's total turnover, the supplier may offer a sizeable price concession in order to obtain the business.

In some instances the pricing decision might simply be a quantity discount problem; in other instances significance may attach to the fact that the customer is a manufacturer. In general other manufacturers will be more easily able to estimate the supplier's costs. Moreover they are more likely to have the capability to manufacture the product themselves, should the existing supplier's margins appear to be too high.

In addition, in certain markets, sales to manufacturers may aid future sales through distributors, for example, where there is an important replacement market. So if an automotive component is designed for a particular model of a vehicle in such a way that no rival supplier is able to supply a substitute,

the supplier may expect to earn high margins on his replacement business, especially from sales made to wholesalers and retailers. Even where good substitutes are available individual consumers may express a preference for the original brand, allowing the maker of this brand to charge a premium price.

The price differentials obtaining in parts of the U.K. car industry can be inferred from reports of the Monopolies Commission. In its *Report on the Supply of Electrical Equipment for Mechanically Propelled Land Vehicles*,[23] the Commission states that 'the Lucas group earned on average over the eight years to 1961 a profit rate on sales of 13 per cent on replacements, as compared with a rate of 6·1 per cent on initial equipment'. It also concluded that Chloride's profits on automotive batteries in the seven years to 1960 were 1·6 per cent on sales (or 3·2 per cent on capital employed) for original equipment as compared to 14 per cent on sales (31 per cent on capital employed) for replacement equipment.[24]

One cannot say what differential will be optimal in any particular situation, but too-wide a differential carries the obvious danger that rival manufacturers may be established purely to supply the more lucrative replacement market. This is precisely what has happened in the U.K. market where replacement business has been the basis of the growth of such firms as Quinton Hazell, Wipac, and Park Bros.

We have been concerned in this section with the significance for pricing of the customer's functional role, and we have seen that this may often have to be considered along with the size of the order. It is therefore appropriate to discuss next the factors which may influence the structure of quantity discounts.

## QUANTITY DISCOUNT STRUCTURES

Quantity discounts are mainly designed as a means of (*a*) influencing the pattern of orders, so that a given volume of orders can be met at minimum cost, and (*b*) increasing the volume of orders, or at least preventing a loss of orders to competitors. In determining his discount structure the manufacturer should decide which of these two objectives is the more important, since some structures contribute more to one than to the other.

Discount structures have several important dimensions, and we begin by considering various combinations of two dimensions: first, the discount may be related to either (1) the amount of an individual product bought, or (2) the amount of all products bought, aggregated together. Second, the 'amount' can be measured in terms of either (*a*) value or (*b*) volume.

Alternative (1) is more likely to encourage a pattern of ordering which will lead to longer production runs, with consequent economies in production. 1(*b*) has the additional advantage of enabling the producer to offer incentives for the purchase of full case-loads, which may lead to savings in packaging and handling costs. Moreover the value measure, 1(*a*), may mean that as the price of the product increases the discount due rises, even though the volume purchased remains unchanged. This could lead to a squeeze on profit margins if all prices, including input prices, rise, and this could clearly be a dangerous system under the current inflationary conditions.

Although alternative 2 is less likely to encourage long production runs, it does encourage purchasers to amalgamate their orders for different products, thus allowing economies in order-processing costs. It may also help a producer who has a dominant position in the market for one product to persuade the purchasers of this product to buy his other products. However, this policy will result in a fall in the effective price of the major product without any increase in its sales. Whether this is acceptable to the firm will depend mainly upon the importance attached to diversification and a wide mix of products.[25]

A further choice which has to be made is between a non-cumulative system, where the discount is based on the size of a single order, and a cumulative system, where it is based on the total amount bought in a given period. The non-cumulative system will encourage larger individual orders, and hence lead to savings in manufacturing, handling, and order-processing costs. Whether it will have much effect on the total volume of orders is more dubious.

On the other hand the particular advantage of cumulative discounts is said to be that they 'tie' the purchaser to a supplier. While it is clear that cumulative discounts discourage divided accounts or dual sourcing, there is, of course, no guarantee as to which producer will benefit and which lose from this system.

Consequently, before instituting such a system, a producer should analyse very carefully the advantages that he can offer to purchasers, *vis-à-vis* other producers.[26]

A further important dimension of a discount structure is its width, that is to say the sizes of orders (however defined) which qualify for the minimum and maximum discounts. Analysis of company records frequently reveals that a large proportion of sales are made to a small proportion of customers: so frequently indeed that there are many references in the literature to an 80:20 ratio. If it is felt that a multiplicity of small orders is raising unduly the costs of production, handling and order processing, it may be desirable to raise the point at which a discount becomes available, that is to say narrow the structure.

The final dimension of a discount structure is its depth: the value of the discount available for given purchase quantities. It is here that the trade-off between a reduction in the effective price and the level of sales is most obvious. An especially vital question is whether, by increasing the rate of discount at higher points, the firm may be able to attract buyers whose custom is considered to be especially valuable: perhaps because they are selling products for which demand is very stable, or because it is believed that their lead will be followed by other buyers; a contract with a retailer such as Marks and Spencer may be seen as a guarantee that the manufacturer produces good quality products.[27]

The Monopolies Commission's *Report on Metal Containers*[28] provided a fascinating example of the discount structure operated by Metal Box, the largest suppliers of metal containers in the United Kingdom. As the dominant firm in the industry[29] Metal Box had been able to establish a structure which related prices to the underlying costs of supply, and which encouraged the full utilisation of highly automated machinery.

So for processed food cans the discount rate ran from 1 per cent on annual sales of 10 millions to 3 per cent on annual sales of 50 millions. Additional discounts of up to 3 per cent were also available for sales of up to 200 millions a year, this figure now including both food and beverage cans. Additional rebates were also given relating to the quantity of any one kind of can bought in one year. Finally additional rebates were given when

customers bought 100 per cent (or for some beverage cans 90 per cent) of their requirements from Metal Box, and special rebates were given to customers hiring open-top closing machines from the company.

The implications of this structure for the costs and sales of Metal Box are clear, and amount to a coherent and comprehensive discount structure. However, even a company with such a dominant position felt it necessary to provide some flexibility in meeting competition, not only from independent can-makers but also from customers who made or might make cans themselves. Nine purchasers of food and beverage cans, the largest of which was Heinz, were supplied at 'special contract prices'. The Commission noted that 'Metal Box says that in many cases terms have been negotiated at the insistence of large customers, whose bargaining power is considerable, and they represent the best terms the company could get.'

Of Metal Box's 624 customers, only forty-five (including the above nine) bought at special prices or under specially negotiated agreements. However, these customers accounted for 88 per cent of the company's total net sales.

Given the multi-dimensional nature of discount structures, and the fact that they may contribute to various alternative objectives, it is not surprising to find that many different structures exist side-by-side in a given market. In a study of the market for a certain electrical component, Crowther[30] found that four manufacturers, selected at random, had the following structures:

(*a*) 1 to 4 items at list price; 5·4% discount on 5 or more items.

(*b*) 1 to 9 at list price; 7·5% on 10–24; 16·7% on 25–49; 21·7% on 50–99; 25% on 100–249; 29% on 250 or more.

(*c*) 1 to 24 at list price; 7% on 25–99; 40% on 100–499; 50% on 500–999; 55% on 1000 or more.

(*d*) 1 to 49 at list price; 15% on 50–99; 24% on 100 or more.

It can be seen that all four manufacturers differ in respect of the minimum quantity at which a discount is offered, the maximum quantity at which the highest discount applies, the number of breaks (i.e. points at which the additional discounts are offered), and the value of the discount offered at each quantity level. Although we have emphasised that each supplier

should consider what discount structure best fits his own objectives, such variability would appear to indicate the lack of a coherent, considered policy, on the part of at least some of these manufacturers.

There is indeed evidence that discount structures often evolve over time in a very haphazard way. For example, in its evidence to the Monopolies Commission,[31] Pilkingtons stated that the different rate of discount applied to different types of glass, and the different ways in which they were expressed, had no particular significance, stemming largely from past practice. However, the company also maintained that the anomalies in the existing discount structure were accepted by the trade and would be difficult to remove.

One of the most intractable problems facing some manufacturers is whether they should offer quantity discounts regardless of the functions performed by the customer. Pressures to do so usually come from retailers buying direct from the manufacturer, who ask for 'wholesalers discounts' if their scale of purchases is comparable to that of wholesalers. The manufacturer may find it difficult to resist the pressure, especially if he gains significant cost-savings from large orders.

However, the danger of granting equal discounts is the risk of a loss of goodwill among wholesalers who naturally expect to be rewarded for their additional effort. This reaction is likely to be especially strong if the retailers are able to pass on their lower buying costs in the form of lower retail prices and hence undercut the wholesaler's traditional customers.

## SUBDIVISION OF MARKETS BY THE PERSONAL CHARACTERISTICS OF PURCHASERS

The most common form of differentiation on a permanent basis is by age, with lower prices being charged for children and, less frequently, for elderly people than for adults of working age.

These reductions are most frequently found in service industries, for example in transport, entertainment, and personal services such as hairdressing, the main reason for this being that the service is normally consumed in public, often at the

point of sale, so that the possibility of 'leakage' between the two price segments is reduced.

These price differentials can often be justified in terms of price elasticity; the lower incomes of the young and the very old may put these services out of their reach at normal prices. However, social considerations may also be important, especially in respect of such essential services as transport: allowing children to travel at half price during peak periods can make little sense economically.

Occasionally different prices may be charged for males and females. So, for example, British Rail offers ladies' tickets on some of their Inter-city routes. Sometimes these tickets are valid only for journeys at off-peak times, representing a combined time/sex differential.

Some of these prices which are related to the consumer's personal characteristics are offered at irregular intervals and so may be better classified as promotional pricing: the subject of the next chapter.

## FURTHER READING

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# Chapter 7

# Promotional Pricing

## THE ROLE OF PROMOTIONAL PRICING

We define promotional pricing as the setting of a price *on a temporary basis* below the price normally charged for that good or service.[1] Promotional pricing is sometimes a reaction to unforeseen circumstances, as when a downturn in demand leaves a company with excess stocks; these passive forms of pricing are considered briefly below.

More importantly firms may wish to build in promotional pricing as an integral part of their overall pricing strategy. One possibility is that a regular series of promotions might be launched, so that a significant proportion of total sales are made at reduced prices. As noted in our discussion of price experimentation in Chapter 4 problems may arise in the administration of price-reduction programmes. However, let us assume that these problems can be overcome, and consider the factors which may influence the degree of success of price promotions.[2]

First it is important that the manufacturer should identify the price reduction that is required in order to generate the desired increase in sales. Although this is an obvious point, there is evidence to suggest that this requirement is often not met. A study of the sales pattern of sixty-five products[3] suggests that in a significant proportion of promotions, money was given away to the consumer to little or no purpose. Of the sixty-five promotions, sixteen offered price reductions of less than 10 per cent. However, 'even a casual glance at the record for the sixteen brands indicated that the response to this range of discounts was not significant in terms of the job to be done'

(defined here as an increase in the market share during the period of the promotion).

Larger reductions usually elicited short-term gains in brand share, and particularly effective appeared to be the offering of a larger percentage reduction on a smaller quantity of merchandise – especially by concentrating the promotion on a giant pack size. But even here permanent gains in brand share were very rare, mainly because this type of promotion appeared to appeal mainly to established users of the brand.

Research into housewives' attitudes towards price-cuts has been undertaken in Britain by Harris International Marketing Ltd. These attitudes are entirely consistent with the buying behaviour discussed above in that they indicate that promotions have a very limited effect on brand switching. Of more than one thousand housewives questioned in February 1974 only 8 per cent said that they looked for price cuts, while of 495 housewives questioned in the following month, the majority said that they would buy cut-price goods only if they were their usual brands. Only 5 per cent said that they would buy only cut-price brands. These findings suggest that a regular inbuilt cycle of promotions is unlikely to lead to a permanent increase in the volume of sales, and may actually reduce total sales revenue.

## TACTICAL AIMS

It follows from this that promotions should normally be used for tactical rather than strategic purposes, and a number of aims can be considered under this heading:

(i) The correction of a situation of excess stocks. Where excess stocks have built up perhaps as a result of a failure to meet sales targets, firms may institute temporary price reductions. This is especially likely when the costs of stockholding are high, that is to say in times of 'dear money', when stockholding space is limited, or when the products are perishable. A variation on this theme is when price is lowered in order to maintain sales in periods of slack demand so as to prevent the emergence of excess stocks or to obviate the need to lay off workers.

(If this policy is adopted as a regular procedure it would be classified as differential pricing.)

(ii) To counter the activities of competitors. If a competitor is threatening to take away sales, for example by means of an extensive advertising campaign or by the introduction of a new product, a promotion may be mounted in retaliation so as to minimise the impact of this activity. In some instances promotional pricing may inhibit the introduction of competitive products, especially if the competitor is unsure as to whether the price reduction will be temporary or permanent.

(iii) The most extreme, aggressive, form of promotional pricing is that designed to force a competitor out of the market. In this case the price will probably be maintained at a low level for a considerable period of time – however, it can still be considered as temporary, and thus promotional, if it is raised after its objective has been achieved. Examples of such aggressive pricing behaviour have been given in various reports of the Monopolies Commission.[4]

(iv) If the manufacturer wishes to extend his distribution network a promotional offer may be made to the retailer. Again, if research reveals that a substantial proportion of consumers have not tried a given product or brand, a promotion may be the best way of persuading these consumers to make a trial purchase.

## THE IMPLEMENTATION OF PROMOTIONAL PRICING

In implementing a promotional pricing policy, decisions must be made concerning three important factors, the timing of the promotions, their frequency, and the amount of advertising support.

### TIMING

One might expect that promotions would have the maximum impact if launched when industry sales are at their highest.

However, Hinkle,[5] in a study supported by the Marketing Science Institute, found that promotions launched in off-peak seasons were more effective in terms of gains in market share, despite the fact that they were normally of a smaller magnitude. This result was probably due to the fact that most manufacturers launched promotions in peak selling periods, sometimes as a retaliatory measure against other promotions. The minority of manufacturers who refused to join battle at such times were duly rewarded.

## FREQUENCY

We have already indicated that any firm which launches frequent promotions on a given product may suffer a reduction in profitability because of the price reduction that has to be offered before a significant permanent impact on market share is achieved. There is also evidence that frequent promotions can have additional undesirable consequences, in both the short and long term.

Both consumers and retailers may stock-up during the period of the reduction and then wait for the next reduction before repurchasing: behaviour which can cause havoc with the manufacturer's production and distribution schedules. Even if the main purpose of the promotion is to reduce the manufacturer's stocks, a very erratic purchasing pattern can have dangers in that the excess stock problem may simply be shifted in time, reappearing at a later date.

Given that frequent promotions by one manufacturer will often trigger off similar behaviour by competitors, the overall effect may be to make consumers highly price conscious so that manufacturers become severely constrained in their long-term pricing policies.

Another possible long-term danger is that frequent price reductions may damage the image of the brand and lead to a reduction in brand loyalty. Fifty-one per cent of the housewives questioned on behalf of Harris International Marketing in February 1974 said that they disliked the price of their usual brand being cut. Incidentally six months earlier the corresponding percentage was forty-one, and the increase can be inter-

preted as an intensification of the feeling that frequent variations in pricing are yet another factor making shopping in an inflationary age a tribulation.

## PROMOTIONAL PRICING AND OTHER PROMOTIONAL ACTIVITY

The danger that promotional pricing may make consumers extremely price conscious and destroy brand loyalty is especially great where the price reductions are seen as alternatives to other forms of promotional activity such as advertising. These are conditions which are often conducive to the success of retailers' own brands.[6]

Indeed Hinkle is quite clear that the two forms of promotional activity should be seen as complements and not alternatives: 'There is rather plain evidence from our study that deals (i.e. price promotions) are not substitutes for advertising, and that they are as much as two or three times more effective when a brand's advertising-share level is sustained rather than reduced.'[7]

## ORGANISATIONAL INFLUENCES ON THE SCALE OF PROMOTIONS

We have seen that there is some evidence to suggest that promotional pricing is often ineffective in expanding sales and improving profitability, and this raises the question as to why price reductions remain such an important form of promotional activity.

One answer is undoubtedly the hope that one's own company will succeed where others have failed; another factor, as we have seen, is that a firm may feel obliged to offer a promotion to counter that offered by a competitor.

In addition it seems likely that organisational and personnel policies may be significant. A price promotion is a very simple marketing tool whose pay-off, as we have seen, is more likely to be a short-term than a long-term one. Therefore it will be very attractive to those people whose tenure in their present

position is likely to be extremely limited. Limited tenure is a fairly common characteristic of the position of brand manager in many companies.[8]

## FURTHER READING

D. V. Harper, *Price Policy and Procedure* (New York: Harcourt, Brace & World, 1966) ch. 8.

R. A. Lynn, *Price Policies and Marketing Management* (Homewood, Illinois: Irwin, 1967) ch. 9.

B. Taylor and G. Wills (eds), *Pricing Strategy* (London: Staples, 1969) chs 15, 41–3.

# Chapter 8

# Pricing and the Product Life-cycle

## THE PRICING OF NEW PRODUCTS

Before a decision is made to invest in a new product, an estimate is required of the price at which the product is likely to be sold. For those products which are new only to this producer, the price will be greatly influenced by the prices of established competitive brands. But where the product is entirely new to the market, or very heavily differentiated from existing products (i.e. a pioneer product), the producer will have a much greater degree of discretion in the price that he charges.[1]

Given this discretion he must decide upon the desirable time-pattern of profit-margins. A basic choice of strategies, suggested by Joel Dean,[2] is between a skimming and a penetration price, and although many firms will adopt a strategy between these two extremes this distinction remains useful as a means of exploring the implications of alternative strategies.

A skimming-price policy involves a high initial price (to skim the cream off the market) and a subsequent lowering of price, often in a series of steps, in order to expand sales. A penetration-price policy involves low initial prices, perhaps below the full-cost level, designed to penetrate the market as quickly as possible. In choosing between these two alternatives the producer should take into account several major factors.

## THE RATE OF MARKET GROWTH

The first is the rate of growth of the market as a whole. This will itself be influenced by pricing policies. However, there may be some products which are inherently less likely to gain rapid

consumer acceptance than others, and which would, therefore, be unsuitable for a penetration-price policy involving initially low, and perhaps even negative, margins.

Slow consumer response may be due for example to the need for a programme of consumer education about the merits of a product or to the need to establish an extensive distribution network.[3]

Slow market growth may also be due to the fact that the new product has a high appeal only for certain segments of the market. New drugs often have a wide range of potential uses, but have a particular advantage over other drugs only for some of these uses. If the producer extracts a price premium on account of this advantage, sales will thereby be restricted.

Other products have quite different characteristics. For example it may be possible to demonstrate the advantages of a product by means of laboratory or engineering tests – especially where the product is sold to industrial buyers – and hence gain rapid consumer acceptance. Again for some industrial products a high proportion of sales is made to a relatively few buyers, perhaps six or ten in the vehicle industry for example. This again can make for rapid consumer acceptance, and would be conducive to a penetration-price policy.

## THE EROSION OF DISTINCTIVENESS

The second important factor is the likely rate at which the distinctiveness of the pioneer product will be eroded. This will in turn depend upon the number of competitive products entering the market and the extent to which these products can reproduce the characteristics of the pioneer products (or offer alternative characteristics equally appealing to consumers). An indicator of the possible lead time enjoyed by the initial producer can be obtained from an analysis of his strengths and weaknesses *vis-à-vis* potential competitors in terms of technical know-how (which may be supported by patents), access to distribution channels, and, perhaps, more general considerations such as the financial strength of potential rivals.

If the lead time is very long, then a skimming price would be suggested (although as already indicated, the market price

elasticity of demand should also be taken into account). The implications of a short lead time are less clear. A penetration-price might be required in order to build up as wide a market as possible before the onset of the competitive onslaught, especially in those markets, such as grocery products, where distributors may refuse to handle more than a proportion of the competing brands. Again if it is felt that the product is one for which considerable brand loyalty may be built up a penetration-price strategy would be suggested.

On the other hand, when buyers are more concerned about the characteristics of the product, including its price, than with the supplier, a skimming price may be more applicable. Note the example of the manufacturer of woollen cloth, quoted by Johnson,[4] who complained that he was unable to sustain for a reasonable length of time the initial price of a new design of cloth because buyers quickly switched to any new, lower-cost source of supply. Although this manufacturer felt hard done by, an alternative interpretation is that he was sensible to have imposed the higher price before competitive products emerged. This example also illustrates the point that the lead time should be considered not only in terms of its absolute length, but also in relation to the likely total life of the product. Our cloth manufacturer's skimming-price policy was especially appropriate given that changes in style and fashion would probably lead to the withdrawal of that particular design after only a short time-period.

The above discussion has assumed that the producer is concerned to make the choice which will yield the highest profits over the foreseeable life of the product. However, other objectives may influence the decision. Clearly an objective of increased sales or market share will encourage a penetration policy. Conversely the firm may be concerned to improve its liquidity position in the short term, and may be unwilling to wait for the longer-term rewards accruing from a penetration policy.

Finally, although a pioneer product will not normally compete very strongly with existing products, some substitution may occur, and if this substitution is likely to encompass the producer's existing products, a penetration price will again be less appropriate.

## THE SIGNIFICANCE OF COST STRUCTURES

The third major factor to be considered is the cost structure of the producers. A reduction in unit cost may be expected to follow from an increase in output as a result of two distinct processes whose operation can be illustrated by reference to Figure 8.1.

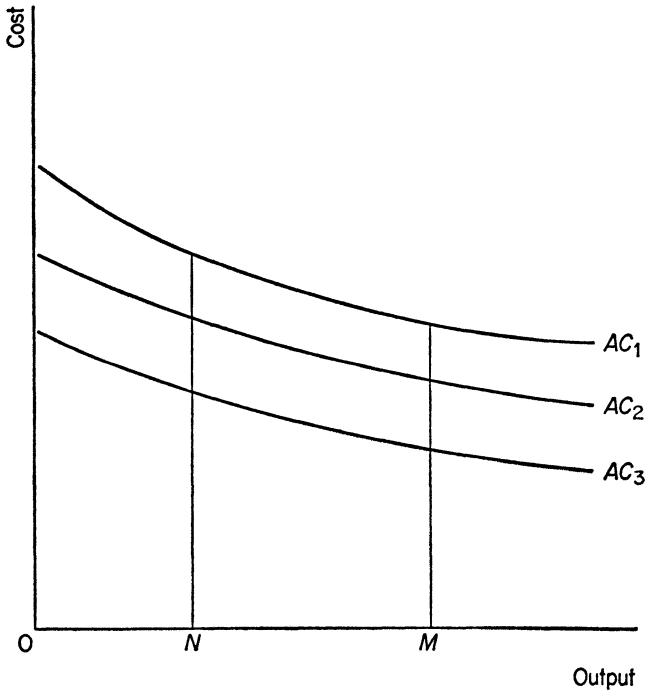


Figure 8.1

$AC_1$ indicates the average cost of producing various quantities of a product within a given period, say a day. Average cost is lower with an output of $0M$ than $0N$ per day, due to the scale factor.[5] If we were to measure costs in a subsequent period, say a year hence, we would expect to find a reduction in real costs, (i.e. after allowing for changes in input prices). The extent of this reduction would be influenced by the amount produced

within the twelve-month period. A daily output of $0N$ would give rise to cost curve $AC_2$, a daily output of $0M$ to cost curve $AC_3$. This illustrates the operation of the learning effect. In general we can say that the greater the scale factor and the learning effect, the more appropriate will a penetration policy be. There is in fact evidence to suggest that these two factors are of considerable significance in many industries. Evidence relating to the scale factor was referred to in Chapter 2. Various studies have identified the learning effect.[6] The Boston Consulting Group produced, for thirteen products in the United States, estimates relating cumulative output to price. If price is accepted as an indicator of unit costs,[7] this data gives some ideas of the combined effect of the scale and learning factors. A sample of the Group's figures, showing the situation up to twelve years after each product's introduction (indicated as $t$) is presented in Table 8.1.

A substantial decline in real costs is indicated for all three products, but in particular for transistors, which would be especially suitable for a penetration-price policy. Such a policy not only enables the manufacturer to reduce his costs but also ensures that, by denying sales to competitors, he is able to maintain the advantage that he has obtained over his competitors by virtue of the learning effect. The Boston Consulting Group express the belief that 'the basic objective in pricing a new product should be to prevent competitors from gaining experience and market share before the new product has achieved major volume. If this is done, it is possible to achieve a cost advantage over competition which cannot ever profitably be overcome by any normal performance on the part of competitors.' They feel that companies often fail to realise the significance of this factor: 'Early market domination is much more valuable than most companies realise, and internal compromises on initial pricing tactics are frequently disastrous to long term profitability.'[8]

More recently a fight for survival has occurred in the market for pocket calculators. Between the end of 1972 and the beginning of 1975 the average price of basic machines fell from around £50 to around £10, with the price of several of the leading models being cut overnight by 50 per cent. It was estimated that, despite a phenomenal growth in the rate of sales, about one-

Table 8.1

| | *Germanium transistors* | | *Monochrome TV receivers* | | *Polyvinyl chloride* | |
|---|---|---|---|---|---|---|
| *Year* | *Accumulated volume (mn units)* | *Price ($)* | *Accumulated volume (000 units)* | *Price ($)* | *Accumulated Volume (mn lb)* | *Price ($)* |
| *t* | 1·3 | 3·56 | 180 | 376 | 367 | 52·6 |
| *t*+3 | 45 | 1·85 | 11,620 | 226 | 903 | 49·3 |
| *t*+6 | 287 | 1·70 | 30,320 | 193 | 1995 | 44·6 |
| *t*+9 | 928 | 0·69 | 52,820 | 135 | 3353 | 37·4 |
| *t*+12 | 1900 | 0·45 | 70,490 | 126 | 5336 | 27·0 |

*N.B.* All prices are expressed in constant dollars.

*Source:* Boston Consulting Group, *Perspectives on Experience* (Boston: 1968) app. A.

third of the original sixty-plus firms on the U.S. market had been driven out of business or into unwanted mergers by the beginning of 1975, and predictions were reported that no more than a dozen firms would survive beyond 1976.[9] In the European market the relative mortality rate has been even higher.

Of course a penetration price has itself certain inherent dangers in that should the market not take off as rapidly as expected the whole rationale of the policy is undermined and severe losses may be suffered.

## POST-SKIMMING STRATEGIES

If a skimming price is chosen, subsequent decisions will have to be made about the timing and the size of future reductions from the initial price. We have already seen that in some instances the producer's hand may be forced by the actions of competitors. In other instances, however, producers may have more discretion.

In such situations one of the important factors will be the extent to which the 'top' end of the market has become saturated. Once it is felt that the limited number of consumers who are willing to pay a high price have had the opportunity to buy, it then becomes appropriate to lower the price in order to attract new customers. (The situation is of course more complex in a repeat-purchase situation; however, even here the firm might expect to be able to identify the point of maximum penetration of that segment of the market in terms of a levelling-off of the rate of sales.)

Another important consideration is the extent to which the product has gained an image of exclusivity or prestige. A prestige image would probably suffer if a substantial reduction in price occurred: more appropriate would be a series of small reductions.

## MIXED STRATEGIES

As we noted in the introduction to this chapter some producers may choose a policy which falls between the two extremes of

the skimming and penetration prices, and which may be seen as containing elements of both concepts. Indeed Kaplan, Dirlam and Lanzillotti found that this characterised the pricing decisions on new products in many of the large companies that they studied.

For example they found that Du Pont followed a mixed strategy for both nylon and cellophane. However, cellophane was nearer the penetration end of the spectrum, apparently because 'the cost elasticity of volume output and the price elasticity of growing demand were sufficiently high to permit a more rapid rate of expansion than was possible in nylon'.[10]

Again 'in the pricing of a major piece of farm machinery such as the cotton picker (manufactured by International Harvester) the decision settled on a middle ground between the estimated maximum economic value as a replacement for hand labour and a sufficiently low price to give assurance of widespread adoption'.

Using the customer's estimated savings in operating costs as a guide to price is in fact an alternative approach. This is particularly characteristic of industrial goods pricing. Finally the various market research techniques discussed in Chapter 4 may also be used to indicate the appropriate price for a new product.

## PRICING IN MATURITY

Maturity is most usually defined in terms of the product's rate of sales – maturity is the stage between the growth period, when sales increase rapidly, and the period of decline, when sales turn down.[11]

The concept of the product life cycle may be useful in preventing complacency on the part of firms who have introduced successful products, alerting them to the need to have additional products ready for launching when sales of their existing products begin to fall. However, the concept itself provides very little guidance as to what pricing policies should be adopted at this stage of a product's life.

Joel Dean, usually the most decisive of analysts, appears to be very unsure about the implications for pricing policy. On

the one hand he suggests that the 'first step for the manufacturer whose speciality is about to slip into the commodity category is to reduce real prices as soon as the symptoms of deterioration appear'. On the other hand, within the same paragraph, he declares that 'this does not mean that the manufacturer should declare open price-war in the industry. When he moves into mature competitive stages, he enters oligopoly relationships where price slashing is peculiarly dangerous and unpopular. With active competition in prices precluded, competitive efforts move in other directions, particularly toward product improvement and market segmentation.'[12]

Another deficiency of the product-life-cycle concept is that it implies that a decline stage will inevitably succeed maturity, whereas in some markets maturity may be prolonged for many years by a series of product innovations.[13] In other markets maturity may be prolonged because the product fulfils a basic need for which no close substitute exists, for example in the case of some minerals and agricultural products.

Furthermore cost conditions should be taken into account. If costs are continuing to decline, and especially if this is due to the learning effect, there will be a pressure for price reductions, even though the market elasticity of demand may now be low.[14]

Where there are significant cost differentials, but little scope for cost reductions, a price reduction implies increased pressure on the margins of the high-cost producers who may thereby be forced out of the market. Conversely if the low-cost firm prefers to adopt a live-and-let-live policy it will maintain its prices, perhaps utilising the higher short-run profits thus generated for investment in product differentiation activities.

## PRICING PRODUCTS IN DECLINE

Similar analysis can be applied to products whose sales have begun to decline. However, three further strategies may be mentioned which have particular reference at the decline stage.

The first strategy is to reformulate drastically the product and sell at a much lower price. This is common in the book trade where a saturation of the market by a hard-backed

edition is often the sign for the introduction of a soft-backed version. There are, however, relatively few products which lend themselves to such drastic reformulation and hence can make such distinct appeals to different segments of the market. Moreover even in books the time scale between the publication of hard and soft editions has tended to decline, and today the two editions may appear at the same time.

Second, a temporary revival of sales may be induced simply by a substantial price reduction, as happened in the United Kingdom with the Ford Anglia, whose popularity had diminished under the impact of changes in styling and performance in competitive models. The Anglia had built up a reputation as a reliable family car and the price cut, allied to this reputation, created a new value-for-money image.[15]

Finally, even if a price reduction fails to make a significant impact on sales, additional profits may still be wrung out of declining products if the producer is strong-willed enough to withdraw advertising support, thus formally accepting the status of the product.

## FURTHER READING

J. Dean, *Managerial Economics* (London: Prentice-Hall, 1961) ch. 7.

D. V. Harper, *Price Policy and Procedure* (New York: Harcourt, Brace & World, 1966) ch. 6.

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# Chapter 9

# Product-Line Pricing

The vast majority of firms are concerned with product-line pricing, since they produce more than one product or at least more than one version (size, colour, etc.) of a given product. To some extent the pricing of a product line is amenable to the analysis presented in previous chapters. The firm may for instance set the prices of its various products on the basis of the cost of those products, using either a full cost or a contribution approach. Alternatively it may take as its starting point the price of competing products.

If the various products made by the firm are selling in quite distinct markets, that is to say if their cross-elasticities are zero, and if they utilise different production and distribution facilities, then it may be adequate to consider each product separately. However, in most instances these two conditions will not hold: there will usually be market and production interrelationships which should be taken into account.

## SUBSTITUTION

The various products made by a firm may be seen by customers as substitutes for each other. Certainly the different versions of a given product will be seen as such. If B.L.M.C. lowered the price of its Austin models in order to increase its sales, this would be likely to reduce the sales of other B.L.M.C. models, and especially the directly competitive Morris models. If an increase in the price of the Parker 61 pen put it out of reach of potential buyers, some of them might turn to the Parker 51.

The firm should take into account these internal cross-elasticities and be prepared to moderate the generalised pro-

cedures which it applies, whether they be cost or market oriented, when the cross-elasticities appear to be significant.[1]

## CONSISTENCY

Substitution refers to the relationship between a pair of products, models, varieties, and so on. Consistency refers to the price structure of the product line as a whole, and in particular to the fact that the structure should appear to the customer to be 'fair'.

This concept of fairness is not in fact at all straightforward. For example consider an article of clothing: say a pair of shoes or a child's nightdress. Such articles may differ along a number of dimensions, including size or colour. Now if a price differential was established in terms of the size of the article this might be acceptable, since the consumer can see that the larger article has a greater material content which would add to the cost of production. On the other hand if the producer attempted to charge a higher price for a colour which was not very popular, and which therefore was produced in small runs at a higher cost than the popular colours, this might be seen as unfair, a reaction which could tarnish the producer's image.

Producers may adopt various strategies in order to try to avoid such unfavourable reactions. When the product is made to order the list price may refer to the standard model, with higher prices being quoted for 'special' versions, implying that for the extra money the buyer is obtaining a certain degree of exclusivity or prestige. (In some instances, where the prestige element is strong the price differentials may well exceed the cost differentials.)

A market in which this strategy is particularly well developed is the car market. Here the provision of extras of various kinds means that there is a considerable overlap between the prices of models whose basic prices are quite distinct.[2]

Cost differentials may also be fully reflected in price differentials when the manufacturer wishes to influence purchasing patterns. The Monopolies Commission found that whereas for the standard range of open cans price lists were published, for non-standard cans in very small quantities basic prices were

determined on an *ad hoc* basis. Moreover 'the price schedules are designed to encourage customers to choose their requirements from a limited standard range and so reduce to a minimum the cost of changing over production lines from one size to another'.[3]

An alternative method of meeting, or in this case avoiding, the problem of differentials in costs which cannot be reflected in prices is simply to refuse to manufacture those versions which fail to yield the target profit. Here the trade-off is between the immediate improvement in margins and the possible loss of sales that may result from the failure to offer a 'full-line', a point discussed further below.

## COVERAGE

The extent to which a producer's price range covers the market is of course intimately connected with his product policy. The relationship may be a two-way one. A producer may decide to manufacture goods designed to appeal to only one segment of the market, and this will influence the prices that are set. However, the reactions of consumers to these prices might in turn lead to a modification of the original product policy. For example in the United States Shwayder Brothers, makers of Samsonite luggage, decided to concentrate on medium-priced models, ignoring both the expensive leather and the cheap paperboard segments of the market. In 1965 the company had two principal lines, the Streamlite, wood-frame models, selling for between $14·95 and $26·95, and the Silhouette, magnesium-frame models, selling for between $27·95 and $55. This structure appeared to cover the target market adequately, there being no obvious price gaps. However, events suggested that it was inadequate in two respects.

At first it appeared that many customers first started with a low-priced line and subsequently traded up; but for many the jump between the Streamlite and the Silhouette ranges was too great. To overcome this problem the firm introduced an intermediate line, the Contoura, selling for between $19·95 and $36·95.[4]

The second modification involved an extension to the line

by the introduction of the Royal Traveller models, sold through discount stores at between 25 to 30 per cent below the prices of the 'regular' models. Restricting the distribution of this model to a particular type of outlet was a means of segmenting the market, of minimising the risk that consumers would substitute the lower-price models for the higher-price alternatives which yielded higher margins.

Another aspect of coverage is the decision as to whether or not the firm should sell a product priced at the very top and/or the very bottom of the market, not because these products will themselves necessarily generate a profit, but because they will increase the profitability of the product line as a whole.

The theory behind a top-of-the-market price is that, given that price is seen as an indicator of quality, the whole line will achieve a higher-quality image.

At the other end of the scale it is felt that a low price may encourage marginal consumers to make a trial purchase of that brand, and that if their experience is satisfactory they may subsequently buy higher-priced versions of that brand.

While the underlying theory appears to be sensible in both instances it must be admitted that very little evidence has been produced to support (or indeed to refute) the theory.[5]

## COMPLEMENTARITY

Complementarity is said to exist when an increase in the sales of one product leads to an increase in the sales of a second product. We have suggested that end-of-line pricing might take into account potential complementarity. A very different form of complementarity arises where two products are used together so that the price charged for one product can have direct repercussions on the sales of the second (cross-elasticity is high). Hence I.B.M. has followed a strategy of tying the sales of peripheral equipment and software to its computers, either by means of technical specifications or via contracts. Consequently a price change which affected the demand for computers would have direct implications for the revenue derived from the other elements of the package.

A weaker form of complementarity may exist where there is

no tie-up, technical or legal, but where an association between products may arise in the consumers' mind. So for example a consumer buying a Dunlop tennis racquet may be thereby encouraged to buy Dunlop tennis balls. However, it seems doubtful whether this weaker form of complementarity would often justify substantial price reductions in the 'leading' product.

Some writers see complementarity as having a time dimension. Joel Dean[6] quotes as examples trial subscriptions with, and children's editions of, magazines, midget pencil sharpeners, and diminutive sporting equipment. In fact trial subscriptions to magazines would probably be better seen as promotional pricing, while the remaining examples would certainly constitute at best only a weak form of complementarity and as such should be treated with the appropriate degree of caution.

A better example of time complementarity is provided by the greater emphasis given by British banks in the 1970s to policies designed to attract student accounts. These policies involved (*a*) the provision of bank services at low (and even zero) cost, and (*b*) financial incentives, such as pens and book-tokens, to the new account holder. The justification for this policy is the belief that after graduation the student will 'buy' a greater range of the bank's services.[7]

## THE USE OF JOINT FACILITIES

When different products compete for a common set of production facilities, the firm must bear in mind the possibility that a price reduction on one product which led to an increase in its sales could have the effect of restricting the facilities available for an alternative product. Any profits which are foregone on the other product (the opportunity cost) should be offset against the increased profits resulting from the price change.

Finally we should note that, having considered all these factors, the firm may decide to adopt a common price for all the varieties of a given product, especially if cost differentials are not significant. This may be due partly to the fear of adverse consumer reactions to price differentials, as noted above, and partly to the added administrative inconvenience which differentials may cause.

The Prices and Incomes Board found that although there were some differences in the production costs of different colours of paint, 'the great majority of manufacturers do not think the complication of differing prices would be justified, and make no distinction by colour in their list prices'.[8]

However, note that even here administrative convenience did not have the last word: 'Exceptionally, the recently introduced "brilliant white" or "superwhite" is a little more expensive than other colours.'

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J. Dean, *Managerial Economics* (London: Prentice-Hall, 1961) ch. 8.
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# Chapter 10

# Pricing in Bid Situations

The basic problem facing the price-setter in bid situations is the absence of information about the prices quoted by competitors. In this section we explore the ways in which elementary probability theory may be used to reduce the degree of uncertainty surrounding competitors' prices.[1]

## SOME SIMPLE BIDDING MODELS

We examine a number of different situations characterised by the availability of varying levels of knowledge. In all cases we assume that such factors as the reputation of suppliers and other elements of the marketing mix are held constant. This being so we can assume that changes in relative prices will have a major impact on market shares.

We start with a very simple situation with only two competitors and with data available on past bids. The first step required if firm *A* is to utilise this data is to examine the relationship between the prices quoted by *B* and *A*'s estimates of its own *costs*. A very simplified example is presented in Table 10.1.

Table 10.1

| *Ratio of B's price to A's cost* | *No. of times occurring* |
|---|---|
| 1·0:1 | 5 |
| 1·1:1 | 10 |
| 1·2:1 | 15 |
| 1·3:1 | 20 |
| 1·4:1 | 40 |
| 1·5:1 | 10 |
| Total number of bids | 100 |

This shows that on five occasions (five per cent of the bids), *B* quoted a price equal to *A*'s estimated cost, on ten occasions *B* quoted a price 10 per cent above *A*'s cost and, at the other extreme, on ten occasions *B* quoted a price 50 per cent above *A*'s cost.

If this relationship holds in the future *A* can calculate the probability of winning a bid at any given price. So if for example it set a price below cost the probability of success would be 1·0, since *B* has never quoted a price lower than *A*'s cost. If *A* set a price 9 per cent above cost the probability of success would be 0·95. If *A* set a price 49 per cent above cost, the probability of success would be 0·1.[2]

It follows that the probability of earning a given level of profit at various prices can easily be calculated. This is shown in Table 10·2, where a cost of £100,000 has been assumed.

Table 10.2

| *A's Bid* (£) | *Profit* (£) | *Probability of success* | *Expected profit* (£) |
|---|---|---|---|
| 99,000 | –1,000 | 1·0 | –1,000 |
| 109,000 | 9,000 | 0·95 | 8,550 |
| 119,000 | 19,000 | 0·85 | 16,150 |
| 129,000 | 29,000 | 0·70 | 20,300 |
| 139,000 | 39,000 | 0·50 | 19,500 |
| 149,000 | 49,000 | 0·10 | 4,900 |
| 159,000 | 59,000 | 0·00 | — |

If the firm wishes to submit a bid that will yield the highest expected profit, defined as (revenue minus cost) × (the probability of success), it should quote a price of £129,000.

We have assumed here that past relationships will be maintained. The general validity of this assumption will be considered below. However, there is one important implication that is most appropriately explored here. The probability of success with a price of £129,000 (or more generally, 29 per cent above cost) is 0·7. This implies that *A* would obtain 70 per cent of the orders, and *B* 30 per cent. But this situation may not be acceptable to *B*, especially if the capacities of the two firms are roughly equal. Therefore we would expect *B* to lower its general level of prices.

*A* may react to this possibility in one of two ways. If it gives a high priority to obtaining 70 per cent of contracts, it may set a price of £129,000 for early bids in the series, and then quote

lower prices to counter *B*'s expected lower price. Alternatively, if a lower market share is acceptable it will set a higher price, say £139,000. Although total 'expected' profits will be somewhat lower at this price, since fewer contracts will be won, this may be the more realistic long-term target.

Let us now consider a slightly more complicated situation, with *A* facing competition from two firms, *B* and *C*. We assume that data is available on the past bids submitted by *B* and *C*, and, for the sake of simplicity, that they take the same pattern.

Table 10.3 *Expected Profits with Two Competitors*

| *A's bid* (£) | *Profit* (£) | *Probability of success* | *Expected profit* (£) |
|---|---|---|---|
| 99,000 | –1,000 | 1·0 | –1,000 |
| 109,000 | 9,000 | 0·9025 | 8,123 |
| 119,000 | 19,000 | 0·7225 | 13,728 |
| 129,000 | 29,000 | 0·49 | 14,210 |
| 139,000 | 39,000 | 0·25 | 9,750 |
| 149,000 | 49,000 | 0·01 | 490 |
| 159,000 | 59,000 | 0·00 | — |

From Table 10.3 it can be seen that the quotation by *A* of a price below cost would again be sure of obtaining the order. The probability that a bid 9 per cent above cost will be lower than that submitted by *B* remains at 0·95. There is also a probability of 0·95 that it will be lower than that submitted by *C*. However, the probability that this bid will be lower than that submitted by either *B* or *C* will be $(0{\cdot}95 \times 0{\cdot}95) = 0{\cdot}9025$. Similarly the probability that a price 49 per cent above cost will be lower than that submitted by either *B* or *C* will be $(0{\cdot}1 \times 0{\cdot}1) = 0{\cdot}01$.

A bid of £129,000 still yields the highest expected profit, but the second-best price is now £119,000.

The analysis could be extended to encompass data relating to any number of competitors, and it would show that the greater the number of competitors the lower *A*'s optimum price. (For example £119,000 yields the highest expected profit with three competitors.)

We will now examine the situation in which the identity of the competitors for a particular contract is not known. In this situation it is necessary to combine the past prices quoted by all

competitors in order to arrive at an 'average' price pattern.

Let us assume that in addition to competitors *B* and *C* there are firms *D* and *E* which tend to quote prices which are respectively lower and higher than those quoted by *B* and *C*.[3]

The four success probabilities are shown in Table 10.4.

Table 10.4

| | *Probability of success if competing against:* | | | | |
|---|---|---|---|---|---|
| *A's bid* (£) | *B* | *C* | *D* | *E* | *Average success probability* |
| 99,000 | 1·0 | 1·0 | 0·95 | 1·0 | 0·988 |
| 109,000 | 0·95 | 0·95 | 0·90 | 1·0 | 0·950 |
| 119,000 | 0·85 | 0·85 | 0·75 | 0·90 | 0·838 |
| 129,000 | 0·70 | 0·70 | 0·60 | 0·80 | 0·700 |
| 139,000 | 0·50 | 0·50 | 0·30 | 0·60 | 0·475 |
| 149,000 | 0·10 | 0·10 | 0·10 | 0·20 | 0·125 |
| 159,000 | 0·00 | 0·00 | 0·00 | 0·10 | 0·025 |

The average success probability indicates the probability of success if *A* faced any one competitor drawn at random. If two or more competitors are involved, joint probabilities are calculated, as shown in Table 10.5.

Table 10.5 *Joint Success Probabilities*

| *A's bid* (£) | *Two competitors* | *Three competitors* | *Four competitors* |
|---|---|---|---|
| 99,000 | 0·975 | 0·963 | 0·951 |
| 109,000 | 0·903 | 0·857 | 0·814 |
| 119,000 | 0·701 | 0·587 | 0·492 |
| 129,000 | 0·490 | 0·343 | 0·240 |
| 139,000 | 0·226 | 0·107 | 0·051 |
| 149,000 | 0·016 | 0·002 | $0{\cdot}3\times10^{-3}$ |
| 159,000 | 0·001 | $0{\cdot}16\times10^{-4}$ | $0{\cdot}4\times10^{-6}$ |

Table 10.5 indicates clearly the importance of being able to estimate the number of competitors for any contract. Sometimes it may be impossible to make such an estimate with any degree of accuracy: but even here probability theory can be applied, provided that data is available on past bids. When data on a large number of bids is collated it is sometimes found that their distribution around the mean price approximates to a normal curve.[4]

If the firm can estimate the mean price for future bids (the ratio of its costs to the mean price on past bids may be a useful guide) it can read off from mathematical tables the probability of success of any bid which has a given relationship to that mean price. Alternatively, if it wishes to obtain a given market share, it can read off the price that it will need to quote to obtain that share.

Finally, even in situations where there is insufficient data from which to derive a model of the types considered above, the concept of probable success may still be useful in helping to 'firm up' management's subjective views about the situation facing them.

A practical illustration of the improvement in bid pricing that can be made is reported by Edelman.[5] The Radio Corporation of America compared, in seven tests, the prices emanating from a model with those suggested by the marketing management, using identical information. The relative success of the model can be judged from the data in Table 10.6.

A comparison of columns 4 and 5 shows that, given an objective of maximising the profit contribution for each bid,[6] the model performed better on six of the seven occasions.

Edelman's article is also useful in exploring some additional aspects of bidding models that space does not permit here, including a comparison of the optimum price suggested by two alternative models, one of which assumes a normal, and the other a slightly skewed, distribution of competitive bids, and the degree of sensitivity of the models to errors in two parameters: the mean and the shape of the distribution.

## LIMITATIONS TO THE USE OF BIDDING MODELS

We have already drawn attention, in our discussions of the two-firm situation, to the fact that it may be desirable to adjust the crude figures derived from the model, to take account of competitive reactions. When there are a large number of competitors the reactions to the success of any one firm is likely to be more muted. Nevertheless it is important to constantly monitor the environment to try to identify changes which might weaken the model's predictive ability. These

Table 10.6

| *Test* | *Bid without model* ($) (1) | *Bid with model* ($) (2) | *Lowest competitive bid* ($) (3) | (*1* ÷ *3*) × *100* (4) | (*2* ÷ *3*) × *100* (5) |
|---|---|---|---|---|---|
| A | 44·53 | 46·00 | 46·49 | 95·8 | 98·9 |
| B | 47·36 | 42·68 | 42·93 | 110·3 | 99·4 |
| C | 62·73 | 59·04 | 60·76 | 103·2 | 97·2 |
| D | 47·72 | 51·05 | 53·38 | 89·4 | 95·6 |
| E | 50·18 | 42·80 | 44·16 | 113·7 | 96·9 |
| F | 60·39 | 54·61 | 55·10 | 109·6 | 99·1 |
| G | 39·73 | 39·73 | 40·47 | 98·2 | 98·2 |

changes might relate to, for example, the number of competitors, the length of their order books, cost levels, and the determinants of demand.

There is nothing new in this. These factors will impinge on pricing decisions in any context. The reason for stressing their importance in relation to bidding models is first because of the absence of data on current price levels which in other situations might themselves be an indicator of some of these changes, and second because of the temptation that may exist to let the model take over. Edelman comments: 'Not only is the quality of the input information the ultimate determinant of the usefulness of the results, but the value of the entire approach is firmly based on the simple fact that the results are contributing, rather than deciding, factors in the decision which executives must make.'

## PRODUCT ANALYSIS PRICING (P.A.P.)

A lack of information about the 'going price' also characterises the markets for jobbing firms, such as the manufacturers of many small engineering products. There are two additional characteristics of these markets however which make it very difficult to apply the models outlined above. First, the number of quotations required is often very large, perhaps hundreds or even thousands a week. Second, many of these quotations may be for products which are unique in one respect or another.

If it is not possible to obtain even an approximation to the ruling level of prices there may be a temptation to fall back on cost-based prices. However, the proponents of P.A.P. would see this almost as a counsel of despair: they suggest that the price of any product should be related to the value of that product to the purchaser. In the absence of any external indicator of this value P.A.P. is intended to generate a series of internal indicators.

A second proposition underlying P.A.P. is that the delegation of authority for pricing decisions, which is essential in the large jobbing firm, should take place only within a series of well-defined rules. This is in fact a particular aspect of the general

philosophy of management in The Glacier Metal Co., in which P.A.P. was first developed.[7]

The central concept of product analysis pricing is the *target price*, which comprises three basic elements:

(i) the total bought-out value;
(ii) the net standard value;
(iii) a market percentage.

(i) *Total Bought-out Value.* The first component in this basic element is the material value, which is defined as the quantity of material embodied in the product valued at the customer's perception of the market price (or presumably, in the absence of information about customers' perceptions, at the actual market price) on the day of the enquiry, plus a material-policy percentage.

Note that the quantity of scrap material, which past experience suggests the firm may generate on this job, is not specifically allowed for. Instead the material-policy percentage, which is influenced by the normal input–output ratio of competitors, and is reflected in their prices, is added. Thus the danger that the firm will price itself out of the market because of its relative inefficiency in the material-processing operations is avoided. (Conversely it will benefit from any superiority *vis-à-vis* competitors in such processes.) Also the valuation of materials at current market prices rather than at prices actually paid is consistent with the view of the firm as an on-going entity, current price being seen as a close approximation to the price which the firm will have to pay to replenish materials drawn from stock. (While the economic logic of this is sound, it may carry the danger of a loss of orders if the price of materials is rising and competitors' prices reflect historical costs.)

A similar philosophy underlies the valuation of the second component of total bought-out value, namely the bought-component value. The appropriate value is again what the purchaser would pay if he bought the components himself and gave them to the producing firm to assemble. To this is added a bought-component policy percentage: a handling charge customary in that industry.

(ii) *Net Standard Value.* The calculation of this is more complex. The first step is to divide the range of products made

by the firm into a number of categories; in each category the products differ in one important dimension, usually size: for example the surface area of bearings or the horsepower of motors.

Then, from each product category, a sample of recent orders, covering the whole size range, is selected. These orders are discussed with the sales manager to see if they are in any way atypical – the prices of such orders would be adjusted. The resulting 'refined' prices are then adopted as 'trial values'.

Next the total bought-out values are calculated (or estimated) and subtracted from the trial values, giving the (trial) net standard values. These comprise two elements: feature values – such as those conferred by special finishes – and property values. The feature values can be quantified by comparing refined prices for products which did, and did not, contain specific features.

The relationships between the property values of products of varying sizes and their feature values are then expressed in a standard formula, chosen of course to give the best fit.

This formula is then utilised to yield the net standard value and (via the addition of the total bought-out value) the standard value for future orders.

(iii) *Market Percentage.* The procedure as applied up to now should have yielded a price structure for any product category that reflects the relative values to purchasers of the features (including size) of the various products in that category. However, there is no guarantee that the *level* of prices thus derived will be appropriate. The sample of prices utilised in deriving the values were for orders that had been competitive. But even in this period the prices might have been too high, failing to generate the volume of sales required, or too low, failing to generate the margins required.

Moreover, even if the prices were initially satisfactory, it is clear that they will become increasingly less satisfactory as, with the passage of time, changes occur in the level of demand, the number of competitors, and the capacity of the firm, etc. Hence an adjustment mechanism is required, and this takes the form of the market percentage. This is calculated as a percentage (plus or minus) of the net standard value and is applied across a given product category. The market percentage

can therefore be seen as the key strategic variable, and as such is subject to decision at the highest level.

The other variable which is subject to decision at this level is the quantity-order factor which is designed so as to encourage the pattern of order sizes desired by the firm. The application of the quantity-order factor to the target price yields the quantity-target price.

Finally, it is recognised that it may be sensible to give a limited degree of discretion to the sales department in their negotiations with customers. They are therefore able to modify the quantity-target price in either direction, but only within strictly predetermined and narrow limits.

One of the questions about P.A.P. that has not been satisfactorily resolved is how applicable it might be outside the particular situation (i.e. a large firm of jobbing engineers) in which it was developed. Its proponents are 'confident that its underlying rationale will be of value to any company which sells goods or services to customers'.[8]

Now if by rationale is meant paying attention to market conditions rather than purely to cost estimates of dubious ability, one cannot demur. However, this is quite different from investing a fair amount of management time in devising a comprehensive method which may not in the end be appropriate for that market.

For example parts of the textile industry have some characteristics in common with jobbing engineers. In particular, firms may be required to deal quickly with a large number of orders for a wide range of products for which there are no price lists, or at least where the price lists are accepted as forming only a basis for bargaining. Nevertheless the differences between the two markets may be such as to render P.A.P. of little use in textiles.

First a decision in price may have to be taken very quickly indeed, often during negotiations with a potential customer, so that the possibility of referring back to the 'pricing analyst' does not exist.

Second, 'size' may be a much less appropriate dimension by which to distinguish between different members of a product category. To take an extreme but not unrealistic example, the amount of yarn in a piece of cloth will depend not only upon

the length and width of the cloth, but also on the closeness of the weave – and this may not be reflected in the price in any consistent way. Fashion may decree that a close weave is either more or less desirable than an open weave.

It may be that the closeness of the weave should be treated as a special feature value rather than as a property value. However, this does not overcome the problem, since it remains very difficult to quantify special feature values which are subject to the dictates of fashion (and there will of course be many other examples in textiles). Further one can of course derive property values only if a firm quantification of special feature values is possible.

One final difficulty arising from the importance of fashion and the consequent short product life cycle is that the analysis of sales on which the pricing formula is based will require frequent revision; that is to say the investment cost will be increased.

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# Chapter 11

# Transfer Pricing, Pricing in Multinational Companies

In all the other chapters of this book we are concerned with the determination of the prices of products sold to external purchasers, whether these be manufacturers, distributors, or the ultimate consumers. In this chapter we turn our attention to the pricing of products that are transferred ('sold') internally, that is to say from one unit, department or division, etc., to another.

## THE IMPORTANCE OF TRANSFER PRICING

Such transfers represent an important part of the output of many firms. Of the 293 companies that replied to a questionnaire prepared by the British Institute of Management, 193 had a system of inter-unit trading.[1] In more than one-third of these firms, inter-unit sales accounted for between 10 and 25 per cent of total sales, a proportion which clearly necessitates a clear policy in respect of such sales.

The increasing importance of inter-unit sales is due partly to the emergence, often via a process of acquisition and merger, of large companies, and to the difficulties that arise in trying to centrally control and administer these companies.[2] A well-established method of trying to maintain the efficiency of the firm is decentralisation, which usually involves the setting up of a number of separate profit centres. A primary function of a transfer pricing system then becomes the reconciliation of the objectives of those responsible for the performance of the profit centres with the overall company objectives as defined by central management.

## THE NEED TO SPECIFY OBJECTIVES

This implies that before the merits of any particular transfer pricing system can be evaluated, it is necessary to specify the overall company objectives. Various writers have discussed transfer pricing in terms of one particular objective. For example Hirshleifer[3] concentrates on maximising the profitability of the company's existing productive facilities, where demand and cost functions can be specified precisely. On the other hand Dean[4] is much more concerned with the dynamic aspects of a firm's activities, including its response to a changing environment, and neglects the problem highlighted by Hirshleifer.

However, a general evaluation of transfer pricing systems requires that consideration should be given to a range of possible objectives.

The most important objectives impinging upon transfer pricing systems would appear to be:

(i) To foster, in those responsible for the performance of profit centres, a commercial attitude, that is to say one which focuses on profitably meeting the demands of customers rather than on narrower considerations such as cost reduction or meeting engineering specifications. This objective implies a dynamic, long-term view of profitability, with an emphasis on the development of managerial ability, and is the objective stressed by Dean.

(ii) To maximise the profits of the company over a given, relatively short, period of time; especially important here is the optimum utilisation of the existing (and especially the physical) assets of the company, the objective specified by Hirshleifer.

(iii) To optimise the allocation of the company's financial resources. This is a longer-term objective than the previous one in that it encompasses *additions* to the existing stock of physical assets. The allocation of resources is often influenced by the relative performances of the various profit centres, which in turn are influenced by transfer pricing policies.

(iv) To meet legal requirements: an objective which is likely

to be especially important where units are located in two or more countries and trade takes place across international boundaries.

In addition some companies adopt a managerial style involving a high degree of central control. This has important implications for pricing, both directly, and indirectly via the degree of freedom in trading given to the various units, a point which is discussed further below.

## TRANSFER PRICING SYSTEMS

Turning now to the alternative systems that might be adopted, the first broad distinction to be made is between a *laissez-faire* system, whereby units are allowed complete freedom to negotiate prices, and a centrally imposed system. A further distinction can then be made among centrally imposed systems, whereby prices are set in accordance with:

(*a*) market or outside prices;
(*b*) full cost plus a profit margin;
(*c*) full cost;
(*d*) variable, direct or marginal cost.

Some indication of the relative importance of these various systems is given in Table 11.1.

Table 11.1 *Percentage of Companies Using Different Transfer Pricing Systems*

| | *Negotiation* | *Market/ Outside price* | *Full cost plus* | *Full cost* | *Variable cost* |
|---|---|---|---|---|---|
| F.L. | 15 | 15 | 27 | 34 | 9 |
| B.I.M. | 23 | 38 | 21 | 9 | 9 |

The figures in Table 11.1 are taken from studies undertaken by the present author[5] and by the B.I.M. The data in the B.I.M. study is not, in fact, presented in this form and these figures should therefore be seen as an interpretation (hopefully sensible) by the present author, of the original data. On the whole the firms in the B.I.M. study gave greater emphasis to demand or market conditions and less emphasis to cost data than did the firms in the earlier study.[6] However, both studies

indicate that each of the five systems listed is used by an appreciable number of companies, and we now turn to an evaluation of these systems in the light of the objectives enumerated above.

## AN EVALUATION OF TRANSFER PRICING SYSTEMS

### *Negotiated Prices*

A system of negotiated prices will clearly contribute to the first objective: the fostering of a commercial attitude. Each unit will be encouraged on the one hand to supply at profitable prices what the market demands, and indeed to anticipate such demands, and on the other hand to obtain its inputs on the best possible terms (taking into account of course such factors as reliability and continuity of supply).

The success or failure of a unit in meeting these requirements will be indicated by its profitability record, a factor which often influences the allocation of the company's resources. Negotiated prices also score highly therefore in terms of the third objective.[7]

However, the cost of freedom may be that the success of one unit is earned at the expense of another unit, and in the last resort, of the company as a whole. This could occur when, for example, because of a price differential, one unit buys materials or components externally and leaves another unit with idle facilities which could have been used to supply these requirements.

In order to avoid the danger that overall profits may be reduced in this way the firm may impose constraints on external trading. The problem which then arises is that the system, thus modified, is less likely to meet the first and third objectives. Many companies therefore attempt to get the best of both worlds by imposing partial constraints.[8]

Another alternative is to continue to give the units complete freedom, but to ensure that as much information as possible is available to both units, and especially in this instance to the supplier, concerning (*a*) the price quoted by outside suppliers, (*b*) the breakdown of the internal supplier's costs, and (*c*) the

business potentially available both inside and outside the firm in the future. The advantages which may follow from the provision of information of this type have been demonstrated elsewhere by the author.[9]

*Prices based on Market or Outside Prices*

This system represents another attempt to avoid the disadvantages of negotiated prices,[10] while trying to retain their advantages. Internal prices are based upon the prices that the supplying division obtains from external customers or, if no external sales are made, upon the market price. Since outside or market prices will by and large be determined by market forces, it is claimed that the profits that result from transactions undertaken at these prices will provide a good indicator of the overall efficiency of the various units.

In fact there are good reasons to believe that the measure of efficiency generated may be distorted. When a unit is not trading externally the published statistics may be an inaccurate guide to the actual prices at which transactions are undertaken. As we have seen in earlier chapters, list prices may only be the point at which bargaining begins; for various reasons the majority of transactions may take place at prices below list. Companies often attempt to overcome this problem by putting out trial invitations to tender or by entering into negotiations without any intention to trade. However, such tactics can seldom be successfully pursued for any length of time; potential suppliers (or customers) will soon disappear or begin feeding bogus information.

Another possible source of distortion is the fact that selling costs will often be lower for internal sales, especially where external trading is constrained. This will have the effect of boosting the profits of the selling unit. To compensate for this many firms decree that the price for internal sales should be a given percentage below the external price.[11] However, it is clearly impossible to ensure that no distortion will remain.

*Cost-based Systems*

The three alternative cost-based systems are evaluated below,

and we can make the preliminary point that none of these systems is likely to be feasible if units have complete freedom in trading.

A price equal to variable cost will be very attractive to buying units but not to selling units who would find it more profitable to sell externally. A similar, although weaker, reaction may be expected when price is set equal to full cost. Finally, although a price equal to full cost plus a profit margin offers a greater incentive to sell internally, it still introduces an element of inflexibility which may have undesirable consequences.

The price may equal the average market price over a given period of time, and hence may generate a satisfactory level of internal sales under stable market conditions. However, many markets are not stable – they are subject to short-term disturbances, to imbalances between demand and supply. When demand exceeds supply the external price may rise above the internal price thus encouraging external sales; conversely when market demand falls short of supply external prices will tend to weaken, encouraging external purchases. Overall then, we conclude that problems are likely to arise with any cost-based system if no constraints on trading are applied.[12] It is therefore appropriate to discuss these three methods as implemented under constrained trading, evaluating their relative merits with particular reference to the second objective.

A price equal to variable cost is undoubtedly the most likely to lead to the maximum utilisation of capacity, and it is tempting to conclude that the profits of the company will thereby be maximised. This is indeed the conclusion arrived at by Hirshleifer, for example. However, this conclusion depends upon an assumption which may not be realistic, namely that the firm has complete knowledge about both its cost and demand conditions, so that it is able to identify precisely the profit-maximising price. As we have indicated in earlier chapters, the firm's knowledge may be far from complete, and it may feel that the safest way of coping with the uncertainty is to add a 'reasonable' profit margin to its price.

Although it is clear that setting a price for internal sales equal to variable cost will result in a lower cost base for the unit which sells externally than would a price equal to full cost (and, *a fortiori*, full cost plus), it does not follow that the price that is

set on this lower base will necessarily yield higher profits than would a price set on a higher cost-base. As we pointed out in the discussion of contribution pricing in Chapter 5, although a lower cost-base gives greater flexibility in pricing, whether this greater flexibility is desirable depends upon a host of factors. Until all these factors have been considered we cannot evaluate the relative merits of these three cost-based systems.

## TRANSFER PRICING IN MULTINATIONAL COMPANIES[13]

Transfer pricing becomes an even more complex issue when transfers are made across international boundaries, since the relative profitability of units located in different countries is highly sensitive to the prices at which these transfers are made.

The first obvious consequence is that, given the existence of differing rates of corporate taxation in different countries, transfer prices may be set so as to minimise the group's total tax liability. Again, where import taxes are levied on an *ad valorem* basis, the total tax paid will vary with the transfer price. A rather more specific example of the operation of tax regulations is that in some countries restrictions are placed on the amount that can be offset against taxable income, in respect of expenditures for administration, research and development, and marketing, etc., undertaken in the parent company on behalf of the foreign subsidiary. One way of recouping these costs is to increase the price of goods transferred to the subsidiary.

If, for any or all of the above reasons, the company wishes to set transfer prices so as to minimise its tax liability, then systems utilising market prices are likely to be inappropriate. A cost-based system, centrally prescribed, is required, although which of the three alternatives will be most appropriate will of course depend upon whether the need is for a given unit to charge higher or lower prices.

A greater measure of central control is also likely to emerge if substantial fluctuations in currency values occur. If it is felt that the currency of a particular country is likely to depreciate

in relation to the currencies of other countries in which the firm is represented, transfer prices may be adjusted so as to minimise the funds accruing in the country where depreciation is expected. A similar reaction may follow if limits are imposed or anticipated on the repatriation of profits.

Currency fluctuations may also lead to changes in the relative prices of products made in units located in different countries. In order to prevent changes in the pattern of trade, and hence in capacity utilisation, that might occur under a system of negotiation, constraints may be placed on units' freedom to trade and, by implication, to price.[14]

The same point applies to changes in the relative costs of different units. The most appropriate short-term response may be to prevent these cost changes being reflected in the pattern of sales and in capacity utilisation. However, in the longer term a redistribution of resources may be required.

Finally, if a unit in a foreign country is only partly owned, transfer prices may be set so as to minimise the profits earned by this unit and to maximise the parent company's profits.

There are therefore numerous factors which suggest that multinational companies may wish to exert central control over transfer prices.[15] However, there may be severe constraints on the use of transfer prices for the purposes that we have outlined.

In the United States the Inland Revenue Service has the power to reallocate income among members of a corporate group, while in the United Kingdom both the Inland Revenue and the exchange control authorities can have a say in the matter. Brooke and Remmers found that firms exporting to France had experienced particular difficulty with the customs authorities, who frequently challenged, and sometimes modified, the prices at which shipments were invoiced to subsidiaries.[16]

We identified as the fourth objective of a transfer pricing system that it should meet legal requirements, and the best way of doing this, and being seen to do so, may be to give units complete freedom in trading, and allowing them to negotiate prices 'at arm's length'.

A study by Arpan[17] suggested that managers of different countries may react in different ways to these conflicting sets of forces. He found that among small to medium-sized firms,

non-U.S. firms used market-based systems, while U.S. firms used predominantly cost-oriented ones. On the other hand Dunning found 'little evidence that, in intragroup transactions, U.S. firms either buy or sell at other than arm's-length prices. Neither the incentive nor the opportunity for international cost or profit shifting in favour of American subsidiaries in Britain is very great.'[18]

This lack of opportunity and incentive was also noted by Brooke and Remmers: 'Given the narrowing tax differentials and the many external and internal complications which arise from discretionary pricing, many companies questioned seriously whether there was enough in it to be worth while. In the purely domestic company the problems surrounding transfer pricing are complex and difficult enough, but with the added complexity of foreign operations, they can take a quantum leap in magnitude.'[19]

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# Chapter 12

# Retail Pricing

Much of the analysis presented in earlier chapters can be applied to retailing, and in this chapter we develop certain elements in the analysis which are of particular relevance to this sector of the economy. We take as our starting point the fact that retailers offer a wide selection of goods, and that consumers often make a purchase decision in respect of a 'basket' of goods, rather than a single product.

The consequence of this is of course that the retailer has to decide what policy is most likely to encourage consumers to patronise his shop rather than that of a competitor. The basic choice of pricing strategies (assuming that price is an important element of his marketing mix) is between a series of deep price cuts (i.e. in relation to the recommended or the usual competitive prices) on a limited number of products, and more modest cuts on a wider range of products.

## A DEEP-CUT STRATEGY

Until recently it was widely accepted that the former was likely to prove the better strategy. For example McClelland, writing in 1963, after declaring himself to be temperamentally in favour of the latter approach, concluded that 'Unfortunately the lessons of American experience, and the preference of the public here, too, seem to drive us to (the former)'.[1]

This approach was justified on the grounds that since the cost of search makes it difficult for consumers to judge whether the overall level of prices (or indeed the prices of the baskets of goods that they intend to buy) are lower in one shop or another, they will evaluate price on the basis of a sample of goods. Thus the retailer need reduce only a limited number of

prices, ensuring of course that the reductions are adequately advertised. The advocates of this approach could point to the fact that it had been adopted by the multiples, and especially the grocery multiples, who had rapidly increased their market share in recent years. The proof of the pudding was to be found in the eating.

More recent developments have suggested that the 'deep price cut' approach may not always be the most successful, even in groceries. In Britain the chains that have grown most rapidly during the 1970s have tended to follow the alternative policy.[2]

This is a point to which we return below. But let us accept that there will be in at least some circumstances grounds for adopting a policy which involves substantial differences in the gross margins earned on different products (as implied by the policy of deep cuts on a limited range of products), and ask what criteria might govern the pattern of margins.

We have pointed out in earlier chapters that a sound guide to pricing policies is that margins should vary inversely with the elasticity of demand. We have also shown that in manufacturing, price will continue to be reduced only so long as either the profit or the revenue[3] derived from the product continues to rise.

In retailing the prices of some products may be reduced beyond the point at which the profit and even the revenue derived from those products begins to decline. This may occur if the retailer believes that this loss will be outweighed by the revenue and profit derived from the other products bought by consumers who have been attracted into the shop by the price cuts. Putting the matter formally we can say that the higher the internal cross-elasticities among products, the more successful a policy of selective price cuts is likely to be.

Holdren[4] has suggested that the products for which the transfer effect (a similar concept to cross-elasticity) is likely to be greatest are those (*a*) which are purchased in multiple units, (*b*) whose price is high enough to permit a reduction which is easily perceptible, (*c*) which are of great budgetary importance, (*d*) which are advertised so heavily as to leave consumers highly price conscious. Products having one or more of these characteristics, and found by Holdren to yield low margins, included flour, tinned milk, baby foods, coffee, and sugar.

Products with a low transfer effect will of course include those which do not possess the above characteristics, for example condiments and shoe laces, and also products whose prices frequently change, for example fresh produce and impulse items such as potted plants.

Holdren recognised that it is not always easy to draw the line between these two groups of products, and that the transfer effect of any product may change over time.[5] He suggested that a factor of general importance in this context is the stocking by supermarkets of products – mainly non-food items – which were customarily sold by speciality shops or department stores at high margins. He hypothesised that when supermarkets begin to stock these products the transfer effect may initially be low, but that once consumers become accustomed to seeing such products on supermarket shelves, the transfer effect may become much greater.

This hypothesis has not been empirically tested. It is true of course that there has been in recent years a rapid development in many countries of large outlets – supermarkets, superstores, hypermarkets – which sell a wide range of goods, both food and non-food, and there are doubtless examples to be found of high transfer effects among some of these 'non-traditional' items. However, an equally important consideration in these outlets is the high own-price elasticity attaching to some of these products, together of course with the convenience to the consumer of finding a wide product range under one roof.

## AN ALTERNATIVE STRATEGY

We referred earlier to the fact that much of the running in the U.K. grocery market in recent years has been made by firms which have adopted a policy of cutting prices across the board. Some indication of the advantage in price offered to consumers by these firms is given in a study of food prices in the North of England.[6] A survey of the prices of 120 food products showed that while the cheapest conventional multiple store sold this basket at 12·5 per cent below the recommended prices, the nine 'discounters' sold at from 14·3 per cent to 18·9 per cent below, the majority tending towards the higher figure.

It is much too early to conclude that this alternative strategy has now become 'the best'. Indeed the most likely outcome of the competition between firms adopting these alternative strategies is that both will survive, each appealing to groups of consumers having somewhat different requirements and attitudes. Nevertheless the indications are that current economic conditions, with a rapid rate of inflation, favour the 'across the board' policy.

We referred in Chapter 4 to the fact that in such conditions consumers may become confused about the market price of individual products. It also appears that this confusion may be accompanied by irritation when frequent price promotions make the identification of price even more difficult. In a series of group interviews recently undertaken on behalf of Harris International Marketing, comments such as the following were reported: 'The prices fluctuate so much from week to week it makes you sick.' 'It makes me mad the way things cost one price here and another there – you don't know where you are.'[7]

It was found that while some of the housewives had reacted to the situation by seeking more energetically to take advantage of special offers, especially by buying such products in bulk, others, and particularly the working wives, had reacted by making an increasing proportion of their purchases at one shop.

Housewives in this latter group were predisposed to patronise shops which offered a greater degree of price stability, that is did not have frequent price promotions: 'I'd sooner go to Sainsbury's because they simply put their price on it.' 'At Marks and Spencer "the price" is what you pay.'[8]

Comments such as these can be seen as reflecting the value-for-money image of the retailers concerned. Another aspect of the overall image of retailers is the extent to which their customers see the prices of different products as an indicator of their quality.

Consumers' attitudes on this point are especially important for the large retailer who stocks many categories of goods, since he has of course the greatest scope for varying the margins among these categories. In this context research undertaken in 1974 by Harris International Marketing is of considerable interest. Some 700 housewives were asked whether, for each of ten groups of products, they would:

Table 12.1 *On Which Product Groups Do Consumers Economise?*

| | *Fresh fruit and Veg.* | *Packaged foods* | *Fresh meat* | *Provisions* | *Dairy products* | *Alcoholic drinks* | *Bread, Cakes* | *Tobacco goods* | *House-hold goods* | *Clothing* |
|---|---|---|---|---|---|---|---|---|---|---|
| (*a*) | 46 | 56 | 39 | 40 | 43 | 61 | 49 | 60 | 61 | 36 |
| (*b*) | 25 | 30 | 26 | 27 | 26 | 23 | 28 | 22 | 25 | 26 |
| (*c*) | 19 | 10 | 21 | 20 | 19 | 12 | 16 | 13 | 9 | 24 |
| (*d*) | 11 | 4 | 15 | 13 | 12 | 5 | 8 | 4 | 5 | 14 |

(*a*) definitely buy as cheaply as possible;
(*b*) probably buy as cheaply as possible;
(*c*) probably not try to economise;
(*d*) definitely not try to economise.

Their answers are summarised in Table 12.1.

Table 12.1 suggests that consumers are likely to respond more favourably to lower price levels for household goods, alcoholic drinks and packaged foods, than for fresh meat, fruit and vegetables and clothing. This would be an entirely rational response in view of the greater proportion of well established brands occurring in the former groups of products.[9]

## OTHER INFLUENCES ON THE PATTERN OF MARGINS

Even for a narrowly defined product group various other factors, relating to either demand or cost conditions, may influence the pattern of margins. For example on the demand side possible changes in fashion and obsolescence would make for higher margins, as demonstrated in Table 12.2.

Table 12.2 *Percentage of Items with Mark-Ups Exceeding 57·5 per cent, Multiple Shoe-shops, 1968*

| | |
|---|---|
| Expensive unbranded ladies' fashion shoes | 43% |
| Cheap unbranded ladies' fashion shoes | 24% |
| Expensive unbranded men's shoes | 27% |
| Cheap nationally branded men's shoes | 11% |
| Nationally branded child's T-bar shoes | 0% |

*Source:* National Board for Prices and Incomes, *Report No. 97* (London: H.M.S.O., 1968) p. 67.

Again the nature of the product will influence the costs which are incurred in storing and selling that product. Abstracting from demand conditions, a higher incidence of costs should be reflected in higher gross margins.[10]

The extent to which the incidence of costs might vary from one product group to another was indicated by the results of a study undertaken in two supermarket chains.[11]

Operating costs (i.e. all costs other than the cost of the goods

and head office expenses) were found to vary between 5·5 per cent and 39·4 per cent of sales value. (The factors responsible primarily for high-cost figures were low turnover – leading to poor use of shelf and warehouse space – low unit value, and the use of specialist labour.) The differences which can arise in the ranking of products following the allocation of costs are illustrated in Table 12.3.

Table 12.3 *Gross and Net Margins, Multiple Grocery Chain*

| *Costs (% of Sales)* | *All commodities* | *Canned vegetables* | *Butter* |
|---|---|---|---|
| Labour | 6·0 | 10·3 | 2·2 |
| Packaging material | 0·3 | – | 0·4 |
| Rent and rates | 2·5 | 2·2 | 0·6 |
| Lighting and heating | 0·6 | 0·4 | 0·2 |
| Other expenses | 1·5 | 2·1 | 1·0 |
| Central warehouse and delivery | 1·5 | 6·1 | 1·1 |
| Total operating costs | 12·4 | 21·1 | 5·5 |
| Gross margin | 17·4 | 21·6 | 10·7 |
| Net margin | 5·0 | 0·5 | 5·2 |

While the full implication of these figures for pricing would require a consideration of demand conditions (including cross-elasticities), it seems likely that the allocation of costs would lead to a different pattern of prices than would emerge if only gross margins were taken into account.[12]

## CHARM PRICES

At the tactical end of the policy spectrum are decisions relating to charm prices, prices which are thought to be particularly meaningful to consumers (e.g. £1·99). With the virtual disappearance of resale price maintenance this decision has become firmly the retailer's responsibility, and there is evidence that in many markets charm prices are well established. However, there is also evidence to suggest that this may not represent sound pricing. The adoption of charm prices clearly introduces an element of rigidity into the price structure, a rigidity which may not be compensated for by higher sales. Georgoff, reporting on a sales test carried out in six department stores and involving

eleven products over a four-week period, concluded that any measured effect was relatively weak.[13]

## TRADING STAMPS

Trading stamps may be seen either as a form of promotion or as an indirect price reduction. Their use spread very rapidly in the post-war period, first in the United States and then in Britain, although in the latter country they have been consistently resisted by several of the most prominent retail chains. A very extensive literature exists on the effects of stamps. This is surveyed by Pickering, who tentatively concludes that the evidence suggests that 'under normal conditions trading stamps are an effective and worth-while form of promotion to retailer and consumer'.[14]

## RETAIL PRICING: SUMMARY

It is not possible to do full justice to retail pricing within the scope of a single chapter. However, we have shown that a wide range of options is open to the retailer at both the strategic and the tactical level. When we add to these the many different forms of non-price competition, the alternative competitive stances that can be adopted by the retailer are very varied. The substantial shifts that have occurred in the market shares of different types of retailer[15] are indicative of changes in competitive stances and of the consequent reactions of consumers. With the current intensification of competition, change will continue to be the order of the day.

## FURTHER READING

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# Chapter 13

# Legal Constraints on Pricing Decisions

In most countries pricing decisions are constrained, either directly or indirectly, by the legal framework. In this chapter we discuss the most important features of the constraining legislation in the United States, the United Kingdom, and the European Economic Community. We begin with the United States because it has the longest history of significant constraints on pricing decisions.

## LEGISLATION IN THE UNITED STATES

### *Collective Price Agreements*

The basis of legislation in the United States was laid by the enactment in 1890 of the Sherman Act, section 1 of which states that 'Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states or with foreign nations, is hereby declared to be illegal.'

Some of the earliest cases brought before the courts established that agreements between independent firms to fix prices violated this section of the Act. Moreover this applied regardless of the level at which prices were fixed.

The classic statement of this '*per se* principle' occurs in the judgement delivered by Mr Justice Stone in United States *v.* Trenton Potteries Co. (1927): 'The aim and result of every price fixing agreement, if effective, is the elimination of one form of competition. The power to fix prices, whether reasonably

exercised or not, involves power to control the market and to fix arbitrary and unreasonable prices. The reasonable price fixed today may through economic and business changes become the unreasonable price of tomorrow.'

The principle was reaffirmed in United States *v.* Socony-Vacuum Oil Co., which reached the Supreme Court in 1940. We showed in Chapter 2 that price agreements might be especially valuable to companies concerned to prevent a fall in price in depressed market conditions. Such circumstances occurred in the U.S. oil market in the early 1930s; a combination of falling demand and the discovery of new oilfields in Texas created severe difficulties for the small, independent producers of crude oil and the small refiners who, in order to raise cash, sold petrol at extremely low prices. In order to try to put a floor beneath prices, the major producers began to buy up supplies of this distress petrol. However, the Supreme Court made it clear that even in these circumstances collectively agreed policies designed to influence the level of prices would not be tolerated: 'Ruinous competition, financial disaster, evils of price cutting and the like appear throughout our history as ostensible justifications for price fixing. If the so-called competitive abuses were to be appraised here, the reasonableness of prices would necessarily become an issue in every price fixing case. In that event the Sherman Act would soon be emasculated; its philosophy would be supplanted by one which is wholly alien to a system of free competition.'

### *Information Agreements*

Faced with this uncompromising attitude on the part of the courts towards formal price agreements some attempts have been made to influence the level of prices by other means, one of the foremost being the information or open agreement.

The basic feature of such agreements is that firms file with a central agency, such as a trade association, information relating to prices currently being charged for their products.[1] Given that this information is normally available for inspection by all members, it is clear that it *may* have the effect of inhibiting competition. The task facing the courts has been to decide whether this amounts to an agreement or conspiracy to limit

price competition. The difficulty inherent in this decision is indicated by experience in the United States, with some cases having been decided for the prosecution and some for the defendants.[2]

### *Price Leadership*

Information agreements are clearly a less-rigorous method of exercising influence over price than formal price agreements. Further along the spectrum still is price leadership, where one firm is accepted as the initiator of price changes.

In some instances a 'natural' price leader may emerge, perhaps the largest or lowest-cost firm, and here there is clearly no implication of any agreement to restrict competition. In other instances, however, a price leader may be chosen by the members of an industry, and this might well be considered as evidence of an intention to restrict competition.[3]

### *Delivered-price Systems*

In Chapter 6 we indicated that certain types of delivered-price systems, and especially basing-point systems operated on an industry-wide basis, had encountered legal difficulties. The basic objection raised by the authorities to such systems is that they eliminate one aspect of price competition, that is, that which might arise from differences in the distance between different suppliers and a given customer. This disadvantage will clearly be greater with a single than a multiple basing-point system. Moreover it is easier to infer collusion in the former system.

In Federal Trade Commission *v.* United States Maltsters Association, 1945, the Supreme Court noted that all prices were calculated from the single basing-point of Chicago, and concluded that 'The fact that the petitioners utilized a system which enabled them to deliver malt at every point of destination at exactly the same price is a persuasive circumstance in itself. Especially is this so when it is considered that petitioners' plants are located in four different States.'

A multiple basing-point system is easier to defend as being both a lesser degree of restriction on competition and a more

natural or spontaneous development. Indeed in such instances the courts have tended to look for additional evidence of collusion such as uniformity of prices over a prolonged period.

## PRICE COMPETITION AND MONOPOLISATION

The general implication of the legislation relating to collective agreements on pricing is that the prices which result from such agreements are likely to be higher than they would otherwise be. A quite different matter of concern to legislators is the possibility that firms may reduce prices in order to drive competitors out of the market, or discourage potential new competitors from entering.

This policy can also run foul of the Sherman Act, which states in section 2 that 'Every person who shall monopolize, or combine or conspire with any other person or persons to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be guilty of a misdemeanour.'

In addition section 2 of the Clayton Act, 1914, declared price discrimination to be illegal, while section 5 of the Federal Trade Commission Act (as amended by the Wheeler-Lea Act of 1938) reads: 'Unfair methods of competition in commerce and unfair or deceptive acts or practices in commerce are hereby declared illegal.'

It can be seen that a firm wishing to engage in vigorous, aggressive price competition should tread warily.

One of the best known cases to be brought under section 2 of the Sherman Act was United States *v.* The New York Great Atlantic and Pacific Tea Co. (1949). A. & P. is a vertically integrated group which at the time of the hearing had some 5800 retail stores. The court found that the company aimed at different rates of return from its stores according to the degree of competition they had to face, and that in some instances 'the gross profit rate is fixed so low that the store runs below the cost of operation', with the consequence that some competitors had been forced out of existence.

Another principle that has been established is that if a company which has already achieved, legally, a monopoly

position, follows pricing policies which might be considered to be sound commercial practice, but which have the effect of buttressing this monopoly position, then these practices may be judged to be illegal. This was demonstrated by the decision in United States *v.* United Shoe Machinery Corporation (1953).

This principle will no doubt form an important part of the debate arising from the charge brought by the Justice Department against I.B.M. which reached the courts in 1975 after six years of preparation. The basic policy challenged by the Justice Department was the charging of an inclusive price for hardware, software, and peripheral equipment. This policy was said to have discouraged the emergence of competitive suppliers of peripheral equipment and software houses. Moreover I.B.M.'s preference for leasing rather than outright sales had enormously increased the financial resources needed to compete in the industry.

## PRICE DISCRIMINATION

Although, as shown by the A. & P. case, price discrimination can be dealt with under the Sherman Act, most cases have been brought under the Clayton and, more recently, the Robinson-Patman Act, section 2 of which declares that 'It shall be unlawful for any person engaged in commerce . . . to discriminate in price between different purchasers of commodities of like grade and quality . . . where the effect of such discrimination may be substantially to lessen competition or to tend to create a monopoly.'

Exemptions from the provisions of the Act are possible, for example where differences in price reflect differences in costs,[4] or where they are required to match a competitor's price, and the courts have usually been concerned not with the question of whether discrimination existed, but whether it could be legally justified. The problems of interpretation facing the courts have been noted by Neale, who comments: 'Such differing views of how strictly the businessman should be required to justify differences of price by reference to costs continue to worry the business community and cause controversy in the United States.'[5]

Neale goes on to point out that although it now appears that aggregate rebate systems, which an early judgement implied might be illegal, can now be justified, this requires that 'some genuine and reasonably thorough study of costs has to be made and followed'.[6]

## RESALE PRICE MAINTENANCE

Before examining the legislation as it has affected resale price maintenance it is appropriate to outline the implications of R.P.M., beginning with the implications for manufacturers.

If the product is one whose quality is judged on its price, then it may be in the manufacturer's interest to control its retail price. Similarly if the manufacturer wishes to restrict the number of outlets stocking his product, preferring to see it sold by specialist shops rather than mass merchandisers, but is unable to exercise direct control over the distribution system, price maintenance will minimise the incentive to mass merchandisers to stock the product.

More generally price maintenance means that manufacturers have more responsibility *vis-à-vis* retailers for promotional pricing policies, thus minimising the dangers of unforeseen fluctuations in sales. Another danger that is minimised is that heavy retailer promotions may lead to such a reduction in retail margins that pressure builds up for a reduction in the manufacturer's price.

As against these advantages of R.P.M. there is the general disadvantage that it leads, via higher retail margins, to higher prices and hence, presumably, to a lower volume of sales overall.

It is clear that R.P.M. has very different implications for different types of retailer (and for their respective customers). Not surprisingly the practice has been strongly supported by some retailers, and equally strongly resisted by others.

The difficulty in drawing a balance between these conflicting interests is at least a partial explanation of the fluctuations that have occurred in the legal position of R.P.M.

Early decisions under the Sherman Act held that R.P.M. constituted undue restraint of trade and hence was illegal.

Furthermore the courts were reluctant to sanction policies which involved cutting off supplies to price-cutters.

However, in the 1930s various of the States passed 'fair trade' Acts in support of R.P.M. California led the way in 1931, by 1935 ten States had such laws, and by 1941 the number had grown to forty-five. All these Acts applied only to intra-state trade; But in 1937 Congress passed the Miller-Tydings Act, which amended the Sherman Act by providing that nothing in that Act should 'render illegal contracts or agreements prescribing minimum prices for the resale of a (branded) commodity . . . when contracts or agreements of that description are lawful as applied to intra-state transactions'.

In 1952 the McGuire Act was passed to ensure that a manufacturer could enforce price maintenance even with individual retailers with whom he had not entered into a contract ('non-signers'), but who had bought via an intermediary, for example from a wholesaler.

Hence since 1952 the legality of R.P.M. in inter-state trade has been firmly established. Ironically, however, the post-war period has seen a retreat from the high point reached on intra-state trade in 1941, especially in respect of the position of non-signers. In only eighteen States is R.P.M. now enforceable against non-signers.

## SANCTIONS

Severe penalties can be imposed for infringement of the law. In 1960 twenty-nine firms, convicted for conspiracy to fix the prices of electrical equipment, were fined a total of almost two million dollars. However, more serious is the liability of offending firms, following any successful civil action, to damages equal to triple the amount of loss suffered by a customer as a result of price-fixing. So, in one of the hundreds of civil suits brought against these manufacturers, a Federal Court awarded to the Ohio Valley Electrical Corp. and the Indiana–Kentucky Electric Corp., damages against General Electric and Westinghouse of $16·8 millions, triple the amount which the plaintiffs claimed to have been overcharged for eleven turbine units bought in 1952. Again, arising from its pricing policies noted

above, I.B.M. has been the subject of numerous civil suits, in one of which Control Data received damages of $100 millions.

## LEGISLATION IN THE UNITED KINGDOM

Legislation designed specifically to influence the pricing activities of firms is of much more recent origin in the United Kingdom than in the United States. Moreover when the first legislation was introduced in the post-war period it differed from American legislation in that it eschewed *per se* rules, adopting instead the pragmatic approach that had characterised judgements delivered in earlier, common law, cases.

## COLLECTIVE PRICE AGREEMENTS

The first Act seriously to curb firms' freedom of action was the 1956 Restrictive Trade Practices Act. This act was framed in the knowledge, largely derived from the investigations of the Monopolies Commission, that collective price agreements existed in many industries. The 1956 Act laid down that agreements between two or more persons carrying on business in the production or supply of goods, under which restrictions are accepted by the parties in respect of the prices to be charged, had to be registered with the Registrar of Restrictive Trading Agreements (under the Fair Trading Act of 1973 the functions of the Registrar were taken over by the Director-General of Fair Trading).

The Act is based on the presumption that restrictions on competition operate against the public interest, and although the parties to an agreement can attempt to justify it, they can do so only on one of the following grounds, laid down in the Act:

(*a*) that the restriction is reasonably necessary to protect the public against injury;

(*b*) that the removal of the restriction would deny to the public, as purchasers, consumers or users of any goods, specific and substantial benefits;

(*c*) that the restriction is reasonably necessary to counteract

measures taken by a person, not party to the agreement, with a view to restricting competition;

(*d*) that the restriction is reasonably necessary to enable fair terms to be negotiated with a large supplier or purchaser;

(*e*) that the removal of the restriction would be likely to have a serious and persistent adverse effect on unemployment in areas in which the industry is concentrated;

(*f*) that the removal of the restriction would be likely to cause a substantial reduction in export business;

(*g*) that the restriction is reasonably required for the purpose of supporting other restrictions in the agreement which are in the public interest;

(*h*) that the restriction does not directly or indirectly restrict or discourage competition to any material degree in any relevant trade or industry, and is not likely to do so.[7]

The cases are heard by the Restrictive Practices Court, which comprises both legal and lay members. In addition to successfully negotiating one of the eight gateways, the parties to the agreement have to satisfy the Court that the benefits which they have demonstrated are sufficient to outweigh any disadvantage to the public which is found to arise from the agreement.

Although the British legislation is more flexible than that of the United States in that it permits discussion about the reasonableness (or otherwise) of particular policies, it has proved very difficult to win the Court's approval for price-fixing agreements, and the vast majority of the agreements that were initially registered were abandoned in the light of the Court's decisions on the early cases.

In the minority of collective price agreements that have been successfully defended the benefits have been accepted by the Court as arising from, and justifying, the agreements; included are the exchange of technical information (Permanent Magnet Association), a reduction in purchasers' 'cost of search' (Black Bolt and Nut Association), a level of prices lower than they might otherwise have been (Cement Manufacturers' Federation) and the maintenance of a widespread distribution network (Net Book Agreement of the Publishers Association).

## INFORMATION AGREEMENTS

Information agreements were brought within the scope of legislation under section 5 of the 1968 Act, whereby they became registrable, in the same way as formal agreements, under the 1956 Act. The first two such agreements were referred to the Court in 1970 and orders obtained upon them.

## THE FAIR TRADING ACT

A further tightening of the legislative screw occurred as a result of the passing in 1973 of the Fair Trading Act, part X of which provided for the extension of the legislation to restrictive agreements and information agreements affecting the supply of commercial services. While the Act did not in itself make these agreements registrable, it did contain a provision for particular classes of agreement to be 'called up' for registration after reference to Parliament. (Some agreements, such as that relating to fire-insurance rates, had already been abandoned following adverse reports by the Monopolies Commission.)

## SANCTIONS

Since price agreements are not illegal *per se* in the United Kingdom, the question of 'punishments' for price fixing does not arise. However, if firms continue to adhere to an agreement that has been declared against the public interest, they lay themselves open to a criminal charge of contempt of court.

So in 1962 eight members of the Galvanized Tank Manufacturers' Association were fined a total of £102,000. This fine was in itself relatively trivial. However, when announcing the Court's verdict Mr Justice Megaw warned that future actions for contempt could well be taken against specific officers, which would raise the possibility of prison sentences.

## PRICE COMPETITION AND MONOPOLISATION

The early reports of the Monopolies Commission contained numerous examples of policies designed to harm competitors. After the passing of the 1956 Act the scope and size of the Commission were reduced. However, the Commission was expanded once more under the 1965 Monopolies and Mergers Act, which reflected increasing concern about the rate at which the level of industrial concentration was increasing.

Since then a flow of reports has continued from the Commission. But the emphasis has been much more on proposals for mergers than on the activities of existing 'monopolists'. Although further publicity has been given via these reports to price differentials and discrimination, there has never been any suggestion that we are likely to see a British equivalent to the Robinson-Patman Act.

The 1965 Act gave the Government the power to control the general price level of existing monopolists, and the Monopolies Commission's *Report on the Supply of Ready-Cooked Breakfast Cereals*[8] contained a recommendation that the prices and profits of the major producer, Kelloggs, should be placed under surveillance so as to guard against the possibility of future abuse. This recommendation was accepted by the Government; however, the effect of the recommendation became swamped by the general effects of price control subsequently introduced in the United Kingdom and discussed below.

The 1973 Fair Trading Act reduced the market share qualifying for reference to the (renamed) Monopolies and Mergers Commission from one-third to one-quarter, an indication of the government's continuing concern about the potentially adverse consequences of monopolisation.

## RESALE PRICE MAINTENANCE

We referred in our discussion of American experience to the fact that R.P.M. may have both advantages and disadvantages and that the progress of legislation had reflected this duality. This is in fact nowhere more true than in the United Kingdom.

The 1956 Act, while making collective R.P.M. much more difficult, strengthened the hand of individual manufacturers who wished to enforce resale prices. Eight years later the 1964 Resale Prices Act virtually reversed this latter situation.

The 1964 Act was based upon the presumption that distributors, and especially retailers, who wished to try to expand their sales by reducing their prices should not be prevented from doing so by manufacturers. Consequently manufacturers were forbidden to enforce resale prices unless they could demonstrate to the Restrictive Practices Court that, in the absence of R.P.M., one of the following detriments to the public would follow:

(*a*) the quality and variety of goods available for sale would be substantially reduced;
(*b*) the number of establishments in which the goods are sold by retail would be substantially reduced;
(*c*) retail prices would increase;
(*d*) goods would be sold under conditions likely to cause danger to health in consequence of their misuse by the public;
(*e*) any necessary services actually provided in connection with, or after the sale of the goods by retail, would cease to be provided or would be substantially reduced.

It has proved very difficult for manufacturers to sustain a case for R.P.M., only the manufacturers of books, maps, and certain medicaments having been successful.

In a report issued in 1969 the Monopolies Commission concluded that the practice of recommending resale prices might sometimes have consequences similar to those arising from resale price maintenance. While the Commission did not recommend the prohibition of the practice, it suggested that it should be kept under review. In 1973 the Fair Trading Act gave the power to prohibit the recommending of resale prices, although this power has not been used to date.

## GOVERNMENT CONTROL OVER PRICES

Firms' pricing discretion may also be limited by government action designed to control the general level of prices and incomes. In Britain prices and incomes policies have usually

been administered by a specially constituted body (currently the Price Commission) whose primary function has been to recommend whether a particular proposed price (or wage) increase should be granted.

Criteria were laid down as guidance to the Price Commission in its evaluation of proposed price increases. Changes in unit costs are the main justification for price increases, although increases might also be allowed if they were required to generate funds for new investment, or to prevent losses occurring.

Some idea of the scope and scale of the Price Commission's activities can be obtained from Table 13.1.

It is not known to what extent the notified increases were deliberately inflated, and hence what significance should be attached to the modifications imposed by the Price Commission. However, the profits of companies, when measured in real terms, did suffer, and this led to some relaxation in the provisions of the Price Code at the end of 1974.

## LEGISLATION IN THE EUROPEAN ECONOMIC COMMUNITY

Experience in both Britain and America has shown that the effect of legislation relating to competition is as much influenced by the interpretation of the Courts as in any other branch of the law. Given the further fact that legal proceedings are seldom speedily concluded, it follows that the discussion in this section must be largely confined to what appears to be the intention of the law. An evaluation of its actual effect will not be possible for some time yet.[9]

## COLLECTIVE PRICE AGREEMENTS

One of the provisions of Article 85(1) of the E.E.C. Treaty is the prohibition of agreements that prevent, restrict or distort competition within the community and affect trade between Member States, including in particular those agreements which 'directly or indirectly fix purchase or selling prices or any other trading conditions'. This applies to both horizontal and vertical agreements.

Table 13.1 *Category I Notifications Dealt with by Price Commission 1974/5*

| | *Mar 1974–May 1974* | *June 1974–Aug 1974* | *Sep 1974–Nov 1974* | *Dec 1974–Feb 1975* | *Mar 1975–May 1975* |
|---|---|---|---|---|---|
| Increase notified (%) | 9·5 | 8·6 | 11·6 | 12·2 | 7·1 |
| Increase resulting (%) | 7·6 | 7·4 | 5·8 | 11·5 | 6·8 |
| Reduction (£m) (annual rate) | 118 | 52 | 351 | 64 | 28 |
| Reduction (%) | 19·8 | 14·2 | 50·0 | 5·4 | 4·7 |

*Source:* Report of the Price Commission for the Period 1 March to 31 May 1975.

It has already been established that the Article does not refer only to formal agreements, but that uniform prices resulting from informal co-operation among firms may be treated as evidence of 'a concerted practice' to fix prices.[10]

If firms located in different Member States agree on the price that each will set within its own country this will almost certainly affect trade between these countries. Moreover international price agreements of this type are likely to be extended to encompass agreements on market sharing and perhaps also quotas, as in the Quinine case (1969).

Again agreements between undertakings situated in the same Member State fall under Article 85(1) where the parties fix the prices or conditions of sale in respect of exports to be made to other Member States. This might prove to be of particular interest to U.K. firms in view of the fact that a beneficial effect on exports is one of the 'gateways' in the Restrictive Trade Practices Act (see above).

Whether other 'national' price-fixing agreements fall within the Treaty will depend upon the facts of the particular case. One agreement that was held to do so was the German Ceramic Tiles Agreement (1971), in which an association of manufacturers collectively agreed upon a uniform schedule of quantity discounts. One element in the schedule was the total quantity of ceramic tiles bought from all German producers within a given period, a provision which clearly discriminated against producers in other countries.

Similar collective agreements to enforce the resale prices of imported goods, and of exports, have been held to fall within the scope of Article 85(1).

Looking briefly at possible substitutes for formal price agreements, the Commission has held that both the collective recommendation of target prices (VCH *v.* European Commission, 1973) and price information agreements (Re WVF, 1970) may lead to a restriction of competition and hence are capable of falling under Article 85(1).

## RESALE PRICE MAINTENANCE

In its First Report on Competition Policy, 1972, the Com-

mission stated that purely national systems of (individual) resale price maintenance do not in general fall under the Treaty, although they may of course be contrary to the law of an individual Member State. An interesting situation arose in connection with the German law which permits R.P.M. provided that it is enforced so that all undercutting is prevented. One of the enforcement mechanisms which may be required is a ban on the export and re-import of goods. The Commission held (Agfa-Gevaert, 1970) that this artificially protected the German market, and hence fell under Article 85(1). The effect of these decisions has been seriously to weaken R.P.M. in Germany.[11]

## PRICE DISCRIMINATION

Price discrimination by an individual firm is most likely to be dealt with under Article 86 of the Treaty, which aims to regulate the abuse of economic power by any firm having a 'dominant' market position.

The relevant sub-paragraphs of Article 86 are (*a*) and (*c*): 'Such abuse may, in particular, consist in:

(*a*) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;

(*c*) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage.'

Although there is at present very little experience of the implementation of this part of Article 86 it is clear that it could inhibit aggressive pricing policies designed to increase sales to a particular group of customers or in a given geographical area. Also one could foresee the possibility of certain geographical pricing systems, for example some basing-point systems, falling foul of this Article.

One case which is relevant in this respect is that concerning Gema, a German authors' rights society, against which the Commission instituted proceedings in 1970. One of the charges was that Gema had discriminated against independent importers by levying the whole licence fee on imported gramophone records, although a licence fee had already been paid, either

to Gema or to another authors' rights society; that is to say the 'price' to importers was effectively double that charged to domestic manufacturers.

## THE EUROPEAN COAL AND STEEL COMMUNITY

All firms in the coal and steel industries of the Common Market are subject to the provisions of the Treaty of Paris which established the European Coal and Steel Community. Article 60 of this treaty prohibits: 'unfair competitive practices, especially purely temporary or purely local price reductions tending towards the acquisition of a monopoly position within the Common Market; discriminatory practices involving, within the Common Market, the application by a seller of dissimilar conditions to comparable transactions, especially on grounds of the nationality of the buyer.'

These provisions are clearly similar to those contained in U.S. legislation, there being in both instances an implication that differential pricing may be practised, but only where the differentials can be justified either by cost differentials or by the need to meet competition.

The treaty also makes provision, in Article 66, for the imposition of penalties on any firm which is found to have abused a dominant market position; clearly, particular pricing policies might be seen as constituting abuse.

## LEGISLATION AND PRICING: SUMMARY

The fact that legislation may impinge upon pricing decisions at so many points indicates that these decisions are as important to the community as to the firm. Sound pricing policies will of course take this fact into account, although, as we have shown, it may not always be obvious precisely how, and when, any particular piece of legislation is likely to 'bite'. This uncertainty is particularly great in multinational companies, who may have to take into account several quite different legislative frameworks. In such companies especially, the legal executive will add his voice to the many others which contribute to pricing decisions.

## FURTHER READING

E. T. Grether, 'Pricing Practices and Anti-Trust' in *Prices: Issues in Theory, Practice and Public Policy*, ed. A. Phillips and D. E. Williamson (Philadelphia: University of Pennsylvania Press, 1967).

A. D. Neale, *The Anti-Trust Laws of the U.S.A.*, 2nd edn (Cambridge: Cambridge University Press, 1970).

J. F. Pickering, *Industrial Structure and Market Conduct* (London: Martin Robertson, 1974) chs 12, 15.

D. V. Harper, *Price Policy and Procedure* (New York: Harcourt, Brace & World, 1966) ch. 4.

R. A. Lynn, *Price Policies and Marketing Management* (Homewood, Illinois: Irwin, 1967) chs 12, 16.

# Chapter 14

# Pricing: Art or Science

Professor Oxenfeldt concluded a recent article with the following words: 'The corporate pricing function within a decision-making structure is a very complex process. Many components must be integrated and managed as a unit if the firm is quickly to capitalize on its pricing opportunities.'[1]

It is hoped that the preceding chapters will have given some idea of the extent of that complexity to which Oxenfeldt refers. In this final chapter we briefly present evidence which suggests that some firms are coping with this complexity, are managing the pricing function, less well than they might.

In a study of the pricing policies of thirteen firms 'among the best known and most efficient in Britain',[2] Hague noted that the models used by firms 'were not always sufficiently complex to ensure that all relevant information was included. Nor were they rigorous enough to ensure that the analysis of this information was always satisfactory.' One of Hague's other conclusions was that 'One of the most striking features of the pricing decisions we studied was the almost complete absence of a pricing strategy, lying behind individual decisions, that took account of dynamic elements in the situation.' Moreover 'We feel that the need for a feedback process to monitor the results of pricing should be emphasized. . . . Such control procedures could probably be improved in many firms. . . . Where pricing decisions were taken by individuals, there seemed to be little attempt to ensure that the effect of these decisions on profitability was checked and monitored.'[3]

Specific examples of the failure to generate adequate information on which to base pricing decisions can be found in the reports of the Prices and Incomes Board. Commenting on the policies of the London Brick Co. (the market leader) the

Board noted that information relating changes in costs to small changes in output was not available. More generally, 'the cost figures available are not sufficient for decision-making processes . . . nor, indeed, do they seem helpful for control purposes.' Taking a particular consequence of this lack of adequate information the Board noted 'The present price structure contains some anomalies in delivery charges. Thus deliveries in large vehicles are being overcharged and deliveries in small vehicles undercharged. There is also some overcharging of distant customers and undercharging of those close to brickworks.'[4]

In its report on a proposed price increase for viscose rayon yarn, the Prices and Incomes Board noted that Courtaulds had initially proposed an across-the-board increase of 9 per cent. After adverse comment from the Board on this proposal, the company resubmitted a revised proposal of a lower average increase of 5 per cent. Moreover 'their main objective in the new price list is to concentrate the increases in areas where price is of less importance to customers than the particular qualities of the yarn. A secondary aim has been to improve the relationship between prices and cost.'[5]

Other examples can be found in the literature. However, it is not our purpose to end this book with a catalogue of deficiencies. Indeed we have given many examples throughout the book of recent advances and improvements in pricing policy.[6] However, there is no doubt that much remains to be done in terms of (*a*) developing a coherent policy which takes into account the many interrelationships, internal and external, which impinge upon pricing decisions; (*b*) providing adequate information, adequately structured, to policy makers, and (*c*) ensuring that the organisation structure is such as to enable the policies to be implemented.

*Pricing:* Art or Science? Successful pricing requires a combination of both of these, together with a great deal of resolve and effort.

## FURTHER READING

D. C. Hague, *Pricing in Business* (London: Allen & Unwin, 1971).
A. R. Oxenfeldt, 'The Role of Price and Pricing Reconsidered' in *Creative Pricing*, ed. E. Marting (American Management Association, 1968).
B. Taylor and G. Wills (eds), *Pricing Strategy* (London: Staples, 1969) ch. 25.

# Notes and References

## CHAPTER 1

1. For a very good illustration of this process see R. M. Cyert and J. G. March, *A Behavioral Theory of the Firm* (Englewood Cliffs, N.J.: Prentice-Hall, 1963) ch. 4.

2. A. D. H. Kaplan, J. B. Dirlam and R. F. Lanzillotti, *Pricing in Big Business* (Washington, D.C.: The Brookings Institution, 1958) ch. 2.

## CHAPTER 2

1. An alternative procedure is to calculate the average direct cost and to add to this a margin designed to cover overheads and yield a profit. This procedure is discussed in detail in P. W. S. Andrews, *Manufacturing Business* (London: Macmillan, 1948).

2. The demand curves in this diagram are drawn on the assumption that all firms set the same price.

3. An increase in average cost at high levels of output is by no means inevitable of course.

4. In the limiting case all orders will be lost.

5. Price elasticity of demand is defined as $(\Delta q/Q)/(\Delta p/P)$, where $P$ is the original price of the product, $Q$ is the quantity sold at this price, $\Delta p$ is a change in price and $\Delta q$ is the associated change in quantity. Demand is said to be elastic when a change in price causes revenue to change in the opposite direction, for example a fall in price leads to an increase in revenue. Demand is said to be inelastic when the direction of change is the same for price and revenue. When revenue is unchanged following a change in price, demand elasticity is unity.

6. The significance of liquidity to pricing is discussed at length in R. H. Barback, *The Pricing of Manufactures* (London: Macmillan, 1964).

7. The role of costs is discussed in greater detail in Chapter 5.

8. For an account of the various co-ordinating mechanisms see F. M. Scherer, *Industrial Pricing* (Chicago: Rand McNally, 1970) ch. 2.

9. The technical term for this relationship is the cross-elasticity

of demand, which is defined as $(\Delta qA/QA)/(\Delta qB/PB)$ where $A$ and $B$ are competing products.

10. This might not be so if $X$ is the larger firm, or has greater financial reserves. We are now in an area where the 'precise calculus of economics' is inadequate, and analogies with military strategy become appropriate, as noted by K. W. Rothschild, 'Price Theory and Oligopoly', *Economic Journal*, vol. 57 (1947) p. 299.

11. J. S. Bain, *Industrial Organization*, 2nd edn (New York: Wiley, 1967). See also Chapter 8 below.

12. One of the provisions of the Price Code, introduced in 1974, was that prices should not be increased more than once in any three-month period.

13. This would appear to have been the situation in numerous industries for much of the post-war period, with increases in costs being automatically passed on.

14. For a discussion of the various types of scale economy see F. Livesey, *Economics* (Stockport: Polytech, 1972) pp. 149–65.

15. These alternative strategies are discussed further in Chapter 8.

16. The analysis in this section closely follows that in Livesey, *Economics*, pp. 226–32.

17. Even where there is product differentiation and very few sellers of a given type of product, as at some auction sales, 'brand loyalty' will usually be insignificant.

18. To some extent this section simply makes explicit certain elements that were implicit in the earlier analysis.

19. B. S. Yamey, 'Do Monopoly and Near-Monopoly Matter?', in *Essays in Honour of Lord Robbins*, ed. M. Peston and B. Corry (London: Weidenfeld & Nicolson, 1972) p. 321.

20. J. K. Galbraith, *American Capitalism: The Concept of Countervailing Power* (Boston, Mass.: Houghton Mifflin, 1956). Specific examples of the ability of large firms to obtain favourable purchasing terms are given in Chapter 6 below.

21. A number of relevant empirical studies are related in Scherer, *Industrial Pricing*, pp. 63–4.

## CHAPTER 3

1. This approach to product differentiation is usually to be found in economics rather than marketing texts, the view often expressed in such texts being that while 'real' product differentiation may be beneficial, 'imaginary' differentiation is not.

2. Livesey, *Economics*, pp. 239–41. See also R. T. Morris and C. S. Bronson, 'The Chaos of Competition Indicated by Consumer Reports', *Journal of Marketing* vol. 33, no. 3 (1969) pp. 26–34.

3. It is interesting to reflect that the retailer concerned has recently shown one of the fastest rates of growth in sales and profitability in the industry.

4. The history of Red Barrel, whose introduction was supported by vast advertising expenditure, is especially interesting in view of the fact that beer is often cited as a product which, regardless of its quality, can be sold by advertising.

5. One objective of the strategy might of course have been to obtain a price premium over own labels, many of whose buyers might have been judged to have 'mellow' tastes.

6. National Board for Prices and Incomes, *Report No. 113, Manufacturers' Prices of Toilet Preparations* (London: H.M.S.O., 1969) p. 14.

7. This assumes that the volume of sales is unchanged. If advertising leads to an increase in sales greater than the increase in capital employed, then the rate of return on capital will rise even if profit per unit is unchanged.

8. A useful summary of the results of recent studies is contained in R. Schmalensee, *The Economics of Advertising* (Amsterdam: North-Holland, 1972) ch. 7.

9. M. T. Cunningham and J. G. Whyte, 'The Determinants of Choice of Supplier', *European Journal of Marketing*, vol. 7 (Winter 1973/4) pp. 189–202.

10. H. Buckner, *How British Industry Buys* (London: Hutchinson, 1967) p. 34.

11. No manufacturer would, of course, try to differentiate his product in a negative manner. This particular situation appears to have arisen from a combination of administrative difficulties following mergers, and a desire to reduce the cost of the service network.

12. F. Livesey, 'Brand Loyalty and the Television Rental Market', *European Journal of Marketing*, vol. 7 (Winter 1973/4) pp. 218–31.

13. B. T. Bayliss and S. L. Edwards, *Industrial Demand for Transport* (London: H.M.S.O., 1970) p. 68.

14. The classic illustration of the need for consistency in the elements of the marketing mix is contained in A. R. Oxenfeldt, 'A Multi-Stage Approach to Pricing', *Harvard Business Review*, vol. 38 (1960) p. 125.

## CHAPTER 4

1. A. Gabor and C. W. J. Granger, 'On the Price Consciousness of Consumers', *Applied Statistics*, vol. 10 (1961) pp. 170–88.

2. Buckner, *How British Industry Buys*, p. 20, showed that ten

functions within a firm are commonly involved to varying extents in the purchase of plant and equipment.

3. M. T. Cunningham and J. G. Whyte, 'The Behaviour of Industrial Buyers in their Search for Suppliers of Machine Tools', *Journal of Management Studies*, vol. 11 (1974) pp. 115–28.

4. A. Wilson, *The Marketing of Professional Services* (London: McGraw-Hill, 1972) ch. 12.

5. Bayliss and Edwards, *Industrial Demand for Transport*, ch. 14.

6. K. Kettlewood, 'The Marketing of Freight Transport Services with particular reference to Buyer Behaviour', M.Sc. Dissertation, UMIST, 1971.

7. S. H. Brown, 'The Frawley Phenomenon', *Fortune*, vol. 73 (1966) p. 190.

8. Evidence relating to two very different types of market is presented in F. Livesey, 'The Marketing Mix and Buyer Behaviour in the T.V. Rental Market', *European Journal of Marketing*, vol. 5 (Winter 1971/2) pp. 198–206 and Y. Wind, 'Industrial Source Loyalty', *Journal of Marketing Research*, vol. 7 (November 1970) pp. 450–7.

9. G. L. Wise and A. L. King, 'Price Awareness in the Gasoline Market', *Journal of Retailing*, vol. 49, no. 3 (1973) pp. 64–76.

10. Price sensitivity indicates the likely response of consumers to changes in price. Price elasticity of demand, which was defined in Chapter 2, is a precise measure of this response.

11. C. Robinson, *Business Forecasting* (London: Nelson, 1971) ch. 4.

12. Report of the Senate Subcommittee on Antitrust and Monopoly (Washington, D.C. 1958).

13. C. Griffin, 'When is Price Reduction Profitable?', *Harvard Business Review*, vol. 38 (1960) p. 125.

14. J. Dean, *Managerial Economics* (London: Prentice-Hall International, 1961) p. 180ff.

15. R. H. Whitman, *Studies in Mathematical Economics and Econometrics* (Chicago: University of Chicago Press, 1942).

16. Other smaller-scale studies which have led to similar conclusions are reviewed in B. P. Shapiro, 'The Psychology of Pricing', *Harvard Business Review*, vol. 46 (1968) p. 14. Two studies concerned with the pricing of new products are R. A. Peterson, 'The Price-Perceived Quality Relationship, the Experimental Evidence', *Journal of Marketing Research*, vol. 7 (1970) pp. 525–8; A. G. Woodside and J. T. Sims, 'Retail Experiment in Pricing a New Product', *Journal of Retailing* (1974).

17. Since this latter curve is also derived from consumers' replies,

this method will be less useful for products for which the degree of accurate price recall is low, and in highly inflationary conditions.

18. Actual examples of the data generated by the Nottingham Group are contained in: A. Gabor and C. W. J. Granger, 'Price Sensitivity of the Consumer', *Journal of Advertising Research*, vol. 4 (1964) pp. 40–4; 'Price as an Indicator of Quality', *Economica*, vol. 33 (1966) pp. 43–70; 'The Pricing of New Products', *Scientific Business* (August 1965) pp. 3–12; A. Gabor', 'Price and Consumer Behaviour', *Omega*, vol. 1 (1973) pp. 279–96.

19. A model which can be used to predict changes in brand shares in response to changes in the ratios of the prices of the major brands is presented in A. Gabor, C. W. J. Granger and A. P. Sowter, 'The Influence of Price Differences on Brand Shares and Switching', *British Journal of Marketing*, vol. 4 (1969) pp. 223–30.

20. D. M. Gardner, 'Is There a Generalised Price–Quality Relationship?', *Journal of Marketing Research*, vol. 8 (1973) pp. 241–3.

21. K. B. Monroe, 'Buyers' Subjective Perceptions of Price', *Journal of Marketing Research*, vol. 10 (1973) pp. 70–8.

22. Some commercial applications were discussed in A. Thorncroft, 'Pricing Stays in the Dark Ages', *Financial Times* (18/1/73).

23. R. G. Stout, 'Developing Data to Estimate Price–quantity Relationships', *Journal of Marketing*, vol. 33/2 (1969) pp. 34–6.

24. A. Gabor, C. W. J. Granger and A. P. Sowter, 'Real and Hypothetical Shop Situations in Market Research', *Journal of Marketing Research*, vol. 7 (1970) pp. 355–9.

25. The procedures which may be adopted in order to reconcile initially differing probabilities are discussed in P. E. Green, 'Bayesian Decision Theory in Pricing Strategy', *Journal of Marketing*, vol. 27 (1963) pp. 5–14.

26. P. E. Green, 'Applications of Decision Theory in Pricing Strategy', in *Prices, Issues in Theory Practice and Public Policy*, ed. A. Phillips and O. E. Williamson (Philadelphia: University of Pennsylvania Press, 1967).

## CHAPTER 5

1. The one exception to this assumption that we have identified to date is when different prices might be charged for products sold through different channels of distribution.

2. For example, S. A. Tucker, *Pricing for Higher Profit* (New York: McGraw-Hill, 1966).

3. Adapted from Livesey, *Economics*, pp. 289–91.

4. The National Bureau of Economic Research, *Cost Behaviour and Price Policy* (New York, 1943), identified eleven distinct bases

for cost allocation; modern accounting texts make it clear that this diversity of practice still exists.

5. Absorption costing refers to the fact that all costs are fully absorbed, provided that the budgeted output is attained. As indicated, absorption costing may, in fact, reduce the chances of attaining that output!

6. This implies that in any analysis involving the contribution approach it is necessary to specify the time-period under consideration and the stage of the decision process at which the analysis is applied.

7. We have already noted that S. A. Tucker's advocacy of the contribution approach extends to a full book. For a shorter, but very spirited, defence of full-cost pricing see R. N. Anthony, 'The Trouble with Profit Maximization', in *Price Theory in Action*, ed. D. S. Watson (Boston, Mass.: Houghton Mifflin, 1973).

8. There is no reason to think that there will be a corresponding increase in flexibility upwards. Price increases to take advantage of favourable market conditions may be due more to the objectives of the firm (maximizing *v.* satisficing) than to the procedures adopted.

9. R. H. Barback, *The Pricing of Manufactures* (London: Macmillan, 1964) p. 55.

10. Incremental cost is very similar to the economist's concept of marginal cost; indeed accountants sometimes use the terms interchangeably. However, marginal cost, strictly interpreted, refers to the additional cost incurred in increasing output by a single unit, and is too narrow a concept to be generally useful in pricing decisions.

## CHAPTER 6

1. Price discrimination can be said to exist when price differentials do not accurately reflect cost differentials.

2. Whether the increase in sales would lead to an increase in profits will also of course depend upon the behaviour of costs. Incidentally it is not necessary to assume that the initial price is at the point where *B*'s demand is inelastic. Had the initial price been above this level, say at $P_h$, where demand is elastic in both markets, revenue from each market would increase following a price reduction. However, there must come a point where price reductions lead to an increase in revenue only in market *A*.

3. The greater the number of zones, the less the degree of price discrimination.

4. A multiple basing-point system may help to overcome such problems. However, it also loses some of the advantage of the single-point system.

5. The widespread importance of this feeling is discussed in H. G. Hunt, J. D. Froggatt and P. S. Hovell, 'The Management of Export Marketing in Engineering Industries', *British Journal of Marketing*, vol. 1 (1967) p. 19.

6. P. B. Rosendale, 'The Short Run Pricing Policies of Some British Engineering Exporters', *National Institute Economic Review*, no. 65, 3/73 (August 1973) pp. 44–51. One consequence of these competitive pressures was that of forty-one products exported, profits were higher than in the domestic market in eight instances, but lower in twenty-two.

7. See especially I. B. Kravis and R. E. Lipsey, *Price Competitiveness in World Trade* (New York: Columbia University Press, 1971).

8. Temporary price reductions are discussed in Chapter 7 and price reductions by retailers in Chapter 12.

9. The strength of this belief presumably explains why at one time British Rail charged less for early-morning, workman's tickets than for journeys taken later in the day, a situation now reversed.

10. The National Board for Prices and Incomes (*Report No. 72*, 1968) found that about one-quarter of British Rail's passenger receipts derived from reduced fares of various kinds. For a more extended discussion of the pricing of various transport services, see A. W. J. Thompson and L. C. Hunter, *The Nationalised Transport Industries* (London: Heinemann, 1973).

11. Climatic conditions often mean that the 'product' differs from one part of the year to another, that is to say this is not a pure example of differential pricing.

12. The factors which do, and should, influence pricing in the industry are discussed in: R. Turvey, *Optimal Pricing and Investment in Electricity Supply* (London: George Allen & Unwin, 1968). A description of the pricing policies in the electricity, gas and coal industries is given in G. L. Reid, K. Allen and D. J. Harris, *The Nationalized Fuel Industries* (London: Heinemann, 1973).

13. National Board for Prices and Incomes, *Report No. 75* (London: H.M.S.O., 1968) p. 10. Examples of changes in margins in the United States are given in R. A. Lynn, *Price Policies and Marketing Management* (Homewood, Illinois: Irwin, 1967) pp. 199–200.

14. These questions should be asked by all manufacturers. It may be that in some instances the answers will suggest that the conventional discount structure should be adhered to. Again in markets where there is no conventional structure the analysis may suggest that an 'average' discount should be allowed.

15. However, too-high a discount level may be self-defeating. If too many distributors stock the product the total sales per distributor

may not generate sufficient profits to enable the distributor to provide the level of support desired by the manufacturer. The fact that in the 1960s the average number of cars sold by U.K. dealers was only one-third of the comparable figure for the United States is a case in point, and the 1970s has seen a reduction in the number of car dealers authorised by the major manufacturers.

16. J. Dean, *Managerial Economics* (London: Prentice-Hall, 1961) p. 521.

17. Dean, ibid. p. 522.

18. Monopolies Commission, *Report on the Supply of Electrical Equipment for Mechanically Propelled Land Vehicles* (London: H.M.S.O., 1963) ch. 9.

19. Display facilities may be rudimentary in some forms of retailing, for example in mail-order and direct selling.

20. Realised gross margins will normally be less than discounts based on recommended prices, because of retailers' price reductions, leakages, etc. Nevertheless Table 6.3 is a good indicator of the variations in discounts.

21. Multiple retailers also obtain better-than-average discounts for many products. However, these mainly reflect quantity discounts, which are discussed below.

22. 'There is a noticeable tendency for those who cannot compete on price to cease stocking the brand or brands [of paint] most affected [by price cutting] and to concentrate on others'. National Board for Prices and Incomes, *Report No. 80* (London: H.M.S.O., 1968) p. 6.

23. (London: H.M.S.O., 1963) ch. 18.

24. The company did not accept these figures. A similar picture emerged from the Commission's *Report on Clutch Mechanisms for Road Vehicles* (London: H.M.S.O., 1968).

25. Incidentally where important physical differences exist between the different products made by the firm, it will be difficult to obtain an adequate basis for the aggregation of orders in volume terms.

26. Legal problems may also arise in connection with cumulative discounts, especially if they achieve their objective! See Chapter 13.

27. The danger which is inherent in this policy is that the supplier may have to extend the same terms to other, non-key, buyers. To avoid this danger suppliers will often conduct negotiations with key buyers outside the framework of the formal discount structure.

28. (London: H.M.S.O., 1970) app. 3.

29. In 1969 the company accounted for 77 per cent by value of home sales of all reference goods and 95 per cent of open-top can sales.

30. J. Crowther, 'The Rationale of Quantity Discounts', *Harvard Business Review*, vol. 42 (1966) p. 121. Crowther also makes the point in this article that the buyer may not need to be offered any incentive to increase the size of his order until he reaches the economic order quantity, and he suggests a strategy for setting discounts at points beyond this size.

31. The Monopolies Commission, *Flat Glass* (London: H.M.S.O., 1968) p. 19.

## CHAPTER 7

1. The promotional pricing of new products is discussed in Chapter 8, and promotional pricing by retailers in Chapter 12.

2. For the moment we can proceed on the assumption that the major objective is an increase in the volume of sales.

3. A. C. Nielson Company Ltd, 'Money-Off Promotions', *Nielsen Researcher* (July/Aug, 1964).

4. For example, see *Supply of Certain Industrial and Medical Gases* (London: H.M.S.O., 1956) ch. 9; and *Man-Made Cellulosic Fibres* (London: H.M.S.O., 1968) p. 52.

5. C. Hinkle, 'The Strategy of Price Deals', *Harvard Business Review*, vol. 43 (1965) p. 75.

6. The rapid erosion during the 1960s of the share of the U.K. orange-squash market held by the major manufacturers' brands is a case in point.

7. Hinkle, 'The Strategy of Price Deals'.

8. For some apposite comments on this point, see Hinkle, ibid. The wider implications of organisational structures for pricing policies are discussed in Chapter 14.

## CHAPTER 8

1. Although even here the firm may have to take into account its existing stance in other markets. See A. R. Oxenfeldt, 'A Multi-Stage Approach to Pricing', *Harvard Business Review*, vol. 38 (1960) p. 125.

2. J. Dean, *Managerial Economics*, p. 419; also 'The Pricing of Pioneer Products', *Journal of Industrial Economics*, vol. 17 (1969) pp. 165–79.

3. It is interesting to note that these needs still pertain in the United Kingdom to the electric waste-disposal unit, one of the products suggested by Dean in 1951 as being suitable for a skimming-price policy in the United States.

4. G. Johnson, 'The Pricing of Consumer Goods', *Yorkshire Bulletin of Economic and Social Research*, vol. 14 (1962) p. 74.

5. The scale factor represents an amalgam of two factors considered separately in Chapter 2. Cost may be lower at $0M$ either because of differences of production techniques (economies of scale), or because of a higher rate of capacity utilisation.

6. See, for example, S. G. Sturmey, 'Cost Curves and Pricing in Aircraft Production', *Economic Journal*, vol. 74 (1964) pp. 954–82; and National Board for Prices and Incomes, *Payment by Results Systems* (London: H.M.S.O., 1968).

7. This would be a heroic assumption if prices in only two years were compared; it is more realistic when a longer time-period is considered.

8. Boston Consulting Group, *Perspectives on Experience*, ch. 8.

9. *Financial Times* (28/1/75).

10. Kaplan, Dirlam and Lanzillotti, *Pricing in Big Business*, p. 254.

11. Some commentators interpose an additional stage, 'Saturation', between the maturity and decline stages.

12. Dean, *Managerial Economics*, p. 425.

13. This implies that we should make a distinction between technological and market maturity.

14. If there are substantial cost differences between producers, and low-cost producers do not pass on the cost decrease, this is likely to yield a greater proportional benefit to the high-cost producers with the lower market shares, and may produce a highly unstable market. (See Boston Consulting Group, *Perspectives on Experience*, ch. 10.)

15. It is perhaps significant that similar tactics did not pay off when the car concerned had a much lower initial market share, as was the case with the Hillman Imp.

## CHAPTER 9

1. This implies a degree of centralised control which may be difficult to effect under some forms of organisation, for example when separate brand managers are responsible for the profitability of their own products. Here the risk that a failure to consider internal cross-elasticities would reduce total company profits in the short run may, perhaps, be justified by the greater degree of dynamism which is felt to be engendered by this organisational form, and which will, hopefully, lead to higher profits over the longer term.

2. Typical price ranges, at July 1974, included £1490 to £1730 for the Austin Maxi, £1260 to £1650 for the Hillman Hunter, and £860 to £1140 for the B.L.M.C. Mini.

3. Monopolies Commission, *Report on the Supply of Metal Containers* (London: H.M.S.O., 1970) p. 39.

4. 'Samsonite: On Land, in the Air, and on the Sea', *Business Week* (February 1965) p. 98.

5. The scarcity of evidence is noted in K. B. Monroe, 'Measuring Price Thresholds by Psychophysics and Latitudes of Acceptance', *Journal of Marketing Research*, vol. 8 (1971) pp. 460–4.

6. Dean, *Managerial Economics*, p. 478.

7. This could also be seen as an example of the promotional pricing of some of the bank's services. But note that the promotional price might be maintained for up to six years!

8. National Board for Prices and Incomes, *Report No. 80* (London: H.M.S.O., 1968) p. 4.

## CHAPTER 10

1. The role of bidding models within the wider context of market planning is discussed in L. A. Williams 'Industrial Marketing Models Using a Computer', *Proceedings of the Institution of Electrical Engineers*, vol. 118 (1971) pp. 931–42.

2. These 'odd' values have been chosen to avoid the problems that arise when 'ties' occur. The chances of a tie would be very small in reality given that far more alternative prices would be possible than the six we have used here.

3. We have assumed four competitors for the sake of simplicity. This averaging procedure will, in fact, be more reliable the greater the number of competitors.

4. For a specific example, relating to water supply and water treatment projects, see A. W. Walker, 'How to Price Industrial Products', *Harvard Business Review*, vol. 45 (1967) pp. 125–32.

5. F. Edelman, 'Art and Science of Competitive Bidding', *Harvard Business Review*, vol. 43 (1965) p. 53. Unfortunately Edelman does not make clear whether the model used only 'hard' data, or whether it relied more heavily on subjective assessments.

6. A different objective would of course have produced a different pattern of prices.

7. See W. Brown and E. Jaques, *Product Analysis Pricing* (London: Heinemann, 1965); and L. Symons, 'Product Analysis Pricing', in *Pricing Strategy* (London: Staples, 1968) pp. 334–45.

8. Symons, *Pricing Strategy*, p. 345.

## CHAPTER 11

1. British Institute of Management, *Transfer Pricing* (London: 1971).

2. It would be wrong, however, to see this as only a large-company

problem. Of the companies identified by the B.I.M. as having inter-unit sales, one-half had less than 1000 employees.

3. J. Hirshleifer, 'On the Economics of Transfer Pricing', *The Journal of Business* (1956).

4. J. Dean, 'Decentralization and Intracompany Pricing', *Harvard Business Review* (1955).

5. F. Livesey, 'The Pricing of Internal Transfers', *The Accountant* (1967).

6. This is probably largely due to differences in the size composition of the two samples, and especially to the fact that firms with more than 5000 employees accounted for 21 per cent of the B.I.M. sample, compared to only 2 per cent of the present author's sample.

7. Incidentally, although profitability is often used as an indicator of successful units which merit additional financial support, it may be equally valuable to have a system which enables one to identify poor performers, units which may either be candidates for retrenchment or may require an increased allocation of company resources.

8. Thirty-eight per cent of the firms in the B.I.M. study imposed partial constraints on trading.

9. F. Livesey, 'Transfer Pricing in Practice', *The Accountant's Magazine* (1972).

10. One should include here the cost of negotiation in terms of executive time, trenchantly criticised by, for example, A. N. Warburton, as quoted in J. Dearden, 'The Case of the Disputing Divisions', *Harvard Business Review* (1964).

11. This has the additional advantage of encouraging internal purchases.

12. Moreover, since the adoption of a cost-based system implies that less emphasis is given to the fostering of a commercial attitude and the development of a comprehensive measure of efficiency, there is less to be lost by constraints on trading.

13. The discussion in Chapter 6 on geographical price differentials is highly relevant to the operations of multinational companies.

14. If the change in relative prices is permanent the company should of course reconsider the geographical distribution of its resources.

15. This tendency will be reinforced where the production process is disaggregated geographically but highly integrated technologically, as for example in many parts of the European car industry.

16. M. Z. Brooke and H. L. Remmers, *The Strategy of Multinational Enterprise* (London: Longman, 1970) p. 176.

17. J. Arpan, *International Intracorporate Pricing: Non-U.S. Systems and Views* (New York: Praeger, 1972).

18. J. H. Dunning, 'U.S. Subsidiaries in Britain and their U.K. Competitors', *Business Ratios*, vol. 1 (New York: Dun & Bradstreet, 1966) pp. 5–18.

19. Brooke and Remmers, *The Strategy of Multinational Enterprise* p. 176.

## CHAPTER 12

1. W. G. McClelland, *Studies in Retailing* (Oxford: Blackwell 1963) p. 99.

2. Even in 1963 McClelland was able to observe this alternative policy in 'at least two prominent supermarket companies'.

3. Depending upon the objectives of the firm.

4. B. R. Holdren, *The Structure of a Retail Market and the Market Behaviour of Retail Units* (Englewood Cliffs, N.J.: Prentice-Hall, 1960) ch. 8.

5. During the recent shortage, a high transfer effect might have been expected to follow from the availability rather than the price of sugar.

6. D. Thorpe, *Food Prices, A Study of Some Northern Discount and Super Stores* (Manchester: Retail Outlets Research Unit, Manchester Business School, 1972).

7. Louis Harris International, *Qualitative Research into Shopping Motivations* (London: Harris International Marketing Ltd, 1974) pp. 17–18.

8. Louis Harris International, ibid. p. 35. It appeared that these housewives were also influenced by these retailers' policies towards own-label products. On the whole the prices of own labels were more stable than of the corresponding manufacturers' brands. Moreover when price reductions were made they were seen as being more genuine because the retailer was 'cutting his own stuff'. For a fuller discussion of the role played by own labels in retailers' competitive strategies, see F. Livesey, 'The Changing Role of Own Labels', *Retail and Distribution Management* (May 1973).

9. This implies that recent findings to the effect that the low prices of supermarkets do not carry over to meat, fruit and vegetables, should be seen not as a criticism, but as an indicator of a sound pricing policy. The difficulties which consumers may have in evaluating the quality of clothes (with clear implications for the role of price as an indicator of quality) are discussed in R. Dardis and L. Skow, 'Price Variations for Soft Goods in Discount and Department Stores', *Journal of Marketing*, vol. 33/2 (1969) pp. 45–9.

10. An exact correspondence would, of course, result in an equality of net margins.

11. Birds Eye, *The Case for Profit* (Walton-on-Thames, 1971).

12. Additional factors discussed in the Birds Eye study include the extent to which operating costs are fixed or variable, and alternative asset bases. These factors are also discussed in D. J. Dalrymple and D. L. Thompson, *Retailing, an Economic View* (New York: The Free Press, 1969). The most comprehensive study of retail pricing is H. Nystrom, *Retail Pricing* (Stockholm: Economic Research Institute, Stockholm School of Economics, 1970).

13. D. M. Georgoff, *Odd–Even Price Endings* (East Lancing, Mich.: Michigan State University, 1972).

14. J. F. Pickering, 'Trading Stamps and Retail Prices', *European Journal of Marketing* (Winter 1973/4) pp. 176–88.

15. There are types of retailing, such as mail order and direct selling, to which we have not been able to devote any space.

## CHAPTER 13

1. A comprehensive discussion of the different types of agreement is contained in D. P. O'Brien and D. Swann, *Information Agreements, Competition and Efficiency* (London: Macmillan, 1968).

2. See, for example, American Column and Lumber Co. *v.* United States, and Maple Flooring Manufacturers' Association *v.* United States, both of which are discussed in A. D. Neale, *The Anti-Trust Laws of the U.S.A.*, 2nd edn (Cambridge: Cambridge University Press, 1970).

3. Price leadership is discussed at length in Scherer, *Industrial Pricing*, ch. 2.

4. In the terminology of Chapter 6 this would represent differential pricing, but not price discrimination. In this chapter, however, we retain the legal definition of discrimination.

5. Neale, *The Anti-Trust Laws of the U.S.A.*, p. 236.

6. Similar difficulties in interpretation have arisen where defendants have sought to justify price discrimination as being necessary to match competitive prices. See Neale, ibid. p. 237ff.

7. This eighth 'gateway' was first introduced by the 1968 Restrictive Trade Practices Act.

8. (London: H.M.S.O., 1973) p. 30.

9. This section relies heavily upon the commentaries provided in C. Bellamy and G. D. Child, *Common Market Law of Competition* (London: Sweet & Maxwell, 1973); and B. Goldman, *European Commercial Law* (London: Stevens & Sons, 1973).

10. See, for example, I.C.I. *v.* E.E.C. Commission, 1972.

11. Bellamy and Child, *Common Market Law of Competition*, p. 321.

## CHAPTER 14

1. A. R. Oxenfeldt, 'A Decision-Making Structure for Price Decisions', *Journal of Marketing*, vol. 37 (1973) pp. 48–53.

2. D. C. Hague, *Pricing in Business* (London: Allen & Unwin, 1971).

3. A similar picture emerged from the later study, D. C. Hague, A. A. Strain and W. E. F. Oakeshott, *Devaluation and Pricing Decisions* (London: Allen & Unwin, 1974).

4. National Board for Prices and Incomes, *Report No. 150* (London: H.M.S.O., 1970) p. 16.

5. National Board for Prices and Incomes, *Report No. 119* (London: H.M.S.O., 1969) p. 10. One cannot be sure in this case whether the change in strategy, made under pressure from the Board, required the company to derive additional information or merely to apply more sensibly information it already possessed.

6. Further examples of the use of complex models are contained in R. E. Good, 'Using the Computer in Pricing', in *Creative Pricing*, ed. E. Marting (New York: American Marketing Association, 1968) pp. 182–94; A. E. Amstutz, *Computer Simulation of Competitive Market Response* (Cambridge, Mass.: M.I.T. Press, 1967).

# Index