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Vertical Restraints and Competition Policy

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December 1996

Research Paper

12

VERTICAL RESTRAINTS AND COMPETITION POLICY

PREFACE

This is the 12th of a series of research papers (listed overleaf) to be published by the Office of Fair Trading. These papers report the findings of projects commissioned by the OFT as part of its ongoing programme of research into aspects of UK Competition and Consumer Policy. The intention is that research findings should be made available to a wider audience of practitioners, both for information and as a basis for discussion.

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EXECUTIVE SUMMARY

This study was commissioned by the Office of Fair Trading as one in a series of research reports on competition policy. This report considers the private and social welfare effects of vertical restraints - whereby contractual arrangements between suppliers (manufacturers) and distributors (retailers) extend beyond simple arms-length pricing. It seeks to synthesise and extend existing theory on vertical restraints, so as to identify the conditions where detrimental effects are likely to dominate benign social welfare effects, and vice versa, with the aim of developing a practical framework for the analysis of vertical restraints.

I. POLICY BACKGROUND

Vertical ties between manufacturers and retailers continue to be a source of policy debate. While there has been considerable disquiet over aspects of present policy arrangements (e.g. the lenient treatment generally given to non-price vertical restraints), there has been little change over recent years either in the UK or more widely. However, change may be forthcoming. This report has been written at a time when policy on vertical restraints is being reviewed both in Europe (with the imminent release by the European Commission of a Green Book on the matter) and in North America (where the Department of Justice's *Vertical Restraints Guidelines* have recently been rescinded).

II. ECONOMIC ANALYSIS OF VERTICAL RESTRAINTS

There is a considerable body of recent analysis of vertical restraints from both a private and social welfare perspective, utilising a variety of approaches and specific assumptions. This material has considerably increased understanding, but does not lead to straightforward conclusions for public policy. In particular, the material does not support the view, argued most vociferously by Bork, and associated with the so-called Chicago School, that all vertical restraints should be legal. Rather it argues for more detailed investigation of the relevant issues in certain circumstances.

The traditional approach to vertical restraints has been to view them as solutions to non-alignment of private incentives in supply and distribution, e.g. double marginalisation where firms at successive vertical levels price independently resulting in (privately) sub-optimal sales levels, with restraints being typically imposed by manufacturers on retailers. The more recent literature seeks to distinguish between restraints based upon agreements and those based upon dominance and analyses restraints in terms of their effects on interbrand (manufacturer-level) and intrabrand (retailer-level) competition to consider their social welfare implications.

This latter approach explicitly recognises that restraints may have a benign effect, e.g. by removing pricing distortions, optimizing investment levels and eliminating avoidable transaction costs, but may also have an adverse effect not only by foreclosing markets to new entrants (which is the standard criticism) but also by dampening competition between existing rivals through restrictions on interbrand and/or intrabrand competition. For example, exclusive dealing (where the retailer is prohibited from stocking competing products) may be seen to facilitate manufacturer investment in distribution activity, but will tend to raise manufacturer margins. Similarly, exclusive distribution (which grants retailers exclusivity within a geographic area or over a particular class of consumer or goods) allows retailers to plan on the basis of a particular market, but tends to raise retailer margins. Trade-offs of this nature are common and the challenge is to identify the market conditions under which the adverse effects are likely to dominate the benign ones, and vice versa.

Investigation of specific prototype models in this report gives rise to the view that market power at one or both levels is a necessary condition for vertical restraints to have a public policy significance. With market power present, a number of other factors, notably the nature of the agreement between successive levels, the extent of economies of scope in retailing and the existing degree of inter and intrabrand rivalry, may have considerable influence on the public policy effect of vertical restraints.

III. POLICY APPROACHES

Two obvious candidate policy models on vertical restraints to follow in the UK are the EC approach, emanating from Article 85 and the block exemptions therefrom, and the US Department of Justice *Vertical Restraints Guidelines* (now withdrawn). However, a brief examination of these approaches reveals both significant differences between them and some undesirable features by comparison with the implications drawn from the earlier examination of the economic literature.

An alternative investigation procedure is developed in the form of a checklist providing a filter as a first stage in the evaluation process to be used in considering whether to proceed to a more detailed examination. This approach is framed around three key questions dealing with (i) signs of market power at the manufacturer and/or retailer level, (ii) the effects on competition, and (iii) indicators of efficiency. This is described in section 5.2 of the report below and is then illustrated by an application to five brief case studies.

1. Introduction

Vertical ties between manufacturers and retailers continue to be a source of policy debate. Many of the recent market studies undertaken by the Monopolies and Mergers Commission (MMC) have been concerned with some aspect of vertical relations. One report, *The Supply of Beer* (1989a), recommended a substantial structural remedy to reduce the extent of ties between manufacturers and retailers, encouraging the largest brewers to sell off a large proportion of their tied estates. In a rather different sphere, vertical separation was also recommended in *Gas* (1993b). In a further four reports, *Carbonated Drinks* (1991), *New Motor Cars* (1992a), *The Supply of National Newspapers* (1993d) and *Films* (1994c), modest behavioral remedies were proposed with respect to vertical linkages: respectively, to end exclusive dealing in the leisure drinks market, to encourage car dealers to operate beyond their designated territories, to prohibit restrictions preventing retailers from selling on copies of newspapers to other retailers, and to terminate alignment practices and restrict minimum exhibition periods enforced on cinemas.¹ However, in other reports, covering *The Supply of Petrol* (1990a), *Motor Car Parts* (1992b), *Fine Fragrances* (1993c), *Ice Cream* (1994a), and *The Supply of Recorded Music* (1994b), a complex and/or a scale monopoly was perceived to be operating in favour of the leading firms, but the MMC took the view that this did not necessarily serve against public interest and proposed that no action be taken.

Thus, the recent period covering these reports represents a marked increase in interest by competition authorities in vertical arrangements, in contrast to the relatively barren period in the early and mid-1980's. Nevertheless, the policy response has been muted.

The case for a non-interventionist policy approach towards vertical restraints has been argued most vociferously by economists in the Chicago School tradition, notably Bork (1966, 1978), as well as Posner (1976, 1981) and Telser (1960), amongst others. From this perspective, vertical restraints serve to remove any downstream (i.e. retail level) pricing distortions, optimize investment levels, as well as eliminate avoidable transaction costs (e.g. search costs, and costs associated with pre- and post-contractual opportunistic behaviour, i.e. adverse selection and moral hazard). Accordingly, any problems associated with market failure arise from horizontal competition, where monopoly power is present at a particular stage of the production/distribution chain, rather than from any vertical (i.e. manufacturer-retailer) arrangements, as these links do not allow for additional monopoly rent to be created. In other words, vertical restraints do not support the transmission of monopoly power from one level to another.²

Nevertheless, the theoretical foundations on which this approving view is based have been

questioned by recent research on the motives and effects of vertical restraints. This new literature shows that while restraints may be privately efficient to the parties involved, and can provide a benign welfare effect by improving productive and allocative efficiency, they may also have an adverse effect through not only foreclosing markets to new entrants (which is the standard criticism) but also through dampening competition between existing rivals by restricting interbrand and/or intrabrand rivalry.

The traditional Chicago view is based on what Steiner (1991) describes as ‘single-stage modelling’, with the vertical arrangement represented in terms of an uncomplicated principal-agent relationship, where the retailer is merely an agent to distribute the manufacturer’s (i.e. the principal’s) product. The retailing function is taken to be perfectly competitive by virtue of the standard characteristics of easy entry, numerous competitors, and a high degree of buyer and seller mobility in response to small price differences (due to homogeneity of retailer services and an absence of switching or search costs). Furthermore, even if one or more of these features is absent, it is assumed that manufacturers may use restraints to replicate perfectly competitive downstream conditions, e.g. by using resale price maintenance (RPM) or franchise fee extraction (i.e. two-part tariffs) to relieve retailers of their profits while at the same time correcting any pricing distortions.

In contrast, the recent literature stresses that retailing is much more than simply being a mechanism for distribution. The ‘service’ provided by retailers contributes to the value which consumers place on the product. In particular, retailers provide both specific and general services to (potential) customers, including demonstration facilities, information, stocks, etc., so that demand is not exogenous to retailing. Moreover, this service provision is likely to result in retailers incurring fixed costs, many of which contain a sunk element, e.g. fixtures and fittings. The presence of these fixed costs and the market power that retailers may have from offering differentiated (or even unique) services imply that perfect competition is an unattainable ideal. Accordingly, it may be more appropriate to consider the effects of both manufacturers and retailers actions through ‘dual-stage modelling’, recognising that imperfect competition can be present at successive market stages.

In these circumstances, manufacturer and retailer interests may be expected to diverge where externalities arise from individual rather than joint decision-making. Vertical restraints may then be a response to harmonise these interests either by one side of the market imposing its will on the other, or from mutual agreement when they are jointly preferred. While these restraints may increase the joint profits for the firms involved (by removing externalities), it cannot be presumed that these are socially desirable. Firms will generally desire to restrict competition to raise profits while in contrast society may prefer more intense competition. The problem for the policy-maker lies in determining the net effect of prohibiting a restraint,

given that (at the very least, due to fixed costs) imperfect competition may still remain.

The purpose of this report is to consider the private and social welfare effects of vertical restraints. The report seeks to synthesise and extend contemporary theory on vertical restraints, so as to identify the conditions where detrimental effects are likely to dominate benign social welfare effects, and vice versa. The aim is to develop a practical framework for the analysis of vertical restraints.

The report proceeds as follows. The next section reviews the recent economics literature on vertical restraints, illustrating the range of motives which firms may have for implementing them and their possible effects on competition and social welfare. Most of this literature emphasizes the ability of manufacturers to impose restraints on powerless retailers. However, a small literature has emerged which considers the influence of retailers in determining restraints. In this context, section 3 considers in some detail the sources of retailer market power. Section 4 then develops a dual-stage modelling framework based on the view that imperfect competition is (potentially) present in both manufacturing and retailing. This framework is used to consider the private and social welfare effects of vertical restraints which are designed to reduce both interbrand and intrabrand competition. In undertaking the analysis, an explicit distinction is made between restraints based upon agreements and those based upon dominance. Section 5 draws on this economic analysis to conclude the report by offering some proposals for investigation procedures in vertical restraints cases.

2. The Economic Theory of Vertical Restraints

Vertical restraints can, in principle, occur at any stage of the supply/distribution process for a product or service. However, the attention by commentators, and competition authorities, has centred on restraints in retail distribution. These restraints come in a number of guises. For convenience, Table 1 below classifies restraints into eight forms.³

This section of the report reviews the existing literature with the purpose of considering the motivation firms have for implementing vertical restraints, the market conditions under which they are likely to occur, and, ultimately, their effects on competition and societal welfare. The literature has contained a high ratio of theory to empirics. Nevertheless, we mention empirical material where relevant.

The recent literature has largely been framed in terms of vertical restraints being motivated by the desire for vertical control within a principal-agent relationship, where the principal (the manufacturer) imposes contractual obligations on its agent (the retailer) when delegating responsibility for selling its good.⁴ In this framework, vertical restraints are viewed as responses to supply and distribution problems facing the principal. The key problems for which a manufacturer may wish to control are summarised in Table 2. These fall into two groups. Firstly, problems may arise for a manufacturer, independently of concerns about competition with other manufacturers, from retailers taking actions designed to maximize their own profits, but which act against the manufacturer's interest. Secondly, problems may stem from the actions of rival manufacturers which have an adverse impact on the firm's profits. We examine these two issues in turn. In subsection 2.1, the role of a range of vertical restraints is considered in the context of a single manufacturer seeking complete vertical control over its dealers - i.e. striving for an outcome equivalent to vertical integration. Here, the manufacturer may wish to use restraints to control the first four problems listed in Table 2. Then, in subsection 2.2, vertical arrangements to deal with the other two listed problems, concerning upstream competition, are considered.

Table 1 - Types of Vertical Restraints

<i>Form</i>	<i>Examples</i>
Non-linear Pricing	Two-part tariff with a franchise fee plus a constant per-unit charge Aggregated rebate scheme with discounts for taking full product range
Quantity Forcing	A specified minimum quantity the retailer is required to distribute; e.g. beer sales in tenanted public houses
Service Requirements	A specified level of pre- and post-sales service or promotional effort Using trademarked equipment; e.g. fast-food franchises
Resale Price Maintenance	Retail price fixed by the producer; e.g. the book market A price floor or price ceiling
Refusal to Supply	Selective distribution limiting the number of distributors; e.g. fine fragrances
Exclusive Distribution	Distributors assigned exclusivity within a geographic area or over a particular class of consumer or goods; e.g. newspaper distribution
Exclusive Dealing	The retailer is prohibited from stocking competing products; e.g. petrol retailing
Tie-in Sales	Distributors contractually required to take other products, or even, with full-line forcing, an entire product range

Table 2 - Vertical Restraints as Responses to Supply and Distribution Problems

<i>Problems in supply and distribution</i>	<i>Contractual solutions</i>
1. Successive (manufacturer then retailer) mark ups	Two-part tariffs Quantity requirements Retail price ceilings
2. Damaging competition between retailers	Resale price maintenance Exclusive distribution
3. Free riding by retail price discounters on the pre-sales services and/or reputation of full price dealers	Service requirements Resale price maintenance Exclusive distribution Refusal to supply Exclusive dealing
4. Providing the optimal number and density of dealers and capturing economies of scale in distribution	Resale price maintenance Refusal to supply
5. Free riding by manufacturers on product's image, advertising, and customer drawing power or on investment in dealers	Exclusive dealing
6. Damaging competition between manufacturers	Exclusive dealing Tie-in sales Exclusive distribution

Subsection 2.3 considers the influence that retailers may have on the establishment of vertical

restraints. While most of the literature attributes the instigation of vertical restraints to manufacturers, reflecting the view that manufacturers are the principals and retailers are the agents, some recent work has begun to examine the effects of retailer-instigated restraints. One line of inquiry has been to consider powerful retailers (e.g. supermarket chains) imposing restraints, such as slotting allowances and exclusive supplying obligations, on weak manufacturers. A further line has been to consider vertical restraints as being jointly determined in situations where market power exists at both the manufacturing stage and the retailing stage.

2.1. Vertical Restraints and Retailer Competition

A manufacturer which has such a demand or cost advantage that it faces no competition in the production sector may still face problems in exercising its monopoly power over (competitive) retailers and obtaining the maximum possible surplus. The problems stem from a divergence of their interests. Vertical restraints may then be used by the manufacturer to bring dealer interests into line with its own interests.

A divergence of interests may exist over a range of issues, though notably over pricing and the provision of retail services, and can be seen as arising out of a set of externalities:

(i) Effects from retailer independence

Retailers do not gain all the benefits of action taken to improve sales; some goes to manufacturers. For every extra unit a retailer sells by modifying pricing or advertising strategies, the manufacturer gains an amount given by the difference between wholesale price and marginal production costs. Thus, there is a positive externality bestowed on the manufacturer by such retailers' actions, which in turn means that retailers will tend to set prices too high and advertising too low from the manufacturer's point of view (i.e. high prices are a negative externality). For example, this problem may manifest itself, as a consequence of independent behaviour by the manufacturer and retailer, in the form of successive price

mark ups where the manufacturer, in attempting to exercise its market power, sets a wholesale price greater than its marginal cost, which the retailer in turn takes and, in also attempting to exercise market power, sets a price greater than the sum of this wholesale price and its marginal distribution cost. The result, as observed by Spengler (1950), is that this ‘double marginalisation’ leads to final price (respectively, quantity) being set higher (lower) than that the level which would maximise their joint profits (attained by setting a single mark up).

(ii) *Retailer (intra-brand) competition effects*

Retailers when raising price confer benefits on neighbouring retailers, by increasing demand for their products. This is a positive externality created by one retailer on others; in attempting to gain a greater margin for itself, it drives custom away. It will tend to mean retailers will keep prices lower than in the absence of rivals. The severity of the problem increases the more substitutable the retailers are perceived to be by consumers, raising the possibility of destructive competition when they are highly substitutable. In this case, when there is little differentiation between retailers, e.g. because of their locational proximity, competition destroys profits at the retail stage. The result may be that competition does not afford retailers a positive mark up. But this may mean, for example, that insufficient retailers carry the product from the manufacturer’s point of view.

(iii) *Dealer free-riding effects*

Each retailer confers a positive externality on other retailers and on the manufacturer by engaging in advertising of the product, unless the advertising is very specifically targeted. There is a similar effect regarding other services - demonstration facilities and so on. Because the horizontal and vertical externalities here operate in the same direction, the clear prediction, as noted by Telser (1960), *inter alia*,⁵ is that in the absence of any agreements, too little promotional and demonstration activity will take place. Some retailers will attempt to ‘free-ride’ on others, perhaps offering low prices and a warehouse-type ambience, once customers have had a product demonstrated elsewhere. In a similar vein, even when there are no explicit pre- or post-sales services, consumers may perceive certain retailers to be carriers of only ‘high-quality’ products (e.g. as acknowledged trendsetters in fashion) so that the act

of selling the manufacturer's good conveys the impression that the good must be of high quality and so favourably affects demand for the product. Other retailers without such a reputation which then carry the same good can gain through the 'certification' of the good as high-quality by free riding on the reputation of certifying stores and consequently have less need to invest in building up their own reputation. This poses a problem for the manufacturer which wants to ensure that the good is viewed as high quality but is also distributed widely [Marvel and McCafferty (1984)]. If the manufacturer sells to low quality stores, then high quality distributors, in not being fully able to capture the returns on their reputation, may prefer not to stock the good. On the other hand, if the product is sold only through the highest quality stores, then the good may not obtain sufficient distribution.

(iv) *Retailer location effects*

Retailers left to themselves would be likely to set location sufficiently distant from rivals to permit supernormal returns to their location but not sufficient to make entry worthwhile. This assumes an element of sunkness about location, so that potential entrants believe that they are unlikely to be able to push established firms out of their current locations. In this case, the retailers' locational choices confer a negative externality on the manufacturer leading to a suboptimal density of suppliers from the manufacturer's point of view [see Dixit (1983), Gallini and Winter (1983) and Waterson (1988)].

Vertical restraints can in principle control all these problems or deal with the externalities involved. Resale price maintenance (RPM), quantity forcing, specification of demonstration service and promotional facilities, franchise fees, allocation of territories, and so on, can all be used to this end, assuming the manufacturer has sufficient information regarding the underlying cost and demand parameters, and assuming all are legal. ⁶

In a deterministic setting the number of instruments needed might be expected to equal the number of variables to be controlled. Thus in the absence of the fourth externality discussed above, it is price and promotional levels (and thereby quantity, as well) set by retailers which the manufacturer wishes to control. Two instruments are sufficient. For example, Mathewson and Winter (1984) contrast the roles of four instruments - quantity forcing,

franchise fees, RPM and exclusive territories - which may be used to correct for (or internalise) the first three externalities.⁷ Given their assumptions of a single producer (potentially) supplying several retailers in a world of no uncertainty (i.e. perfect and complete information), these four vertical restraints can be grouped into two pairs with each member having the same effect where one pair influences retail quantities while the other constrains retail prices.

For example, quantity forcing, by requiring the retailer to sell a minimum quantity, can relieve the 'double mark-up' problem. But so could franchise fees.⁸ Exclusive territories can remove the externalities resulting from retailers competing on prices and promotional levels. But so could RPM.⁹

However, there may be practical reasons why these pairs of restraints may not be straightforward substitutes. Firstly, if the fourth externality is also present then territory distribution and RPM may both be required. Secondly, leaving aside the issue of controlling the fourth externality, the effectiveness of 'substitute' instruments may differ in practice. For instance, while RPM has a direct effect on preventing price competition, exclusive territories work indirectly and may mean that competition is not totally ruled out. Specifically, prohibiting sales outside a designated territory may be insufficient since customers, being able to travel, can choose to buy their goods from dealers in different territories (e.g. UK nationals purchasing cars in mainland Europe). That is, while sales may be restricted to a particular area, it is more difficult to make such restrictions apply to sales to customers at particular addresses.

One rather more fundamental criticism of this literature is that, given its assumptions, there is no rationale for retailers to exist independent of the manufacturer - restraints simply serve to mimic the vertical integration outcome. However, Rey and Tirole (1986b) develop a model in which a manufacturer supplies a number of retailers, but cannot observe a retailer's profit or quantity sold, such that the vertical integration outcome may not be possible even using restraints. The model allows for the possibility of (symmetric) demand uncertainty and cost uncertainty in the retail markets. In the absence of RPM or exclusive territories it is assumed

that the retailers compete in Bertrand competition and pay franchise fees. With no uncertainty then competition at the final stage, RPM and exclusive territories are equivalent since (in the absence of fixed costs) the equilibrium price equals marginal cost and the manufacturer captures the vertically integrated level of profit. However, with uncertainty in the retail markets, the manufacturer may be constrained in exploiting its monopoly power by the need to provide adequate insurance to retailers with the result that the manufacturer may have different preferences for the choice of vertical tie depending on the type of uncertainty and the risk attitude of the retailers.

With market uncertainty, the manufacturer is best able to exploit its market power by providing exclusive territories since the retailers, as local monopolists (and thereby residual claimants for the profits of the vertical structure), adjust their prices optimally to cost and demand shocks. If instead the manufacturer imposes RPM, the retail price is fixed and, therefore, cannot respond to demand and retail cost shocks. Without either of these restraints, competition ensures that when the retailers are undifferentiated the retail price is entirely cost determined and is thus insensitive to demand shocks.¹⁰ The result is that when retailers are risk-neutral (and thus seek to maximize expected profits), the manufacturer, in not being required to provide insurance, prefers exclusive territories to either RPM or competition.

However, when retailers are risk-averse, so that they value the right to buy the good at less than the expected profit, the manufacturer will be required to share some of the risk with the retailers. The three measures are shown to have different insurance properties. Competition provides very good insurance. In Bertrand competition with undifferentiated retailers, the consumer price is equal to the wholesale price plus the distribution cost, and both retailers make zero profit irrespective of demand or cost fluctuations. Though for differentiated retailers, profit is sensitive to demand/cost shocks but competition acts to soften profit fluctuations. The insurance properties of RPM depend on the type of uncertainty. With cost uncertainty the retailers bear the whole risk as they must fully adjust their profit margin to cost shocks. In contrast, with demand uncertainty, RPM provides ideal insurance when the manufacturer sets the wholesale price at the level which leaves retail margins at zero, making the retailer's profit independent of demand. Exclusive territories have generally poor

insurance properties in that retailers can adjust their prices to meet cost and demand changes, but cannot avoid substantial fluctuations in their profits.

With very risk-averse retailers the insurance objective dominates the desire for optimal exploitation of monopoly power with the result that in conditions of demand uncertainty RPM offers the manufacturer the highest level of expected profit while exclusive territories offers the lowest expected profit (of the three measures). With cost uncertainty, the ranking of these two is reversed, but expected profit is highest when neither tie is imposed and rather the retailers are allowed to freely compete. Thus the nature of market uncertainty (i.e. demand or cost related) affects the manufacturers' ranking of preferred vertical restraints. For convenience, the manufacturer profit rankings, along with the welfare rankings, are summarised in Table 3. ¹¹

Table 3 - Profit (Π) and Welfare (W) Comparisons in the Rey-Tirole Model

	Nature of Retailers Towards Uncertainty	
	Risk-Neutral	Risk-Averse
Demand Uncertainty	$\Pi^r > \Pi^e = \Pi^c$ $W^r = W^e > W^c$	$\Pi^c = \Pi^e > \Pi^r$ $W^c = W^e > W^r$
Retail Cost Uncertainty	$\Pi^r > \Pi^c = \Pi^e$ $W^r > W^c > W^e$	$\Pi^c > \Pi^r > \Pi^e$ $W^c > W^r > W^e$

Whilst there is no major dispute regarding the reasons expounded above underlying the use of vertical restraints, considerably more controversy exists over the social welfare implications and consequent policy prescriptions. In moving on to discuss welfare issues though, we focus

first on areas of agreement.

On a general level, the issue of whether restraints are substitutable is important not only in understanding why firms decide to implement particular restraints, but also in considering the consistency of competition policy when it is based on the *form* of agreements. If two alternative pairs with the same properties exist, then if one set is deemed socially (un)desirable, so should the other set be. For example, following the analysis of Mathewson and Winter and others [e.g. Dixit (1983) and Blair and Kaserman (1983)], RPM and exclusive territories represent such a pair. However, the law as it currently stands in the UK, and elsewhere, treats these two restraints differently. Pricing restraints, like RPM, are treated much more harshly than non-price restraints, like exclusive territories.¹² If it is true that these restraints are simply used as substitutes, the law is making an economically illegitimate distinction. On the other hand, Rey and Tirole's analysis, and that of others, including Bolton and Bonanno (1988), Waterson (1988), Perry and Porter (1989) and O'Brien and Shaffer (1992), point to reasons why the effectiveness, and thus the consequences, of restraints may be expected to differ in practice. Accordingly, to ban one restraint but not its potential substitute may not be as unsound as a simple interpretation of the Mathewson-Winter framework would suggest.

Where there is broad consensus among commentators is that the focus on the *effects* of a set of practices is what matters. Whether they take one particular legal form or another, whether they involve particular instruments or another set, is not of first importance. Rather their effect on the welfare of society should be central to the design of competition policy.

Again, there is a general consensus over the appropriate measure for evaluating restraints: the net effect on total surplus. Economic efficiency is increased when total surplus (taken to mean the sum of consumer surplus and the economic profit of suppliers or an unequally weighted combination of these) is increased.¹³ However, at this point the consensus ends and a substantial literature has emerged debating the overall effects of restraints on economic welfare and the implications for competition policy.

The Chicago School's approach to examining the welfare effects of restraints has primarily relied on a simple welfare test advanced by Bork (1966). The test is derived by analogy with monopoly. A firm with monopoly power imposes societal welfare losses by restricting output. Thus, if output is cut back (respectively, expanded) as a result of restraints, then the restraints are anti-competitive (pro-competitive). However, from the Chicago perspective, a manufacturer would never impose vertical restraints with the purpose of restricting output. The argument that Bork offers is that the manufacturer is able to exert its market power, and obtain the appropriate monopoly profit, by setting a profit-maximizing wholesale price to a competitive retail sector. If the manufacturer used restraints that allowed retailers to restrict output *further*, then this would reduce its profit below the maximum level. Accordingly, the manufacturer's pursuit of self-interest can be relied upon to ensure that vertical restraints do not reduce social welfare. Thus, in Bork's opinion 'every vertical restraint should be completely lawful' (1978, p.288). These sentiments are echoed by Posner (1981) in calling for *per se* legality for purely vertical restraints.

This conclusion can be questioned on a number of accounts. As a general point, internalization of the externalities identified above will be in the manufacturer's interest, but the manufacturer and society do not have the same set of preferences. The manufacturer's interest in a high (monopoly) price, for example, may be in opposition to the social desirability of a low price. Furthermore, even taking the monopoly status of the manufacturer as given (i.e. distinguishing vertical from horizontal effects) does not mean that the manufacturer's actions will necessarily be in the interests of society. The Chicago view rests on the belief that vertical relationships cannot alter horizontal market structure, e.g. through raising capital requirement barriers to entry. Retailing is taken to be perfectly competitive and as such cannot contribute to manufacturer's market power. However, once retailing is acknowledged as not being perfectly competitive due to the presence of fixed and sunk costs (in turn implying economies of scale and barriers to entry) and differentiation between retailers (at the very least in terms of location), and, in addition, that retailers' product-differentiating activity can influence sales, then private and social interests may diverge. The manufacturer may well face an incentive to increase retailers' margins (i.e. control the second externality) as a means of reinforcing its market power and in so doing reduce welfare.

In this context, Rey and Tirole's analysis provides an interesting illustration of conflicting private and social objectives as a consequence of market uncertainty. As noted above, when retailers are not too risk averse, the manufacturer may impose exclusive territories, in preference to RPM or allowing unrestricted price competition. However, in this case, as shown by the rankings in Table 3, social welfare is likely to be higher with price competition amongst retailers since by comparison exclusive territories yield a higher expected price (because the manufacturer is required to raise the wholesale price to insure retailers, so introducing a double marginalization) and a socially sub-optimal sensitivity of consumer price to demand and cost uncertainty.¹⁴

Moreover, Bork's welfare test is based on a flawed analogy. The (accepted) output restriction rule for monopoly is based on restriction along a fixed demand curve. However, a manufacturer commonly employs vertical restraints with the intention of inducing a positive shift in the demand curve for its product (e.g. with respect to controlling the third and fourth externalities detailed above). In this regard, the welfare analysis of vertical restraints has more in common with the welfare analysis of product quality/differentiation and advertising, where actions are similarly designed to shift the firm's demand, than with the simple welfare analysis of monopoly. Here, as the literature on product differentiation and advertising demonstrates [notably Spence (1975; 1976) and Dixit and Norman (1978)], actions designed to shift demand and maximize profits may not be socially optimal. Specifically, a single manufacturer may find it profitable to use vertical restraints even though they impose welfare losses on society.

In this light, a general argument may be made as to why output increases associated with restraints may not be socially desirable. From the manufacturer's perspective, when considering an action it is concerned with the marginal effect: the marginal revenue accruing compared with the marginal cost. This will relate to the valuation for the marginal consumer, and if the action is profitable then such marginal consumers must be made better off. However, the effects on inframarginal consumers (who would buy the good irrespective of the action) also count as far as social welfare is concerned.¹⁵ Thus although some consumers are made better off, if others are made worse off as a result of the action, say because they

now face higher prices without gaining anything in return, the overall effect on consumers may be negative, which in turn may mean that aggregate welfare is reduced even after taking the firms's profits into account.

As an example, consider the question of how much sales promotion or provision of services is socially desirable. Retailers, as a consequence of free-rider effects (i.e. the third externality), will tend to supply less than the manufacturer would desire. As far as consumers are concerned, it may be thought, the more information the better. But such services are not costless, and if most people are well aware of the product anyway, the extra effort to capture the marginal consumers will add little to consumer benefits overall but may add substantially to consumer costs, in the form of higher prices overall to pay for the services. Thus control devices such as RPM or contract terms which induce this effort, and are privately profitable, *may* make consumers as a whole worse off [see Scherer (1983), Comanor (1985), Comanor and Kirkwood (1985) and White (1985)].¹⁶

The conclusion to be drawn from this analysis is that for vertical restraints designed to shift demand, a significant increase in sales volume may be required to ensure that welfare is increased. If, for example, the manufacturer imposes floors on advertising/service levels, or achieves this indirectly by using RPM, but these retailer outlays then only act largely to cancel each other out rather than to raise total sales volume, then it is likely that welfare falls. A role for Bork's welfare test would seem to be confined to considering restraints which are purely designed to reduce price with the demand curve taken as given, for example, in the present context, a minimum quantity restraint to remove a double mark up.

2.2. Vertical Restraints and Manufacturer Competition

The models of the previous section highlight the role of vertical restraints to control intrabrand competition. By assuming a monopoly manufacturer, these models abstract from concerns the manufacturer (and policy-makers) may have about interbrand competition. When, as is normal, the manufacturer faces competition in the (upstream) production sector

of the industry then an additional motivation for vertical restraints may come from the desire to control for the actions of rival manufacturers. It is therefore important to extend the analysis in this direction. The effects that the manufacturer may wish to control here fall into two broad categories:

(v) *Manufacturer free-riding effects*

Manufacturers may make investments that will increase the sales or lower the distribution costs of a retailer irrespective of the brands that the retailer carries. For example, manufacturers can provide the retailer with information on potential customers, technical support for promotion, sales training, servicing/repair equipment, or financing to equip the retail outlet. The nature of these services is such that the upstream benefits are not typically confined to the provider. If the retailer carries other brands, then the manufacturers of these brands can also benefit from such services, giving rise to a free-rider problem. For example, the provision of sales training by a manufacturer may make the retailer not only more effective at selling the provider's brand, but also at selling its rivals' brands. Manufacturers not providing any services, in avoiding the associated costs, can then charge a lower wholesale price in order to gain market share. As a consequence of this free-rider problem, manufacturers can be expected to make sub-optimal investments [Marvel (1982); Steuer (1983)]. A related free-riding problem can occur in the context of investments made by a manufacturer to raise the image or profile of its product, e.g. through advertising. Investments of this nature can provide the retailer selling the product with customer drawing power, but in attracting customers to the store other manufacturers may benefit through the increased 'passing trade', resulting in improved sales of their own products without having to undertake similar promotional investments.

(vi) *Manufacturer competition effects*

Manufacturers when raising price confer benefits on rival producers by increasing demand for their products. A positive externality is therefore created when the firm attempts to gain a greater margin as this increases the market share of rivals as retailers divert sales away from the firm's products and instead towards rival brands. Consequently, manufacturers will tend to set prices lower, and earn lower profits, when they face competition. From the

manufacturers' viewpoint, this problem becomes more severe as the intensity of interbrand rivalry increases, i.e. the manufacturers' products (brands) become increasingly substitutable. Here, a vertical restraint, like exclusive dealing, which prohibits the dealer from stocking rivals' products or a less direct method which puts pressure on the dealer to stock fewer rival products such as contract terms covering tie-in sales or quantity requirements, may handle both effects. However, the two externalities have very different implications for economic efficiency. On the one hand, actions to control the former effect are generally in society's interest, where, for example, efficiencies result from manufacturers investing optimally in selling and promotional activities. On the other hand, attempts to control the latter effect, i.e. restrict competition, say, by dividing up the market, creating entry barriers, or inducing existing rivals to leave the market, are by definition 'anti-competitive' and are likely to lead to a reduction in societal welfare.¹⁷ Thus, the effect of restraints which tackle both problems is ambiguous *a priori*. This suggests that, as is often the case in practice, the treatment by competition authorities of such restraints, notably exclusive dealing, should not be on a blanket basis.

The view that exclusive dealing promotes efficiency gains has been argued most forcibly by Marvel (1982), Steuer (1983) and Ornstein (1989). They contend that exclusive dealing can be used to control manufacturer free-riding problems arising from investment in dealers and investments which create customer drawing power, as well as a number of other potential inefficiencies. For example, exclusive dealing can protect the manufacturer's property rights in product innovation and design, preventing dealers switching to rivals which undercut the firm by copying new designs not fully protected by patent and copyright laws. In addition, exclusive dealing can be used to prevent potential free-riding by dealers cheating on product quality, e.g. substituting inferior goods for the advertised product or using cheap inputs in, say, the preparation of fast foods. Non-free riding benefits may also accrue by securing full dealer commitment. Exclusive dealing can further serve to reduce transactions between manufacturers and dealers, e.g. through administrative cost savings. Finally, long-term exclusive dealing commitments may be helpful in securing large, highly specialised resource investment which may otherwise be subject to post-contractual opportunistic behaviour. However, even though exclusive dealing may manage such problems, the firms may not

necessarily wish to use exclusive dealing. For instance, while a single manufacturer may face an individual incentive to adopt exclusive dealing when its rivals use non-exclusive dealing, say in order to solve a manufacturer investment free-rider problem, this may serve to intensify competition and have knock-on consequences for market behaviour. Specifically, with oligopolistic competition at the manufacturing stage there is also the strategic dimension to consider. For example, exclusive dealing enhances the incentive to make promotional investments, but as these investments are a form of competition between manufacturers, upstream profits may be higher with non-exclusive dealing and associated lower investment levels. Thus, while exclusive dealing eliminates the interbrand externality, competing manufacturers may jointly prefer not to use exclusive dealing contracts. This idea is examined by Besanko and Perry (1993) in a model where oligopolistic manufacturers sell through perfectly competitive retailers and make investments to reduce a retailer's marginal costs of selling the product. They show that when the interbrand externality is weak (in the sense that a manufacturer's investment mainly lowers the marginal retailing cost of its own brand), it is a dominant strategy for each manufacturer not to adopt exclusive dealing. When the externality is strong, so that investment lowers the marginal retailing cost for other brands as well, manufacturers may individually choose to adopt exclusive dealing (increasing their sales through their investment) but industry profits would be higher under non-exclusive dealing (where market output is less), i.e. the firms are essentially caught in a prisoners' dilemma where individual preferences diverge from joint preferences.¹⁸

The strategic dimension of vertical restraints becomes especially relevant when considering attempts to control the externality arising from manufacturer competition. For the individual producer, it would naturally prefer to avoid all (upstream) competition and have a monopoly control over the market. With this object in mind, or the intention at least of limiting competition, the manufacturer may seek to raise barriers to upstream entry and foreclose the market (i.e. reduce rival manufacturers' access to retailers). Most attention has focused on the role of long-term exclusive dealing arrangements in achieving this. Such arrangements between a manufacturer and its dealers foreclose other manufacturers from distributing their brands through these agents, and force them to use alternative less efficient marketing channels. In effect, barriers to entry can result from an incumbent firm raising (potential)

rivals' costs by purchasing exclusive rights to particular retailers [see Krattenmaker and Salop (1986)]. For example, exclusive dealing contracts could be used to increase the entry cost of a potential competitor if distribution involves significant economies of scope. In this case, access is denied to an established distribution system offering low retailing costs, and instead the potential competitor is required to distribute its products in a less efficient manner, e.g. by setting up its own retail network. The increased distribution costs may then be sufficiently high to deter entry. A similar entry barrier may be created when there is a limited supply of high quality retailers (or retail locations). Long-term exclusive dealing contracts may then be used by an incumbent manufacturer to tie up the best retailers (or locations) with the result that a new entrant would be forced to use an inefficient distribution system. The competitive (cost) disadvantage the entrant would suffer may be sufficient to deter entry.¹⁹

Comanor and Frech (1985) develop a model to consider the conditions under which successful entry deterrence can occur. In their model a single incumbent producer sells a brand which is preferred by a proportion of consumers over the brand of any other producers. This quality advantage means that some consumers will purchase the product as long as its price does not exceed that of rival brands by more than some fixed amount. The other consumers perceive all brands as identical. In addition, an asymmetry also exists in distribution where incumbent retailers have lower costs of resale than any new distributors. Thus the potential entrant faces a double disadvantage: some consumers perceive its brand to be inferior quality and if the incumbent uses exclusive dealing then as an entrant it would be forced to use less efficient retailers. Consequently, if the incumbent does impose exclusive dealing on its distributors, it is in a position to set a limit price to profit from the differential distribution costs. The incumbent manufacturer can set either a low limit price which deters entry or a high limit price which allows a manufacturer to enter and serve all the indiscriminating consumers. In both cases, the effect is viewed as anti-competitive, with consumers generally paying higher prices.

Mathewson and Winter (1987), in responding to the paper by Comanor and Frech,²⁰ present a different model in which two manufacturers sell to a large number of retailers, each of which has a local monopoly. Without exclusive dealing all retailers sell both products. In order to

secure an exclusive dealing agreement a manufacturer needs to offer a wholesale price low enough to make it more profitable for the retailer to accept the contract than to accept a contract from the rival manufacturer at a wholesale price equal to marginal cost. Exclusive dealing is shown to arise only when one manufacturer has a lower marginal cost of production. Furthermore, in this model, exclusive dealing has ambiguous welfare effects since the choice of the consumers is reduced in each locality, but competition is stimulated as producers fight for the right to serve each retailer.²¹

In both of these models, complete foreclosure is possible as a result of entry barriers into retailing which protect incumbent retailers from competition and an asymmetry between manufacturers (where one manufacturer has, respectively, a product or cost advantage over its rivals). In Comanor and Frech's model the foreclosing manufacturer purchases the retailing barrier to entry and converts it into a manufacturing barrier to entry. By contrast, in Mathewson and Winter's model the retailing barrier allows the manufacturer to exercise its existing (production) cost advantage to exclude the other manufacturer.²²

In the absence of either a fundamental asymmetry between manufacturers or substantial retailing barriers, attempts to foreclose completely may not be profitable.²³ However, exclusive dealing contracts may still serve a strategic purpose in 'dampening' the competition between rival manufacturers. Lin (1990) examines this issue in a model where competing manufacturers can choose to distribute their products through a single (common agent) retailer or use a specialist retailer which is prohibited from selling rival manufacturers' products by an exclusive dealing contract. Even though the products are differentiated, selling to a common retailer triggers off such intense competition among manufacturers that wholesale prices are set below marginal costs, though franchise fees mean that profits can still be positive. As a result, the manufacturers (individually and jointly) prefer to relax competition among them by each hiring an exclusive dealer. This allows the producers to set wholesale price greater than marginal production costs, with the consequence that the final price is higher, and social welfare is lower, with exclusive dealing than with common agency.

O'Brien and Shaffer (1993) show that Lin's conclusion depends on the assumed ability of manufacturers to exploit a common retailer, i.e. extract own-brand downstream profit through an appropriate combination of wholesale prices and fixed fees, and thus leave it with zero profit. They argue that manufacturers, while being able to exploit fully exclusive dealers hired from a competitive pool of retailers, will be unable to extract all the surplus from a common retailer which, having been selected, is in a position where it can credibly threaten to drop one of the products. In their model, common agency allows the retailer to realise the fully collusive outcome through manufacturer 'sell-out contracts', where two-part tariffs are based on wholesale prices equal to producer marginal costs with the retailer left as the residual claimant in effectively maximising the collective profits of two stages.²⁴ The franchise fees only allow each manufacturer to extract its incremental contribution to the profit of the fully integrated structure, where given that the products are (imperfect) substitutes this leaves a positive amount of profit for the common retailer. Accordingly, there is no longer any dampening-of-competition effect from exclusive dealing. Rather, final prices are higher, and social welfare lower, in common agency as a consequence of the interbrand competition externality being internalised through the sell-out contracts. Even though joint profits are maximised in common agency, the manufacturers, nevertheless, choose to use exclusive dealing contracts as this offers them a higher level of profits when taking account the positive profit retained by the retailer under common agency.²⁵

A significant weakness shared by both the above models concerns the assumption that retailers are, once they have been selected, monopolists in the sense that they face no competition from other retailers carrying the same brands. It is, for instance, this assumed monopoly power which allows for O'Brien and Shaffer's argument that a common agent can retain some of the surplus. Each manufacturer has no need for more than one dealer since, in this framework, retailers are undifferentiated and play no active role other than merely distributing products to consumers. In practice, retailers are differentiated, at the very least in terms of their location. Accordingly, a manufacturer may prefer to use more than one retailer to distribute its product, so that competition can also arise in terms of the number of retailers each manufacturer supplies. Assuming free entry into retailing, Besanko and Perry (1994) and Dobson and Waterson (1994a), show that with differentiated retailers and differentiated

producers exclusive dealing allows manufacturers to set higher margins due to the absence of in-store interbrand competition and the fewer retailers of each brand which can be supported in the market (given that there are fixed costs associated with retailing). The higher wholesale prices under exclusive dealing induce retailers to set higher final prices. As a consequence of this dampening of competition, manufacturer profits can be higher and, when there are significant unexploited economies of scope in retailing, social welfare is reduced when compared to the situation where manufacturers use non-exclusive dealing contracts. (See also Section 4 below for more discussion of this question.)

A similar dampening-of-competition effect can occur when manufacturers use vertical restrictions that decrease intrabrand competition between retailers (e.g. by assigning exclusive territories) and reduce competition between producers by making wholesale price cuts less attractive. Rey and Stiglitz (1988, 1994) consider the case of oligopolistic manufacturers using exclusive territories as a device to reduce competition. When these restraints are employed, a dealer, as a consequence of being given some monopoly power, may pass on only part of a reduction in wholesale price to consumers. Furthermore, if one manufacturer's dealer cuts its retail price following a reduction in its wholesale price, then the other dealers may respond by cutting their own prices. Both effects lower the increase in demand that can be expected by a manufacturer, thus discouraging price reductions. In effect, exclusive territories, by removing intrabrand competition, serve to reduce the perceived elasticity of demand for manufacturers' products. This makes demand less sensitive to changes in wholesale price when compared to the situation where products are distributed through competitive retailers or, indeed, where the manufacturers distribute their own products and compete with each other at the retail level. Then, as long as a device like franchise fees can be used to extract retailer profits, manufacturers will have an individual (and joint) incentive to employ exclusive territories, to the detriment of societal welfare.²⁶

These latter models demonstrate that when competition exists at each level, strategic considerations may play a significant part in determining the form of vertical relations. Evidence in support of this view is, for example, provided by Slade (1993). Such strategic effects, if dominant, represent a serious cause for public policy concern as they can facilitate

collusion and otherwise limit competition and impede new entry. Clearly, in terms of assessing the overall effect of a restraint, any efficiency-enhancing effects must outweigh these detrimental effects if it is to be regarded as socially beneficial.

2.3. Retailer Power and Vertical Restraints

The literature surveyed in the previous two subsections shares the common theme that vertical restraints are mechanisms merely designed to correct inefficiencies in the principal-agent relation and, where possible, allow manufacturers to extract all the surplus generated (e.g. by using two-part tariffs). Retailers are thus denied by assumption real market power, and they have an active role only in the sense that they provide a sales service when distributing products.²⁷ However, this service may, in practice, be particular (or even unique) to a retailer, which in turn may provide it with a source of market power (as both a buyer and re-seller), especially when the service can significantly affect consumers' purchasing decisions. And, as the next section of the report discusses, retailers may also derive market power from the localised nature of retail competition, the presence of economies of scale and scope, and entry barriers due to the presence of sunk costs. It is therefore not surprising that total franchise fee extraction is rarely observed in practice. Indeed, it is not uncommon to see the reverse applying, i.e. 'negative' fixed fees, usually in the form of manufacturers providing cheap loans, technology, and demonstration equipment, or, in an increasing number of cases, paying hefty slotting allowances to obtain shelf space.

The role of retailers in determining the presence of vertical restraints has, with a few exceptions, been neglected in the recent literature. However, an argument with a long tradition is that restraints on distributors may be 'self-determined', in the sense that restrictions, particularly those designed to reduce intrabrand competition, may be collectively sponsored by retailers in a dealer cartel. For instance, by using a manufacturer to impose restraints that serve to hold up retail prices, e.g. through RPM or territorial restrictions, dealers may be able to effect a collusive outcome through limiting downstream competition. Here, restraints act as a means of coordinating price-fixing among retailers by preventing the margin between retail and wholesale prices from being eroded by competition. Thus, a horizontal price-fixing agreement, which might otherwise be difficult to sustain, is disguised and enforced by a vertical restriction. Equally, the restrictions may serve the dealer cartel by

protecting members against new entry by more efficient firms, e.g. retail chains with lower cost structures. In both cases, the effect of such dealer inspired restraints is that downstream competition is limited and retail prices are higher than they might otherwise be, with the consequence that social welfare is reduced.

Retailer pressure may work even in the absence of a formal dealer cartel. Sharp (1985) maintains that manufacturers may be susceptible to the pressure of one or a few critical retailers which have gained a significant degree of control over the market (e.g. through consolidation).²⁸ This notion has been formally considered by Shaffer (1991) where oligopolistic retailers individually seek to contract with (perfectly competitive) manufacturers. In this framework, slotting allowances and RPM can serve a strategic role in dampening downstream competition, allowing retail prices and profits to rise. Slotting allowances not only offer retailers a direct up-front payment but also provide an indirect benefit by committing retailers to taking a wholesale price above a manufacturer's production marginal cost which induces them to raise their retail prices. In a similar way, commitment to a high retail price by one retailer through an RPM contract induces a rival to raise its own price, which serves to increase profits for all retailers. Shaffer shows that when individual supplier-retailer contracts, including wholesale price terms, are observable, then retailers will individually and jointly seek to induce manufacturers to pay slotting allowances rather than use RPM. If, however, contracts are unobservable by rivals, such that they are unable to signal their mutual intention to dampen competition through accepting high wholesale prices, then RPM may instead be employed by a retailer to encourage its rivals to raise their retail prices.²⁹

Shaffer's model, in keeping with the models described in the two previous subsections, is still essentially a principal-agent model, only this time the retailer is the principal and its supplier is the agent. Such a framework would appear to be inappropriate when considering a setting in which both manufacturers and retailers operate in concentrated sectors. Here, in the absence of a dominance-subservience relationship, there is no obvious 'principal' or 'agent'. Instead, restraints are likely to arise only through mutual consent.

Chang (1992) considers this issue in the context of successive oligopoly, where two manufacturers compete to supply two retailers, with the firms making decisions over exclusive dealing contracts and output rates. The analysis shows that the firms engage in

exclusive dealing even though it is not in their collective interest. In essence, the firms are caught in a prisoners' dilemma situation, where an exclusive dealing arrangement between an upstream supplier and a downstream buyer triggers further exclusive dealing relationships between their rivals in the industry. Even though the firms jointly lose out, exclusive dealing contracts, which eliminate any double marginalisation (by contracting firms using side payments), improve societal welfare.³⁰

However, as Dobson and Waterson (1996) show, this conclusion depends crucially on the form of competition in the market. With firms competing in terms of setting prices, there exists a strategic incentive for avoiding head-to-head competition when interbrand and intrabrand rivalry is intense. The result is that even though exclusive trading may remove vertical pricing distortions, the firms' contracting decisions may be in conflict with social welfare interests, as the effect of such restraints is to reduce the variety of 'goods' (i.e. product and retail service combinations) in the market.

This work on mutually agreed restraints is relatively new and untested. Nevertheless, the policy implications do appear to be rather different from those emanating from the literature on imposed restraints (i.e. within a principal-agent framework). This issue is taken up in section 4 where a modelling framework is developed which makes this distinction while allowing for the possibility of imperfect competition at both the manufacturer and retailer level. However, since the view that retailers can have substantial power is not universally shared, it is worth first discussing in more detail the reasons why competition at the retail level may be expected not to be perfectly competitive.

3. The Sources and Forms of Retailer Market Power

As the previous section demonstrates, the bulk of the existing economics literature on vertical relations treats retailers as operating without market power. A particularly strong form of this argument is adopted by the Chicago approach which considers the retailing function to be essentially perfectly competitive, where the standard characteristics of easy entry, numerous competitors, and a high degree of buyer and seller mobility in response to small price differences are generally assumed to apply.

In contrast to this view, we contend that perfect competition is not evident in most areas of retailing and that rather market power, at least in a limited form, is the more likely norm. This section shows that each of the required conditions for perfect competition may be generally absent in retailing. At best, it appears that retailing may be approximated by monopolistic competition where firms are slightly differentiated and entry, although not free, is relatively easy. (This, for example, is the approach that Bresnahan and Reiss (1991) take with some empirical success in the US.) However, it also appears to be the case that there are an increasing number of UK markets where retailing may be better approximated by oligopoly, with the development of large retail chains possessing substantial market share and earning substantial profits. Furthermore, even for retail sectors which are highly fragmented on a national scale, the localised nature of retailing competition for some goods, due to consumers' search costs, means that the number of retailers operating in a given outlet class is likely to be very low, thus effecting a 'local oligopoly', where prices can be maintained above costs by retailers providing different retail offers and consumers having (different) store preferences.

3.1. *Barriers to Entry*

It is by no means obvious that effective entry into retailing is as easy as has been traditionally claimed. At the institutional level, licensing and planning restrictions hinder new entry, e.g. the tight regulations for public houses, pharmacies, and petrol stations. Furthermore, incumbency advantages arise through location (e.g. prime sites on high streets and retail parks), experience (especially where learning-by-doing is a key aspect) and reputation (which is particularly important to consumers for experience and credence products). Moreover, entrants face the prospect of incurring sunk costs in entering markets, and thus face exit costs, when investments in highly specific assets are required. In particular, sunk investments are likely to be associated with different forms of asset specificity in many retail markets [Williamson (1986)]. For example, physical-asset specificity arises when entrants are required to purchase capital goods which are suited for the particular type of product to be sold, and of little use for retailing other products (e.g. equipment for a petrol station). In addition, human-asset specificity arises when employees possess special skills which are not easily replicated or transferred and which are acquired by experience (e.g. demonstrating technical goods such as cars or computers). Such features are likely to mean that new entrants would not be able to compete on equal terms with established firms, raising the possibility of incumbents being able to use predatory pricing and other forms of strategic behaviour to cause new entrants to withdraw from the market, which in turn establishes a reputation for an aggressive response to market incursion thus serving to deter further entry.

These barriers generally make large scale *de novo* entry impractical. The more serious threat comes from established players in neighbouring markets which can extend their operations to sell other products (e.g. Sainsbury's, as the largest UK retail grocer, operating as Homebase in the DIY and household goods market) or extend geographically (e.g. the entry of the German chain Aldi into the UK retail grocery market, or the American chain Toys'R'Us selling through superstores across Europe). That is, barriers to mobility may be less of a problem than barriers to entry, where established firms can draw on their existing skills and resources to facilitate moving into new areas, in the same way as a manufacturer may practice product extension. However, given the potential overlap of interests between retailing conglomerates, mutual forbearance may temper this threat.

3.2. Economies of Size and Scope

A further reason for the presence of retailing market power, which also reinforces incumbency advantages, is due to economies of size and scope which give large retailers a cost advantage over smaller rivals. Increasing returns arise for two basic reasons. Firstly, fixed costs (e.g. for demonstration and storage facilities) are significant in most areas of retailing and economies arise through the fixed cost element of average costs declining as sales increase. Secondly, variable costs may be lower for larger retailers, particularly when buying economies are present, e.g. where monopsony power can be exercised against suppliers to obtain discounts when bulk buying. Furthermore, economies of scope in retailing arise from using common display and storage facilities for a variety of products, allowing fixed costs to be shared across different product lines.

Economies can be found at a number of operating levels. At the individual shop level, economies of scale have resulted in the emergence of superstores in many markets (originally in groceries, furniture and DIY, but now also in everything from car accessories to electrical products to toys and even to pet care products). These superstores take advantage of economies of scale and scope where fixed costs are typically dispersed over wide product ranges. In addition, economies exist at the business level, where store chains now dominate most areas of retailing activity. In particular, these chains can take advantage of economies of scale in distribution and efficient warehousing, where each store is linked to a sophisticated ordering system, such as ‘electronic point-of-sale’ (EPOS), to allow for precise stocking levels. Furthermore, at the corporation level, many of the top companies have moved beyond their original markets (arguably) drawing on economies of scope to become retailing conglomerates.³¹ Moreover, dominant retailers in one country are now trying to spread their retailing concept and brand image to other countries. In Europe this has partly been facilitated by the move to the ‘Single Market’. However, a general internationalisation is taking place as retailers reach market saturation point in their own country and where further expansion is likely to arouse the interests of antitrust authorities.³² Examples of ‘imported concepts’, into the UK, include McDonalds (USA), Ikea (from Sweden), Aldi (Germany), Netto (Denmark), Benetton (Italy), and Toys‘R‘Us (USA), while examples of ‘exported concepts’ (with varying degrees of success) include Marks & Spencer, Body Shop, Sainsbury’s, Virgin, Laura Ashley, and Ratners.³³

3.3. National Market Power and Its Effects

The exploitation of these economies has led to an increase in the average size of establishments, as superstores have become commonplace. Even so, small independent establishments still predominate in respect of their number. However, their influence on the retail trade has substantially diminished in recent times. In most sectors, retail chain groups have become prevalent, with chain stores dominating the prime retail sites on high streets and edge-of-town retail parks. The result has been that, in contrast to manufacturing, concentration in the retailing sector has increased markedly over recent years.

The most striking case has occurred in the retail grocery trade where, as Wrigley (1993) observes, the market share of the top five firms increased from under 25% of national sales in 1982 to 61% in 1990.³⁴ Perhaps not unconnected with this sharp increase in concentration, net profit margins for this group roughly doubled over this period to average around the 7% mark.³⁵ Furthermore, the extent to which retailers now dominate manufacturers in this sector is reflected by the fact that the return on capital employed in food retailing is nearly double that of food manufacturing.³⁶ Even the power of the large multinational companies which supply heavily advertised brands has largely been circumvented by the ability of retailers to control the allocation of selling space while introducing in-store marketed own-label brands as effective rival products.³⁷

In a number of sectors, one or two firms now control a considerable slice of the market. For example, Marks & Spencer and the Burton Group jointly control around a quarter of the entire clothing market. In addition, there are companies like Boots in health care products which dominate their market. The substantial market share that these and other firms now possess means that they can conceivably control their respective markets, acting as price leaders (i.e. setting the tone for others to follow) while reaping economies of size to keep unit costs down. The result is that the profits such firms make can be considerable, as reflected by capitalization values placing a number of them in the list of the leading 100 UK companies.

For the retail trade as a whole, government statistics show that concentration in most sectors increased substantially throughout the 1980s. The five-firm concentration level for the whole market increased by one third over the period 1984-1991, where by 1991 the largest five

firms accounted for more than a fifth of the £138bn turnover in the total retail trade. To illustrate the extent of this increase across the trade, Table 4 provides comparative concentration figures for broad commodity groups over this period, along with the respective (average) gross profit margins for the large multiple retailers. The table shows significant increases in concentration across most sectors, especially in the food and drinks sectors where levels increased by over 50% in this seven year period.³⁸ The table also shows that gross margins generally moved in the same direction as concentration levels. This may have resulted from retailers reaping economies of scale and improving productivity levels, as well as integrating backwards into wholesaling, but it may also reflect their increased ability to exercise buying and selling power. Indeed, as Tordjman (1994) shows, British retailers are generally the most profitable in Europe. The top six profit earners are all UK based firms and, for example, in the largest sector, the grocery trade, net margins among the major British firms are nearly three times the EU average.

The increasing monopsony power is also evidenced by the practice of manufacturers paying 'slotting allowances' (i.e. shelf space rental fees) in order to obtain retailer patronage. These may be cash gifts or payments in kind, such as free goods.³⁹ As Shaffer (1991) notes, the sums involved are not inconsiderable. For instance, it has been estimated that the practice in the U.S. accounted for 1/3 to 1/2 of the \$19 billion spent by producers on trade promotions in 1987. Shaffer draws on trade press articles suggesting that some warehouses and grocery chains demand up to \$100,000 for each product stocked. In particular, shelf space shortage in retail grocers appears to be most marked for frozen and refrigerated foods.

Table 4 - Concentration levels and gross margins in UK retailing

Retail sector (by broad commodity group)	Sector share of total retail trade (%)			Five-firm concentration level (%)			Multiple retailers' gross margins (%)		
	1984	1991	% Change	1984	1991	% Change	1984	1991	% Change
Food	31.7	29.6	-6.6	28.2	42.4	+50.4	20.0	23.5	+17.5
Drinks, confectionery, tobacco	14.7	14.5	-1.4	14.5	21.8	+55.7	16.3	20.9	+28.2
Clothing, footwear, leather goods	16.0	15.3	-4.4	30.3	36.4	+20.1	45.1	45.1	0
Household goods	20.0	20.8	+4.0	15.7	19.7	+12.6	35.9	38.3	+6.7
Other non-food goods	15.8	18.3	+15.8	20.3	22.4	+10.4	33.8	37.1	+9.7
Hire and repair	1.8	1.2	-33.3	61.8	60.6	-1.9	94.9	90.4	-5.2
Total retail business	100	100	/	15.6	20.8	+33.3	27.4	31.1	+13.5

Sources: Adapted from Table 15 in *Business Monitor SDO25 (1984) Retailing*, Business Statistics Office, HMSO: London, and Tables 2 and 14 in *Business Monitor SDA25 (1991) Retailing*, Central Statistics Office, HMSO: London.

The pressure for manufacturers to gain access to the retail level is becoming increasingly intense as manufacturers step up product proliferation. For instance, in food retailing, even though the number of products sold by the average grocery supermarket doubled in the 1980s to well in excess of 20,000 products, the number of new products has increased at an even faster rate. Shaffer (1991) quotes, for the US, a four-fold increase from 2,600 per year in 1978 to 10,200 per year in 1987. In such circumstances, competitive pressures give manufacturers little alternative but to offer substantial discounts to large retailers.

Multiproduct retailers have now become effectively insulated from the threat of any individual manufacturer extending vertically to set up shop and sell independently by virtue of the high number of product lines carried at the retail level over which fixed costs are diffused. If anything, the balance of power has shifted to the extent that retailers can credibly threaten to replace an individual supplier with minimal disruption by being able to draw on its network of existing suppliers or find a new supplier only too willing to step in.

Crewe and Davenport's (1992) study of clothing retailing demonstrates the potency of this threat of supplier switching, well-illustrated by Marks & Spencer's (M&S) sourcing practices. By enticing suppliers with initially large orders they become heavily dependent on the retailer. This allows M&S to apply its buying power, which is especially effective given the lack of alternative outlets in this concentrated retail sector, to ensure that suppliers operate on wafer thin margins. When suppliers fail to cut prices even further then they can be dropped, often resulting in receivership. This causes minimal disruption to the retailer since it can draw on cheap foreign imports or use other domestic suppliers which are desperate to fill order books.⁴⁰

Not surprisingly, given the effectiveness of this strategy in keeping product costs down while at the same time ensuring high quality levels, other retailers have attempted to use similar tactics. The arms-length buyer-supplier relationships (often relying on agents as intermediaries) have largely given way to the use by powerful retailers of closely controlled 'preferred' (i.e. favoured) suppliers, which can in turn sub-contract production, creating a supplier hierarchy. The result is that for the retailer, risk is shifted onto the preferred suppliers who are responsible for delivery and quality while receiving very narrow margins.

Consequently, these retailer-supplier relationships are highly asymmetric, with the retailer able to exercise very detailed control over the production process (usually dictating the technology required and providing exact and detailed product specifications), without carrying the burden of ownership.

3.4. *Local Market Power*

While there is considerable evidence to suggest that, with the rapidly growing concentration levels and rising gross and net margins, retailers' market power at the national level is increasing, for the individual retailer, the primary concern is with local conditions since retailing markets are rarely national, being limited by the extent of consumers' willingness and ability to travel. That is, the 'market' for retailers differs fundamentally from that of manufacturers, where retailers operate in local markets (which may perhaps be overlapping) while manufacturers are more likely to be operating at the national level, producing goods of national appeal which can be readily transported.⁴¹ As Porter (1976, p. 13) argues, the implication is that retail markets are likely to be highly concentrated oligopolies:

Retailers never sell a consumer good in a national market. Because the consumer must travel to the retail establishment it must be in reasonable proximity to him. Hence the relevant market for consumer goods may be as large as a city or small region, but certainly no larger and in many cases much smaller. For some goods where convenience is important to the consumer, the relevant retail market may encompass that group of consumers within a five-minute drive of the retail establishment. In contrast with typically low national concentration ratios for a given retail outlet class, the concentration of retail establishments in the relevant retail market is often high. Two to five retail establishments commonly make up such a market.

This localised competition for services offers the prospect for retailers to be able to exercise market power over geographically constrained consumers. Furthermore, given their locational proximity and the structural symmetry which can occur where firms sell equivalent product lines and face the same input and retailing costs, retailers may find it relatively easy to collude at the local level. In these conditions firms can quickly and accurately detect strategy changes by competitors, so reducing the individual incentive for making secret changes, e.g. attempts to gain market share by lowering prices or increasing advertising, as

such moves are likely to generate an immediate response from rivals.⁴²

The size of the local market facing a retailer will largely depend on population density. However, the type of products sold may also be a significant factor. Porter (1976) draws the distinction between retailers which sell 'convenience goods', e.g. food which is purchased on a regular basis and constitutes a small proportion of a consumer's budget, and those selling 'shopping (i.e. non-convenience) goods', e.g. expensive items purchased infrequently such as jewellery, furniture, and household appliances such as televisions.⁴³ In the former case, e.g. a supermarket, little sales assistance in the form of salesperson interaction is provided with the sale and the locational density of outlets is usually high. In the second type, e.g. car or audio equipment dealerships, sales assistance is invariably provided with the sale and outlets are selectively rather than densely located.

A number of empirical studies have shown that retail prices are positively related to local retailing concentration levels. For instance, Cotterill (1986) estimates equations explaining differences across supermarkets in an index of food prices in 18 local geographic markets in Vermont, USA. The four-firm seller concentration ratio is used as an index of market structure, and is shown to have a positive coefficient in the price index regressions. In an earlier study, Marion *et al.* (1979) used price data for a basket of 94 grocery products for 36 firms in 32 US Standard Metropolitan Statistical Areas. Their findings show a strong positive correlation between price and concentration (measured by a Herfindahl index) as well as market share, suggesting both the joint exercise of market power in oligopoly over and above the exercise of firm-specific market power.^{44 45} The careful analysis of Bresnahan and Reiss (1991) on isolated local markets is also strongly indicative of a negative relationship between profitability and firm numbers. Further evidence is provided by a number of analyses on gasoline pricing - see Marvel (1989). However, because the good is so homogeneous price wars are common to this sector even in highly concentrated local markets [Slade (1987)].

3.5. Retailer Differentiation

For manufacturers, product differentiation is usually achieved by producing a good which either has a combination of physical attributes which are valued more highly by all consumers (i.e. distinguished by universally acknowledged quality differences resulting in ‘vertical differentiation’) or a combination which is preferred by some subset of consumers, while remaining consumers prefer alternative combinations present in other products (where consumers’ different tastes create ‘horizontal differentiation’). However, while the characteristics of manufactured goods may be relatively straightforward to specify, the factors which differentiate services like retailing are less immediately obvious. Yet retailers are viewed by consumers as imperfect substitutes.⁴⁶ This feature serves to dampen the intensity of competition between retailers and provides a general source of firm-specific market power in the retailing function.

The reasons for preferring one particular store over another, apart from prices, are likely to include the store’s location, convenience (e.g. parking facilities), layout, ambience, product range, and sales personnel and pre- and post-sales service. Moreover, differentiation exists for large and small stores alike, and it is quite possible for the small specialist store, successfully differentiating itself from rivals, to have greater market power than a large multiple retailer which is in direct competition with other neighbouring retailers.

Given the advantages for a retailer of having consumers prefer its store(s) over rivals’, it is not surprising that retailers have put considerable effort into distinguishing their service from competitors’.⁴⁷ Just as manufacturers have sought to develop and promote their products as ‘brands’ that are recognised and appreciated by consumers, retailers, in particular the large multi-product chain-stores, have sought to establish their own ‘retail brand’ as a means of attracting customers into their stores and for encouraging those customers to buy and, very importantly for convenience stores, to continue to buy the goods available from them rather than from rivals.

Retail branding has become especially important for multiproduct retailers which operate

with very similar product ranges to rivals, notably in grocery and clothes retailing. Retail branding has the double benefit of differentiating services on the selling side as well as providing retailers with bargaining power on the buying side as a means of countervailing the selling power of brand manufacturers. The manufacturer's position is especially weakened if retailers choose to develop own-label products, as part of the retail branding process, as this breaks the manufacturer's link with consumers which has been built up through direct appeal to consumers, typically through advertising.⁴⁸ The service reputation of retailers means that their own brands commonly command a significant premium over 'no brands' (see e.g. *Marketing*, July 29, 1993, pp. 12-13), yet by free-riding on manufacturers' advertising and reputation for the leading brands, own-label products can be successfully priced below the prices of the leading brands.

In summarising the advantages for retailing branding, a director of Tesco, as quoted in Murphy (1990, p.65), states:

Retailers have now recognised that a supermarket need not be just a place to buy a selection of brands. Instead, the shop itself, its location, its atmosphere, the service it offers, the range of goods and prices, can become the brand, and the retailer can begin to extract the benefits which investment in branding can bring. The value which the store name acquires can be transferred to a range of goods which themselves reinforce the image of the store.

The largest retailers have now extended this concept to offer a range of retail brands, often through segmenting the market by customer targeting according to socio-economic groups. This has been a noticeable feature of clothes retailing for some time - see Totterdill (1990). But this concept has even spread to grocery retailing, where in attempting to prevent discount retailers such as KwikSave, Aldi and Netto from gaining further market share, Gateway has started to operate its own discount chain, Food Giant, in competition with its existing Gateway stores, and multiples such as Sainsbury and Tesco now operate with more than one level of 'own' and 'no' brand product.

3.6. Concluding Remarks

The analysis above has detailed a number of areas, mainly related to high street shopping goods, where powerful retailers may prevail. In some such areas, e.g. grocery, the concentration in power of retailers in the UK is unusual by comparison with many other developed Western economies and although Germany, France and the USA, for example, have seen rising concentration levels, the nature of competition appears to be different. Increases in concentration in these other countries has been largely due to the development of hypermarket discount chains, operating with low margins. By contrast, the UK grocery market has become dominated by large firms seeking to emphasize retail brands and service differentiation, with the result that rigorous price competition has on the whole been avoided, allowing for high net margins and high profit levels to be maintained. This raises issues of public policy concern related to whether further concentration by merger or organic growth is in the public interest and whether institutional restrictions and incumbency advantages are impeding new entry and serving to dampen competition at the retail level. However, it often does not raise issues for vertical linkages per se.

At the same time, there are other areas, often those covered by exclusive purchasing or similar agreements, where the development of retail chains separate from manufacturers, has been modest. Notable examples include car retailing, petrol retailing and (at least until recently) the sale of on-license alcoholic drinks. For instance, the MMC report on *Beer* (1989a) remarked on the absence of wholesaling and retailing chains. Here concern is that manufacturers may be successfully suppressing the emergence of retail power, which may have otherwise acted as a socially benign countervailing force, as well as using dedicated retailers to restrict (interbrand) competition at their own level.

4. The Effects of Vertical Restraints on Inter and Intra-brand Competition

There are relatively few models which embody an element of (potential) competition at both the retailer and manufacturer level. Yet for most products, and most consumers, this is an appropriate setting. Thus, in order to develop a framework for evaluating vertical restraints it is important to have a model with at least two stages of economic activity with (potential) market power. Here these are called, for convenience, manufacturing and retailing. There must also be a clear representation of the concepts of interbrand and intrabrand competition and the linkage between them. Both these points are made by Steiner (1991), who is critical of the economic underpinnings of US policy. But in addition, we believe an explicit distinction should be made between restraints based upon agreements and those based upon dominance. The modelling framework developed below does all these things, within a stripped-down model based upon Dobson and Waterson (1994a, 1996). It is meant to be suggestive of general trends, not definitive nor empirically representative.

4.1. *The Basic Framework*

Consider a retail market where there are two products ('brands') for sale, indexed by $i, j = 1, 2$, $i \neq j$. Retailers selling product i are indexed by $h = 1, \dots, n_i$ where n_i is the number of distributors selling i , and those selling j are indexed by $k = 1, \dots, n_j$. The products come from manufacturers M_1 and M_2 .

In terms of a simple linear heterogeneous products demand specification, we postulate that the inverse demand for brand i from (diversified) retailer h is

$$p_{ih}^D(q) = 1 - q_{ih} - \beta Q_{ih} - \gamma q_{jh} - \delta Q_{jh} \quad 1 \geq \beta, \gamma \geq \delta \geq 0$$

where Q_{ih} is the quantity of brand i sold by all other retailers selling the brand, q_{jh} is the quantity of the other brand, j , sold by retailer h , and Q_{jh} is the quantity of brand j sold by all other retailers selling the brand. The β term measures *intra-brand* rivalry, which becomes

more intense (i.e. retailers' services become closer substitutes) the closer its value is to unity. Correspondingly, the γ term measures in-store *interbrand* rivalry, which again becomes more intense (i.e. the brands become closer substitutes) as its value approaches unity. The δ term reflects interbrand rivalry between different retailers. In the present context of two available products and all retailers being equivalent this can be presumed to be a function of both the intensity of intrabrand and in-store interbrand rivalry. For simplicity and analytical convenience, in developing the model we weight both of these influences in equal proportions and assume that $\delta = \beta\gamma$. Thus our specific assumption is that, as an influence on the price of product 1 from outlet 1, the ratio of product 2's effect is the same between outlets. This simplification, though by no means essential, proves useful since it reduces the number of variables sufficiently to allow us to present a graphical analysis of the whole framework.⁴⁹ A key point to observe is that, when exclusive dealing occurs, the demand function changes. Clearly the term in q_{jh} drops out and if territories are exclusive so does the term in Q_{ih} . Consequently, cross elasticities of demand are not invariant to the structure of the market. This is an important issue in working from observations of markets to policy prescriptions.

For simplicity we treat the two single-product manufacturer framework as a maintained assumption throughout the analysis below. However, on the retailer side we use two straightforward variants.

4.2. A Model with Monopolistically Competitive Retailers

The first variant has retailer numbers being relatively large. It is clear that if the numbers are very large, the retailing sector may be treated as competitive, and we are into the realm of single-stage models. However, as we have argued above, it is not sensible to make this assumption. A clear alternative which we adopt is to have retailers with fixed costs, and allow free entry to determine their numbers in equilibrium. We then have (at least) two possible equilibria, one where the manufacturers impose exclusive trading, and one where the retailers are allowed to sell both products. The nature of the outcome will depend upon the level of fixed costs, and we also incorporate the possibility of economies of scope, in order to

enrich the tradeoff involved.

The second case has the number of retailers fixed at two. Here we can contrast arms-length operation, involving a linear transfer price to a retailer, with an exclusive distribution agreement where the transfer price is determined to maximise joint profit. Thus we may assess the effect of mutual agreement - when will it be profitable, and when socially desirable. In this variant, retailers face as other costs only a constant amount per unit sold though it would be straightforward to experiment with the effect of incorporating economies of scope. Final market competition is in terms of price.

We proceed by setting out the cost structure for the case of free entry into retailing. If retailers specialise by selling only one brand then in addition to the cost of the product the retailers each incur a fixed cost of amount f . Thus with constant unit input prices, at level r_{ih} for retailer h selling brand i , the cost function for a specialised retailer is

$$C_h^S(q_{ih}) = r_{ih}q_{ih} + f$$

where q_{ih} is the quantity of brand i sold by retailer h .

However, when retailers are diversified we assume that the level of fixed costs when selling both brands is $2f(1 - e/2)$ where $e \in [0,1]$ measures the economies of scope, so that $e = 1$ implies full economies of scope (i.e. no difference in fixed costs between selling one or two products) and $e = 0$ implies zero economies of scope (i.e. fixed costs are doubled). Thus the cost function of a diversified retailer is

$$C_h^D(q_{ih}, q_{jh}) = r_{ih}q_{ih} + r_{jh}q_{jh} + 2f(1 - e/2)$$

In this first framework we use quantity as the mode of competition (that is a Cournot-type model) in order to avoid various technical problems .

Rather than dwell on the technicalities of the modelling, we move swiftly to a discussion of the results of the analysis.⁵⁰ The general ethos is that firms may only be expected to engage in vertical linkages if there are incentives (or at least, the absence of a disincentive) to do so.

These need exist only for certain parameter values. Naturally, the fact that firms have incentives to integrate does not imply that social welfare (here, the sum of producer and consumer surplus) is improved thereby. If an action benefits firms at the expense of consumers, social welfare may fall. Similarly, but perhaps less obviously, there may be insufficient incentive for integration, yet socially it would be desirable.

Let us first consider the case where free entry acts so as to determine the number of retailers. Equilibrium in the retailing section of the model is generated by two conditions: marginal revenue for each firm equalling marginal cost, and free entry or average revenue equalling average costs given the regime - the regime consisting of either one or two products being sold by each retailer, and also the intermediate product price set by the manufacturers. Given the structure of the model, it is either in both or in neither manufacturer's interest to engage in exclusive trading.

When retailers sell both products they have an element, albeit limited, of monopoly power, since there are relatively fewer retailers in this regime. As the brands become similar ($\gamma \rightarrow 1$) it is in their interest to raise price to restrict sales somewhat. On the other hand, when manufacturers sell to specialised retailers they are able to raise margins due to the absence of in-store competition and the fewer retailers of each brand. Put another way, the absence of retailer substitution possibilities makes the derived demand for manufacturers' products more inelastic. The correspondingly higher input price is passed onto the final consumer in the form of higher final prices, for all parameter combinations. Nevertheless, when economies of scope are low, the total net costs in the industry may be lower under single-brand retailing, which tends to compensate for the higher final price. Even though manufacturers' margins are higher under specialised retailing, total manufacturers profits may be higher under dual-brand retailing, particularly if e is high since this serves to support a higher number of retailers.

Thus a complex set of effects is at work with manufacturer market power and economies of scope being amongst the most important, the former most relevant to exclusive trading, the latter only available under non-exclusive trading.

Figure 1 - Profit and Welfare Boundaries with Monopolistically Competitive Retailers

[illustration not available electronically]

Some illustrative tradeoffs are presented in Figure 1, where the top diagram shows the profit boundaries between the single-product and dual-product retailer regimes, and the bottom diagram shows the corresponding welfare boundaries. The axes are measures of intrabrand rivalry (β) on the horizontal and interbrand rivalry (γ) on the vertical. For the illustrative fixed cost value ($f = 1/100$), lines are drawn both for manufacturer profitability and for social welfare for various values of economies of scope. Above the respective lines it is privately (socially) desirable to have exclusive dealing as the mode of organisation.

Within this particular framework, when economies of scope in retailing are absent entirely, i.e. $e = 0$, there is no divergence between private and social welfare in choices between regimes, as the boundary line is the (bottom) horizontal axis where $\gamma = 0$. However, the general and main feature of the framework is that the lines above which exclusive trading is socially desirable are much higher than the lines above which it is privately desirable.⁵¹ For example, it may be observed that, at this particular level of f , if $e > 0.7$, then diversified retailing will be socially preferred for virtually all parameter combinations whereas it is preferred by manufacturers for only just over half the space of parameter values. Thus, manufacturers will commonly want to impose exclusive trading where it is not socially desirable.

The intuition for this general result is straightforward and runs along the following lines. There is both a private and social gain in having diversified retailers if economies of scope are extensive, since this increases final output levels. However, there is a private benefit to the manufacturers in having single product retailers, due to the higher margins this allows them. This presents a tradeoff for the manufacturers which does not occur for society as a whole. The impact in reduced margins due to diversified retailing is particularly severe when γ is high, so that in-store competition is intense. Exclusive trading arrangements represent one method by which manufacturers can prevent such competition and outweigh the benefits of economies of scope in their own interests.

At a general level, this conclusion and the underlying intuition persists in a rather different and much more complex model due to Besanko and Perry (1994). Again they have two single-product manufacturers and free-entry into retailing, but they employ a spatial framework in which each customer buys one product. Retailers are differentiated by distance so that in effect the intrabrand rivalry is enhanced under non-exclusive dealing by comparison

with exclusive dealing (where the ‘next-but-one’ retailer is the nearest selling this particular product). Perhaps in consequence, in their model manufacturers are always better off with exclusive dealing. But if economies of scope are substantial, it will often be socially desirable to have non-exclusive trading since an individual retailer’s fixed costs are little higher than with exclusive dealing, so almost as many may exist in equilibrium, meaning diversity does not carry a big penalty in terms of transportation costs.

In sum, in Besanko and Perry’s model there also exists a tendency for manufacturers to impose exclusive trading to a greater extent than is socially desired, and this happens particularly when economies of scope are extensive. Factors representing interbrand and intrabrand rivalry are also relevant - for example that when transportation costs are relatively low (equivalent to our β being high) exclusive trading is more likely to be socially desirable, *ceteris paribus*, in line with Figure 1. The fact that this model which is very different in detail yields broadly similar conclusions adds confidence to the general results.

4.3. A Model Where Retailers Have Substantial Market Power

The second framework investigated embodies coordination at the vertical level rather than imposition of restraints. This model involves two manufacturers and two retailers. Thus by assumption there are substantial barriers to entry into retailing (a marked contrast with the previous framework), and correspondingly manufacturers do not maintain their dominant role in determining the contractual outcome. Rather, the range of possible vertical contractual outcomes is explored within the present framework. To facilitate this, economies of scale and scope at the retail level, which could impact on the number of retailers in some cases, are dropped from consideration.

There is price competition at each level. In the absence of an exclusive trading arrangement, a manufacturer sets a linear transfer price to maximise its profit. Retailers in turn take this price as given in setting their final prices to consumers to maximise their own individual profit. By contrast, if a retailer and a manufacturer sign an exclusive trading contract, it is assumed that the transfer price is determined so as to maximise their joint profit, with that profit being distributed between parties by means of (positive or negative) franchise fees or

similar devices, if necessary. Because final market competition is softened by raising input prices [see e.g. Bonanno and Vickers (1988)] this transfer price involves a non zero markup on the manufacturer's costs, but is treated as given in fixing the final price level.

The private incentive for adopting exclusive trading against unrestricted trading again rests on conflicting sets of factors.

The advantages to be gained from having an exclusive trading contract may include the partial removal of transfer pricing distortions, by using side payments between the two parties to internalise externalities which adversely affect joint profits due to independent successive price setting, as well as limiting direct interbrand and intrabrand competition when retailers specialise in selling different products, thus avoiding head-to-head competition and cannibalising sales. Against these arguments, by signing such an agreement, the retailer necessarily limits its product range, and the manufacturer similarly limits where its product can be distributed, and consequently potential sales may be lost by either party.

Again we will not examine the working of the model in detail, merely the outcomes.⁵² Here there are three possibilities - exclusive trading, partial exclusivity, and non-exclusive trading. Of these, partial exclusivity, where an agreement is signed between one pair involving exclusive distribution (or territory) but not exclusive purchasing, turns out not be an equilibrium. This will not be discussed further. However, it also happens that the precise configurations in parameter space depend upon what may be expected in the event that there is only a partial equilibrium, since we assume a unilateral incentive to reach agreement is required. Again, this complication will not be dwelt upon. For the purposes of the diagrammatic analysis, it will be assumed for most of the analysis that the contract, if there is one, concerns both exclusive purchasing and exclusive distribution.

Figure 2 - Profit and Welfare Boundaries with Successive Oligopoly

[illustration not available electronically]

Private profitability considerations determine whether exclusive trading takes place. But as in the previous analysis, there is a divergence between what is privately and what is socially desirable. And in this case, there are some remarkable features. Figure 2 illustrates, again using inter and intrabrand parameters as the axes of the figure.

Taking private profit first, i.e. the top diagram, there is a small area of little concern in the top right hand corner, where no pure strategy equilibrium exists. That aside, the upper roughly triangular area has exclusive trading as the equilibrium, with the lower part involving non-exclusive distribution. The reasoning goes as follows. Vertical agreements have the benefit to firms of allowing more nearly optimal pricing. Indeed, despite what is sometimes argued, in the present context the only real way to obtain more optimal pricing is to reach an agreement regarding exclusivity. Otherwise, an agreement having been reached, both parties have an individual incentive to distort it using the other product/outlet. But vertical agreements have a cost, that the retailers sell a narrower range. When the products are highly substitutable, the latter issue is less relevant, and when intrabrand competition between outlets is severe, standard vertical separation arguments come into play. When neither of these is true, there are substantial benefits to retailers having the wider range, and manufacturers have little to fear from competition, so exclusivity agreements are unlikely.

The correspondence with what is socially desirable, as indicated by the bottom diagram in Figure 2, is rather remote. Again there is a tradeoff, this time between consumer choice and socially inefficient transfer pricing.

As interbrand and intrabrand rivalry increases, that is as $\gamma, \beta \rightarrow 1$, all prices fall to zero (i.e. marginal costs). Hence the only issue for social welfare is variety and, despite their being small, the benefits of variety lead to the absence of agreement being the best outcome. As $\gamma, \beta \rightarrow 0$, prices are substantially higher without an agreement than with, but the variety is very valuable. However, as γ, β increase from zero, the problem that prices remain high in the absence of an agreement outweighs the loss in variety created by the agreement, under the present parameterisation.

Thus the interesting feature here is that the problems of inappropriate structure go both ways. In the bottom left hand corner, and for a section where both β and γ are medium/large, the social and private incentives coincide. But there are regions (lower left) where it is privately

optimal for there not to be agreements, whereas they are in society's interest and regions (near the top right) where private considerations lead to exclusivity, which is not socially desirable.

In the latter case, the welfare differences between arrangements are small. Nevertheless, in this model it is not that privately there is too great an incentive for exclusivity. Instead, the relationship between private and social incentives is far more subtle, possibly too subtle for straightforward conclusions to be drawn. Again, some perturbations of the framework can be developed [see Dobson and Waterson (1994b), involving quantity competition] which carry similar conclusions, thus lending weight to the predictions of the model.

4.4. Concluding Remarks

The results of the first model indicate that manufacturers are more likely than society generally to want exclusive purchasing obligations imposed on monopolistically competitive retailers. By restricting retailers from selling the competing products of other manufacturers, social welfare is most likely to be reduced when economies of scope in retailing are high and when interbrand and intrabrand rivalry is relatively weak (in the sense that both the manufacturers' products and the retailers' services are regarded by consumers as only moderate substitutes).

In the second case, where limited (i.e. oligopolistic) competition exists at both the manufacturing and retailing levels then the welfare trade-off concerns the benign effect from exclusive trading, which can remove vertical pricing distortions, set against the detrimental effect of dampened competition and restricted consumer choice. Here it is less easy to make clear predictions about the net effect. The model suggests that attempts by firms to dampen competition through exclusivity contracts may be against the public interest when products and services are close substitutes. However, this result may not be robust to changes in the assumptions - e.g. characterising competition by quantity-setting as opposed to price-setting behaviour.

5. Developing Policy Proposals

5.1. *Approaches to Policy*

Two obvious candidate policy models on vertical restraints to follow in the UK are the US Department of Justice (DOJ) *Vertical Restraints Guidelines* (1985) and the EC approach, embodied in Article 85 and a set of subsequent block exemptions. Here is not the place to cover in detail the provisions of either of these; a good discussion of EC law is contained in Whish (1993) and a very useful analysis of the DOJ guidelines, on which we draw later, is provided by Fisher *et al.* (1987).⁵³ Here we simply give enough background to facilitate the discussion which follows.

For most situations under EC law, Article 85 provides the basic framework. Article 85(1) prohibits agreements in fairly broad terms, but many or even most vertical agreements can obtain either block exemption or individual exemption under 85(3). There are block exemptions for exclusive distribution, exclusive purchasing including special provisions for beer and petrol, motor vehicle distribution arrangements, franchise agreements, and intellectual property. These do not give blanket approval, but rather allow the practices subject to certain provisions. Article 86 may also be relevant where one firm is seen as being clearly in a dominant position in the industry and is imposing restraints, e.g. tie-ins or full line forcing, on those it supplies. But in general, the legislation in this area is framed in terms of agreements. Thus (service) franchising, for example is treated as a method of business operation whereby distributors agree to (substantial) restrictions in their activities but where such agreements are considered benign. Yet, it is possible that the restrictions include elements such as tying or full-line forcing which would in other contexts attract opprobrium, because they are treated as having been agreed to.

The DOJ guidelines take a more regimented and more step-by-step approach, leading to clearer rules. But arguably they provide a less useful framework for development in the context of the UK. It is important to note that there is in a sense a ‘step zero’ within the

guidelines where certain key distinctions are drawn before the framework of the test is considered relevant. The first such distinction is *vertical* versus *horizontal*. The second distinguishes between vertical agreements regarding final pricing (i.e. concerted agreements between a supplier and its distributors) and non-price agreements. The former are normally treated as *per se* illegal. Thirdly, however, there is a distinction between unilateral or imposed and joint or concerted practices. Unilateral practices (including pricing impositions) are generally considered legal. There is then a distinction between intrabrand and interbrand actions, with those having no interbrand effect being allowed. Finally, there is a distinction which rules out of consideration other than ‘airtight’ restraints. Needless to say, not all of these distinctions are clear-cut in operation, a factor which undermines their use as ‘bright lines’. Step one of the DOJ guideline’s paper embodies the quantification element - the restraining firms market share must be more than 10%, coverage of the restraint must be greater than 60% and so on. The figures here seem somewhat arbitrary, but the concerns involved are sensible. Step two then involves factors such as the ease of entry.

Some particular features, for reasons which are not really clear theoretically, involve quite different treatment. Tying is treated from the standpoint of dominance, and is quite likely to be found illegal. There is a rather sharp cutoff at a 30% market share, below which the firm will normally be considered ‘safe’. It is obviously somewhat unsatisfactory, when aiming for a framework of analysis, to have elements which appear to ‘bolt on’ rather than fit into the framework. Moreover, the distinction between tying and exclusive purchasing is not a straightforward one - in some cases they may amount economically to very much the same thing. But this is clearly rather unsatisfactory if the framework handles them very differently.

It may be observed that the overall philosophies underlying the EU and the US policies have a substantial number of differences. Both make a distinction between agreements on and imposition of vertical restraints. But in EU policy, agreements are seen as essentially facilitatory and benign, whereas the US guidelines, at least as described in Fisher et al., treat them as evidence of concertation, and as such potentially harmful. Thus both frameworks make use of the concept of agreements, and see most vertical restraints as agreements, but the US framework is critical of them, whilst the EU policy sees them rather positively.

Our analysis of earlier sections enables us to comment on these underlying philosophies in the following terms. First, we would distinguish more specifically agreements in which both parties accept obligations and mutual constraints, from ‘agreements’ where one party essentially imposes its position on the other. Their impacts are substantially at variance. The predictions are more clearly that the latter type is against the public interest than the former, so to treat them as similar is not sensible. Second, the concept of concertation, unless it implies the development of retailer cartels (that is, unless it has a horizontal element) does not seem a very useful distinguishing feature in the case of vertical restraints.

Thus our general view is that neither framework provides a good enough model for adoption as it stands, in the light of current economic analysis. Accordingly, we set out below a suggested approach which draws more closely on the economic analysis developed above.

5.2. Policy - Some Proposals for Developing Investigation Procedures

The methods developed above for analyzing the social welfare implications of vertical restraints lead to a suggested approach to evaluating whether cases are likely to have some public policy relevance. This approach is framed around three key questions dealing with (i) signs of market power at the manufacturer and/or retailer level, (ii) the effects on competition, and (iii) indicators of efficiency. However, before setting this out formally, we outline the relevance of the underlying issues on the basis of market power being present at least at the manufacturer/wholesaler level.

An important distinction arising from the analysis in section 4 concerns whether restraints are essentially imposed (or at least primarily determined) by the manufacturer/wholesaler or the retailer, or alternatively are negotiated arrangements with signs of mutual bargaining, concessions and tailored rights. If the restraint is determined/imposed by the manufacturer then our analysis suggests that it is rather likely that the restraint operates in conditions where it is socially desirable that the restraint should not operate. In contrast, if the restraint is mutually agreed a clear policy response is more difficult to formulate. In this situation, the

two opposing factors of (i) private efficiency gains arising from the agreement, and (ii) the effects from dampened competition, are such that it is less clear that (mutually) profitable vertical restraints will be socially detrimental.

A test which satisfactorily distinguishes between mutually agreed and imposed vertical restraints is clearly a difficult one to formulate since all restraints are to an extent bilaterally agreed and the issue essentially amounts to determining the relative strength of bargaining power for each party. However, a useful indicator to consider is the degree of variation across the agreements in the industry. Evidence of standard firm-wide or industry-wide agreements, taking on very few forms, particularly where one side is subject to negligible restrictions, may suggest imposed restraints. So may the complaints of significant numbers on one side of the bargain. In contrast, variation in the nature and conditions of agreements, where there are tailored rights, signs of concessions and restraints on both parties, may be more indicative of mutually agreed restraints.

Of course, in no case are we arguing for per se illegality on the basis of this test, nor those developed below.

A second factor of key importance is the presence or absence of economies of scope in retailing across the range of relevant products. If economies of scope are extensive, yet exclusive purchasing is enforced, it is much more likely to be socially deleterious than if economies of scope are modest or nonexistent. Extensive economies of scope imply there is little social cost in the retailer adding another firm's line, whereas the benefits may be substantial. At one level the determination of the degree of scope economies is an essentially technical issue, but there are problems. It would not be economic to have two brands of petrol sold simultaneously at the same petrol station, given the tank sizes etc; economies of scope would seem modest. However, if short-term contracts in the industry were common, shopping by retailer between brands/producers might be feasible. Thus it might be argued that solus contracts of lengthy duration are over-restrictive.

This brings us to a third feature which is of considerable importance where it can be

evaluated. When mixed systems exist, with some retailers involved in restraints such as product ties, exclusive purchasing, exclusive territories or similar restraints and some not, then transaction prices for the input can be observed under both frameworks. When there is a large percentage divergence between these transaction prices, with the restrained retailers paying a higher price, there is an implication that consumers are harmed by the agreement.⁵⁴

Often, as a quid pro quo for the restraint, the manufacturer will offer the retailer what amounts to a negative franchise fee (e.g. a free display cabinet, or a relatively low rent on premises). This could be seen as a risk-sharing arrangement to keep the retailer content, or increase retailer welfare, in conditions where the retailer is relatively risk-averse. However, it is important to bear in mind in evaluating such an arrangement that the imposition of exclusive trading itself pushes risk towards the retailer by disallowing the retailer the opportunity to sell another manufacturer's product if demand does not meet expectations. Hence the risk-sharing argument must be carefully qualified, rather than being taken at face value. Furthermore, the negative franchise fee, in representing a payment for the retailer's exclusivity, may result in the manufacturer seeking in compensation to set a higher transfer price. In turn this may (in part) be passed on by the retailers, resulting in the consumer paying a higher retail price (i.e. effectively as a result of a double marginalisation problem).

Fourthly, it will be relevant when evaluating an agreement to attempt some quantification of the degree of interbrand and intrabrand rivalry, say by relationship to cross-elasticities of demand between products and between retailers. If both forms of rivalry are very high, so that one good is a very good substitute for another, then it seems relatively less likely that serious effects on social welfare are created either by the presence or the absence of exclusive dealing arrangements. The arrangements presumably benefit firms if the products are sold through exclusive purchasing, whereas consumers lose little by not being able to choose within the store, in such circumstances. If, because they are sold by diversified retailers, such retailers have some market power, this will be strongly limited when retailers are close substitutes for each other. On the other hand, when consumers have different tastes such that the products and retail services are ('horizontally') differentiated (e.g. by branding), variety in the market becomes socially desirable. Accordingly, attempts to dampen rivalry by using

restraints which serve to limit head-to-head intrabrand or in-store interbrand competition (respectively limiting the alternative sources for consumers purchasing a particular product or restricting the range of goods available at a particular retailer) may act against public interest.

This brings us on to retailer market power, and the relevant retail market. Earlier modelling suggests that retailer power is not necessarily harmful per se. Nevertheless, it is important not to take it as axiomatic that retailer power is always modest.

The extent of the market and effects of arrangements common in it depends to some degree on the type of good under consideration. For low value items purchased regularly, i.e. convenience goods or impulse-purchase goods, the market for the consumer is likely to be highly localised (perhaps within a five minute walk or drive from home or the workplace).⁵⁵ For high value items purchased infrequently, i.e. non-convenience or ‘shopping’ goods, the geographic extent of the market is likely to be somewhat larger, where search costs are more easy to justify with the result that the consumer may view the local market as covering a town or part of a city.⁵⁶

For both convenience and non-convenience goods, exclusive purchasing and exclusive distribution arrangements can be expected to raise consumer search costs when making product/service comparisons. Accordingly, less search will be undertaken - particularly for convenience goods where the search costs relative to the value of the product (or the perceived benefits from searching) are high. The reduced search effort can then allow for higher prices (for the average consumer) as firms exploit the consumer’s lack of market information.

While there exists a general argument that both manufacturers and retailers will wish to limit the extent of competitive rivalry at their respective level, thereby creating a potentially detrimental effect on social welfare, the presence of vertical restraints may of course yield benign effects as a result of efficiency gains, i.e. gains from trade. The extent of these gains would appear to depend on the nature of both the product and the retail service provided to the consumer, though. Table 5 below lists the conditions which appear to offer the strongest

case for efficiency gains against the weakest case.

The strongest case for efficiency gains is based on situations where the retail service provides an input into the perceived quality of the good and/or an important source of reliable information for the consumer on products, about which he/she otherwise has only limited information. However, it may be precisely these cases where manufacturers wish to pay for the exclusive services of established/reputable retailers to foreclose rivals when it is difficult to establish a competitive rival distribution system. Thus the ease by which new entry can be facilitated at the retail stage is important. And, relating back to our earlier discussion, efficiency losses may be expected to result when restraints preclude retailers from stocking other manufacturers' product ranges when there are unexploited economies of scope in retailing.

Table 5 - The Strength of the Efficiency Argument for VRs Across Different Product/Distribution Conditions

<i>Product/Distribution Nature</i>	<i>Strongest Case</i>	<i>Weakest Case</i>
Product complexity	Highly complex or technical	Simple or non-technical
Cost for consumer	Expensive - large part of budget	Inexpensive
Consumer buying habits	One-off purchases	Repeat purchases
Shopping format	Non-convenience outlet	Convenience outlet
Consumers' product information	Limited knowledge	Details/features widely known
Price/quality comparability	Experience or credence goods	Search goods
Perceived product differentiation	Unclear - weak branding	Clear - strong branding
Position in product life cycle	New	Established or mature
Entry barriers in retailing	Low	High
Economies of scope in retailing	Insignificant	Substantial

Drawing on these issues, we propose an approach based on three key questions which may provide a useful checklist to give an initial indication, prior to any full-scale investigation, of whether it is likely that a particular set of vertical restraints would be operating against the public interest. The approach is summarised in Table 6.

The first question relates to the existence of market power at the manufacturer and/or retailer level. If significant power is absent then it is unlikely that vertical restraints will be socially detrimental. However, if one or more firms do have the ability materially to influence prices set or negotiated, or quantities exchanged, or on the viability of traders at the other level, then it may be the case that vertical restraints act against the public interest.

Given the presence of significant market power, the second and third questions involve determining whether the restraint has a socially detrimental effect. This rests on a judgement as to whether competition dampening effects outweigh any efficiency advantages. It would typically entail weighing the loss of product or retail service variety to consumers and any associated reduction in the intensity of competition in the market against the cost-reduction benefits which the parties to the agreement may enjoy. When the former arguments are deemed to outweigh the latter then there is a strong case for believing that the restraint has a detrimental effect on social welfare.

Table 6 - Key Issues for Consideration in an Investigation

<i>Question</i>	<i>Relevant Evidence</i>
<ul style="list-style-type: none"> ● Is there significant horizontal market power at one or both stages of the industry? If not, the issues of vertical restraints are unlikely to be of much importance. (By significant power is meant the ability to have a material effect on prices set or negotiated, on quantities exchanged, or on the viability of traders at the other stage). 	<ul style="list-style-type: none"> ● Substantial mark ups at either or both manufacturer/retailer levels by comparison with products having similar characteristics. ● High profits. ● Stable and substantial market shares. ● High and stable concentration.
<ul style="list-style-type: none"> ● Is the reduction in product/service variety resulting from either reduced head-to-head intrabrand or in-store interbrand competition important to the consumer? If so, it is more likely that a vertical restraint has policy implications. (There is an element of counterfactual here, which may make analysis difficult if industry-wide practice is exclusivity. Often, however, there is inter-firm or inter-regional variation, which can enable comparisons). 	<ul style="list-style-type: none"> ● Moderate or low cross elasticities of demand between products. Ditto between retailers. (With strong substitutability, limited vertical agreements are less likely to be harmful). ● In mixed systems, transfer prices to constrained outlets being significantly above those to unconstrained - either on a between-producer or between-region basis.
<ul style="list-style-type: none"> ● Are there significant indications of efficiency gains associated with restricting the number of dealers or their product range? If the former, then there may be an efficiency justification for exclusive or selective distribution, and if the latter a similar justification for exclusive dealing. 	<ul style="list-style-type: none"> ● Economies of scope: Are they extensive or limited? If extensive, there is little social cost in the retailers adding another line. ● Search costs: Would/do consumers face substantial costs in discovering about the range of products sufficiently to allow informed purchase, in the case where retailers stock strictly limited ranges? ● Type of good: Is the good low value, frequently purchased etc. ? - see Table 5 for details. ● Mutual agreement rather than evidence of imposition (see pp. 52-3).

5.3. Applications of the Checklist Procedure

The following five cases illustrate the applicability of the framework developed above in respect of using the checklist as a filtering device. Of course a filter is only of use in framing a *prima facie* case. It should therefore be over-inclusive compared with the results of a full Monopolies and Mergers Commission investigation. But to be useful it should also exclude some cases which (would) otherwise have been pursued further. We hope these points are illustrated in the vignettes which follow, since they indicate that all but one case, Petrol, should have been taken further than the initial screen. (Of course we do not claim that all our interpretations of the data are uncontroversial.)

The five markets under consideration have all been recently investigated by the Monopolies and Mergers Commission, thus in each case providing us with a detailed source of information through the associated published report. The markets are beer (1989), petrol (1990), carbonated drinks (1991), new motor cars (1992), and ice cream (1994). All five markets involved extensive vertical linkages and shared the common feature of exclusivity arrangements in one form or another. For instance, exclusive dealing contracts between manufacturer/wholesalers and retailers were present in all five cases. Exclusivity also arose in the beer and petrol cases through firms being vertically integrated. In addition, selective and exclusive distribution was commonly adopted in the car industry, with selected dealers provided with territorial distribution rights.

While all five markets are highly concentrated, there are noticeable differences between each case in the apparent ability of leading firms, at the time of the MMC investigation, to exploit market power. Our analysis also indicates that the effects of exclusivity arrangements vary considerably between the five cases, highlighting the importance of the context within which vertical restraints are set. Our comments on each case are made in turn and the conclusions subsequently summarised in Table 7 below.

Case 1 - Beer

Total sales of beer in the UK amounted to over £9 billion in 1987. Although off-licenses and supermarkets had been increasing their share of beer sales, at that time 85% of beer purchases were through public houses, clubs and other on-licensed premises, with three-quarters of consumption being draught beer.

A key feature of the UK beer industry was the extent of vertical integration and control. Brewing companies tended to undertake brewing, wholesaling and retailing of beer. In retailing beer, the brewing companies owned a substantial proportion of the public houses - estimated to be around 75% of the approximately 60,000 public houses in Britain. Of these brewer-owned public houses, 29% were directly managed (with the publican and staff employees of the brewing company) and 71% were tenanted (with the publican self-employed but paying the brewer a rent for the premises). In both categories, the brewer specified what beers may be sold in the public house, and where they must be bought. In the case of managed public houses, the brewer also determined retail prices.

Of the remaining 25% of public houses not owned by brewers, the MMC estimated that half were tied to brewers by loans (at interest rates below the market level) which secured exclusivity for the brewer. Overall, about two-thirds of all beer sold by brewers, including that supplied for consumption at home, was sold to premises that they either owned or tied by a loan.

Six nationally operating brewers (Allied-Lyons, Bass, Courage, Scottish & Newcastle, Grand Metropolitan, and Whitbread) accounted for 75% of UK beer production, 74% of the brewer-owned estate, and 86% of loan ties. In addition, there were eleven regional brewers which together accounted for 11% of beer production, 15% of the brewer-owned estate, and 8% of loan ties. The remainder of the market was accounted for by three brewers without tied estate which together supplied 8% of beer production), 41 local brewers (with 6% of the UK beer production) and 160 micro breweries (collectively representing under 1% of beer production).

By 1986 net margins for the industry averaged 12%, and profits had increased significantly in real terms during the three preceding years. In addition, real prices increases in both wholesale and retail prices had been observed by the MMC. Evidence was also presented on the relatively large spread of prices (of the order of 15% or more) for particular types of beer across the UK. There were also significant differences in wholesale prices between outlets with tenants paying the highest prices. Furthermore, the price of lager was noted as in particular being substantially higher than the costs incurred. Accordingly, the MMC concluded that the UK market was not functioning competitively and in particular high and increasing prices were largely attributable to brewers exploiting a complex monopoly situation.

The number of beer brands available in the UK market is large. The six major brewers alone produce 444 brands. The distinctiveness and consumer preference for particular beers, and the consumer's interest in trying different brands, means that the exclusivity arrangements

which remove direct in-store manufacturer competition and thus restrict choice may be to the detriment of the consumer. Moreover, exclusivity may have a significant dampening effect on competition between manufacturers as consumers in the market may in general be resistant to searching different public houses to find a preferred or different beer given that this product only forms a part of the leisure activity associated with visiting a public house. In particular, if a firm wishes to increase significantly its market share, undercutting the prices of rivals may not be especially effective since consumers have restricted knowledge of the prices on offer (since public houses do not generally publicise their prices) and the price and make of beer is only one of several considerations for the consumer in determining the choice of public house to visit.⁵⁷

In addition, the licensing and planning restrictions applying in the UK ensure that significant entry into retailing through developing new public houses is impractical - in this regard, the only realistic form of entry and capture of market share is via acquisition. These institutional restrictions when set in the context of the exclusivity arrangements covering a major part of the industry may provide a substantial barrier to entry as duplication of existing retail distribution systems is infeasible and access is denied to an established rival's system. Consequently, the exclusivity arrangements in ensuring control over access to a tied estate mean that market shares (in the absence of mergers or acquisitions) may remain relatively stable over time.

However, even though the exclusivity arrangements would appear to significantly weaken competition in the market, the system of tied estates may offer some efficiency benefits, such as encouraging investment in amenities. Nevertheless, the efficiency factors appear to be rather modest in light of the nature of beer which is essentially a non-technical, inexpensive, repeat purchase, branded product with search good characteristics and sold through a convenience outlet. Moreover, there would seem to be substantial economies in scope in retailing other manufacturers' products (e.g. adding another line of beer), not least because the seating areas, etc. are a common facility, and serving facilities are a small proportion of the total area in a public house.

Overall, it would appear that there is a strong case for saying that the exclusivity arrangements in place at the time of the investigation, as also concluded by the MMC, did serve against the public interest.

However, it is also clear that for a decrease in vertical integration to be beneficial, competition at the brewing, wholesaling and retailing levels would need to be stimulated. Further consolidation at each level may only serve to dampen competition and reinforce market power. Accordingly, the manner in which (enforced) divestments take place may be crucial. Pubs-for-breweries swaps and other alliances between the national brewers involving exclusive dealing agreements, along with regional and local brewers selling their brewing or estate interests to the nationals, may simply lead to higher levels of concentration in brewing and retailing and result in an even less competitive market.

Case 2 - Petrol

The total value of retail petrol sales was £11.5 billion in 1988. Vertical control, either by ownership or contractual arrangements, is an important feature of this market with the principal firms involved in refining, wholesaling and retailing petrol.

The leading five firms, Esso, BP, Shell, Texaco and Mobil, collectively controlled a substantial part of this market, accounting for around 66% of sales from both refining and wholesaling activities. Just fourteen wholesalers accounted for 95% of the market, with the remainder shared by around fifty-five other firms. This high level of concentration had existed for some time, and market shares were found to be fairly stable over the preceding five years.

At the end of 1988 there were 19,182 retail outlets in the UK selling 30 billion litres of petrol. Retail outlets fall into two main categories: wholesaler owned or independent. Wholesaler owned outlets tend to be larger on average than independent outlets, representing 33% of outlets but 53% of sales. Of the wholesaler owned outlets, 23% were tenanted, 49% were licensed and 26% were under direct management or commission agents.⁵⁸ The independent outlets were generally tied to a particular wholesaler for a minimum of five years under a solus tie and thus in effect the whole market is covered by exclusive dealing.

Average net margins for the five majors over the period 1983-1988 were 0.0% in refining, 2.8% in wholesaling and 1.0% in managed retailing. Profits from

refining, and to a slightly lesser extent from wholesaling, fluctuated considerably over this period, but in general the MMC took the view that profits were not substantial and that the market was competitive.

Even with producers' attempts to build loyalty through media advertising and coupon schemes, cross price elasticities appear to be high, with a small spread of retail petrol prices between different brands. The essentially identical nature of the products and the large number of petrol stations which are usually within easy reach for the consumer and the requirement to clearly display pump prices to help the motorist be aware of relative prices, result in strong interbrand competition with only a small spread of prices observed in the market.

Moreover, the efficiency argument for selling only one firm's petrol is strong, not least because of the lack of economies of scope in retailing since adding another brand of petrol would more or less require complete duplication of facilities. This would not require long term contracts. However, the presence of long term contracts may encourage investment in petrol station facilities by both wholesalers and retailers.

Given these efficiency factors, the intense interbrand rivalry, and the general competitive functioning of the market, our analysis would agree with the MMC that the vertical arrangements in the industry do not appear to be against the public interest.

Case 3 - Carbonated Drinks

At manufacturers' prices, the market for carbonated drinks in the UK was worth over £1,300 million in 1989. The largest supplier, Coca-Cola & Schweppes Beverages Ltd (CCSB), supplied about 43% by value of the market. The second largest supplier, Britvic Soft Drinks Ltd (Britvic), controlled 22% of the market. Of the other 100 or so manufacturers only two firms, SmithKline Beecham plc and AG Barr plc, possessed more than a 5% market share.

Both CCSB and Britvic appear to be able to exercise a good degree of market power. Profits for these two leading producers had risen over the period 1987-1989, with net margins for both bottlers around the 6-8% level. Moreover, margins for the principal brand owner franchisers tended to be even higher and the MMC estimated that margins for the whole chain of production were of the order of approximately 15% for both firms.

In contrast to the highly concentrated supply side, the retail trade is relatively unconcentrated, though leading supermarket chains feature in the take-home market and the large brewers (controlling large public house estates) feature in the leisure market. Both these may be able to negotiate favourable terms.

A wide range of products was found to be generally available in the take-home trade. However, the number of suppliers in the leisure trade was much more limited, with CCSB and Britvic accounting for more than 90% of sales. This highly concentrated market segment represented about 25% by value of the whole market and much of the MMC's concern focused on the market practices in this segment as both of the leading firms entered into a number of exclusivity arrangements in the leisure trade. As well as the brewery trade, to which for example Britvic is linked by ownership, exclusive dealing arrangements were negotiated with hotel, restaurant and

motorway service chains. The arrangements varied in terms of duration and conditions such as on price scales and lump sum payments to the retailer. Collectively, sales under such agreements accounted for about 30% by volume of CCSB's sales to the leisure trade and almost 15% of Britvic's.

With respect to consumer purchases in the leisure trade, the bundled nature of the leisure experience (for which a carbonated drink may form only a small part of the package for the consumer) means that relative search costs of visiting different retail establishments are high and consequently intrabrand and between-outlets interbrand competition may be quite weak. In addition, the attempts by manufacturers to increase brand awareness and distinguish their products from rivals', principally by using high levels of advertising, means that in-store product variety is likely to be important to consumers as a whole. Accordingly, it may be argued that exclusive dealing arrangements restrict choice which appears *prima facie* detrimental to the consumer.

Furthermore, as with beer, the nature of carbonated drinks and their distribution mean that, apart from some administrative cost savings, the efficiency arguments for such exclusivity restraints are generally weak. Indeed, for the ten categories in Table 5, it would appear that the circumstances correspond to nearly all of the weakest cases (with the possible exception being low barriers into retailing except for large scale entry).

In line with the MMC's conclusions, we would therefore agree that, given the limited scope for efficiency benefits, the exclusivity arrangements in the leisure trade, notably by restricting consumer choice and dampening competition, appear to serve against the public interest.

Case 4 - New Motor Cars

In 1990 two million new cars were sold in the UK, for £19 billion. Three motor car producers controlled 55% of this market, namely Ford with 25% of the market, Vauxhall with 16% and Rover with 14%. In all, sixteen suppliers operated with more than a 1% share. The ranking of companies was relatively stable over the period 1986-1990, though market shares did fluctuate, particularly with regard to the success or otherwise of the introduction of new models into the market.

As in other Western countries, the major suppliers all use a system of selective and exclusive distribution, primarily through franchised operations. In this system, a number of selected dealers are used to sell the supplier's range of cars. Dealers are allocated territories in which they are given prime responsibility for both selling and servicing the supplier's cars. At the time of the MMC report, as part of their agreement it was common for dealers to undertake not to handle competing cars within a designated territory and even sometimes outside of the territory. Moreover, dealers were usually strictly limited in the number of franchised territories they could hold, with the restrictions being most severe for the strongest brands.

Given the level of imported cars on the UK market, the analysis of the profitability for suppliers is dependent on the means by which transfer prices are determined. The MMC estimated that net margins were on average slightly over 3% for suppliers. There was however considerable variation across companies and variation for individual companies over time. For dealers, net margins averaged around 2%. The profitability for both suppliers and dealers were considerably higher in respect of car parts than for new cars. Overall, the MMC concluded that profits in this market do not appear unduly large.

While exclusive dealing removes direct interbrand comparisons for different manufacturers' models, the high cost of the car in respect to the consumer's other

expenditures means that relative search costs are low and that the consumer may consequently be willing, if necessary, to visit a large number of showrooms to make such comparisons prior to a purchase. Furthermore, consumers may seek to shop around for the best deal on a particular make of car by contacting dealers in different designated territories. Accordingly, in the absence of resale price maintenance, intrabrand competition may still be reasonably high even when the territories are fairly large. Thus, although the consumer is inconvenienced by having to incur such search costs, choice in the market is not especially restricted.

Furthermore, the nature of the product being a technical, expensive, one-off purchase sold through a non-convenience outlet means that there are grounds for believing that efficiency benefits may result from the exclusive franchising system. However, it is also the case that the strong branding, established nature of the products, and the barriers to entry into retailing (due to manufacturers' refusal to supply) provide counter arguments. Moreover, there would appear to be significant economies of scope in retailing different makes, though this is moderated if a full after-sales service on each make is required to be provided.

Given these factors it is not clear that the franchise system, which supports (site based) exclusive dealing and localised exclusive distribution, overall serves for or against the public interest. On the positive side, the system may encourage dealer investment and efficiency gains from relatively large size of individual operations. On the other hand, with foreclosed entry to new dealers, intrabrand competition, and to a lesser extent interbrand competition, may be dulled, particularly where dealers have little buying power and are required to operate on low margins. Accordingly, this is a case which would deserve more detailed investigation.

Case 5 - Ice Cream

By 1993, retail sales of wrapped impulse ice creams in the UK were estimated to be in excess of £250 million. Although there are around 1000 producers of ice cream in the UK, the market for impulse ice cream is highly concentrated, with the collective market share of the three leading producers for 1993 estimated to be 92%. One firm, Birds Eye Wall's Ltd (BEW), accounted for two-thirds of sales, with Nestlé UK Ltd (formerly Lyons Maid) and Mars UK Ltd jointly accounting for another quarter of sales. In contrast, the retail market is unconcentrated with some 90,000 outlets, mostly CTNs and other independent small shops, along with petrol stations and some supermarket chains, selling these products.

Mars entered the market in 1989 and rapidly increased its share to around 14%, primarily at the expense of Lyons Maid which, faced with financial problems affecting its ability to meet demand, saw its share fall from 23% to around 11%. The market share for BEW, although initially dipping, by 1993 was the same, at 67%, as it was before the entry of Mars.

Both BEW and Nestlé supply free on loan (FOL) freezer cabinets on terms which prevent the retailer from using the cabinet to stock ice cream from other suppliers ('freezer exclusivity'). Mars supplies FOL cabinets on condition that the retailer stocks its entire product range (which may result in freezer exclusivity when the cabinet is small). The effect of such contracts in this sector may amount to exclusive dealing if a lack of available retail floor space precludes using more than one cabinet. Approximately three quarters of retailers use FOL cabinets, with the majority of these users having only one manufacturer's freezer. There is conflicting survey evidence cited in the report, but it appears that around one half of all outlets only sold one manufacturer's products.

The profitability of BEW for impulse ice cream products fluctuated over the period 1988-1993, with return on sales ranging from 0.8% to 9.1%, and averaging 5.7%. During this period, as its market share tumbled, Lyons Maid made losses, except for a small profit in 1990. Similarly, for Mars, losses had been incurred in all years since breaking into the market in 1989.

There is some evidence that retail prices rose over the period studied, though this might be (partly) attributable to product improvements (e.g. paras. 3.84-3.87). Unfortunately, there is no analysis in the report on retail margins and no publicly available information on wholesale prices except to comment on the bonus schemes (non-linear pricing) operated by manufacturers and to suggest that the higher prices paid by contracted retailers are offset by the cost-savings from not renting or purchasing freezer cabinets.

Brand promotion is intense. The advertising:sales ratio is about 7% for ice cream, but for wrapped impulse products the figure is substantially higher, e.g. 16.6% for BEW and 23.8% for Mars in 1992. With increased market segmentation and branding for distinct consumer categories, attempts to differentiate (rival) products have become an increasing feature since the entry of Mars.

Overall, even though profits at the time of the report had not been excessive as the market had been experiencing major changes with diversified new entry and acquisitions by large multinationals (including Mars, Nestlé, Grand Metropolitan PLC and Schöller), the very high market concentration does give rise to concern that the intensity of competition may subside as market shares stabilise. Barriers to (large-scale) entry are substantial and this also points to long-term market stabilization. All major new entrants have sustained large losses as they have sought to gain a viable position. Freezer exclusivity is clearly important in this respect, as consumer demand for new products has to be sufficient to warrant the retailer taking on an additional freezer cabinet or switching suppliers. This accounts for the extremely high levels of promotional activity in the market as the firms seek to differentiate their products and stimulate consumer demand.

With exclusive dealing widespread, for which freezer exclusivity may be largely responsible (along with full-line forcing and non-linear wholesale pricing), it would appear that consumer choice is adversely affected. Product branding and promotion has ensured that consumers may have distinct product preferences and thus absence of in-store competition may be undesirable from the consumer's perspective. This would be less of a problem if relative consumer search costs were not so high. However, the nature of the purchase is based on impulse and consumers would naturally be reluctant to try too many stores to find their preferred product. In other words, the nature of demand also means that intrabrand and between-stores interbrand competition is likely to be weak in this market. Accordingly, apart from acting as a general barrier to entry and restricting consumer choice, freezer exclusivity may be an effective instrument in dampening interbrand competition. Moreover, the simple, established, inexpensive, repeat purchase, widely promoted, search good nature of the product means that the efficiency arguments for the vertical restraint are weak. In addition, the freezers themselves are a commodity product rather than being special.

For these reasons, along with the obvious economies of scope in using the freezer to stock another manufacturer's products, our analysis would suggest a strong case for investigation of this market on the grounds of detriment to the public interest.

Table 7 - The Checklist for Five Markets Recently Investigated by the MMC

Case	Beer (1989)	Petrol (1990)	Carb. Drinks (1991)	Cars (1992)	Ice Cream (1994)
Mark ups at Mfr. Level	high & increasing	moderate	high & increasing	moderate	?
Mark ups at Retail Level	moderate	low	increasing	moderate	?
Mfr. Profit Levels	high & increasing	fluctuating	high	fluctuating	mixed
Leading Market Shares	high & stable	high & stable	very high & stable	high but do fluctuate	changing
Concentration at Mfr. Level	high	high	very high	high	very high
Interbrand Rivalry	moderate	high	moderate	moderate	moderate
Intrabrand Rivalry	low	high	low	high	low
Transfer Price Differences	yes	yes	?	N/A	possibly
Economies of Scope	high	very low	high	moderate	high
Consumer Search Costs	high	low	high	low	high
Other Efficiency Arguments	weak	moderate/weak	weak	moderate	weak
Terms mainly determined by	manufacturer	manufacturer	manufacturer & retailer	manufacturer (& retailer)	manufacturer
Potential Welfare Effect	Detrimental	Not Detrimental	Detrimental	Ambiguous	Detrimental

5.4. Remedies

Assuming vertical restraints of an anticompetitive nature have been identified, the question of remedies naturally arises. These are relevant to our analysis for one particular reason. It is common for a discussion of alternative arrangements to be entered into if detriments to the public interest are identified. But some alternatives proposed may themselves incorporate vertical restraints, perhaps of a different form. Thus it is important to use a framework such as that outlined here also to evaluate proposed alternatives. As is clear from the analysis above, it is not necessarily the case that weaker links are socially more desirable - vertical integration involves more mutual agreement than exclusive dealing, but quite likely lower prices, for example. Hence the case for careful evaluation of proposed remedies.

NOTES

1. The MMC report *Contact Lens Solutions* (1993a) identifies scale monopoly situations at both the manufacturing and retailing levels and concludes that pricing policy by the dominant firm at each level (respectively, Allergan Ltd and Boots the Chemists Ltd and its associate company Boots Opticians Ltd) is against the public interest. However, no specific undertakings were recommended for the firms, rather the key problem in the market was identified with the restrictive nature of the licensing system operated by the Medicines Control Agency (MCA). The MMC's chief recommendation was that the MCA should relax its rules restricting retail sales to opticians and pharmacies, and suppliers be allowed to vary their product licences to enable them to supply other retailers such as drugstores and supermarkets.

Behaviour considered to be detrimental to the public interest was also identified in the MMC report *The Supply of Matches and Disposable Cigarette Lighters* (1992c). However, in this case the report was almost solely concerned with the behaviour of a single company: Bryant and May Ltd. Here, the MMC perceived that (with one dissenting voice) this firm's imposition of resale conditions relating to discounts, exclusivity on sales, minimum stocking levels and promotional activities were against the public interest and recommended that the firm be required to make undertakings that no arrangements of this type should be used in the future. The MMC also recommended that, given the absence of significant competition in the sale of matches, the prices at which the firm charged its customers should be controlled, initially for two years with a review to follow.

2. This view has been particularly influential in the US, where as Comanor (1990, p.70) observes, from 1981 to the end of the decade, the DOJ brought no new cases that challenged vertical restraints, and the FTC had issued only four complaints. Furthermore, the clear view taken in the *Vertical Restraints Guidelines* published by the DOJ in 1985 is that restraints generally promote economic efficiency.

3. For alternative classifications see Katz (1989) and Kay (1990).

4. Detailed accounts which follow this approach are provided by Katz (1989) and Rey and Tirole (1986a). In addition, see Tirole (1988; 1990) and Lane and Mayer (1992, Appendix 1). A more general approach, covering legal as well as economic aspects, is taken in a number of other recent surveys including Scherer and Ross (1990), Waterson (1993), Martin (1994), and OECD (1994). The present report extends this literature by taking into account the most recent theoretical contributions, focusing on the private and social effects of restraints.

5. This argument is commonly associated with Telser but also appears in Bowman (1955), Bork (1966) and Yamey (1954).

6. Winter (1993) proposes a more general way to explain these restraints in terms of the manufacturer seeking to ensure that retailers use an optimal mix of price and service levels. In his framework, the incentive for vertical restraints can follow from three features of retail markets. First, retailers' services can reduce the time costs of obtaining a product (e.g. through having informed staff, well-organised inventory, or a convenient store layout). Second, retailers are differentiated through their location since consumers incur search/travel costs. Third, consumers vary in their opportunity costs of time. Each (unrestrained) retailer then sets its price and service level to attract consumers both into the market and away from its rivals. However, the joint profit-maximizing mix of these variables relates only to the first of these objectives being satisfied. Retailers distort the mix by relying too heavily on price competition, at the expense of service competition, in trying to induce consumers with low time costs to switch away from rivals. Territorial divisions or the imposition of contracts specifying price/service levels prevent this distortion from arising.

7. In addition, see Mathewson and Winter (1986).

8. In both cases the retailer is obliged to charge a price so low that its mark up is eliminated. An equivalent outcome could be obtained by the manufacturer setting a retail price ceiling (i.e. maximum RPM), but this appears to be less common than quantity forcing in practice. This may be due to the need with price ceilings to monitor constantly each dealer (and thereby incur costs) to check that they do not exceed the declared maximum level compared with quantity forcing which merely requires that each retailer to take at least a certain amount of the

product. Monitoring is likely to be less of a problem in using price floors (i.e. minimum RPM) as these are more easily policed since individual retailers have an incentive to report breaches to the manufacturer whereas they have no such incentive with price ceilings.

9. RPM prevents price competition directly, and thus encourages retailers to compete through their retail service provision. Exclusive territories can serve the same purpose by affording each retailer a local monopoly so that retailers are unable to use price as a means of taking custom away from each other and are left to attract local consumers through the desired level of retail service.

10. Though, when retailers are differentiated, the retail price reacts more to demand shocks and less to cost shocks as the competition weakens (i.e. becomes closer to the exclusive territory arrangement).

11. A number of other frameworks consider vertical restraints in the presence of market uncertainty - for example, see Gal-Or (1991a; 1991b) and Waterson (1990).

12. The imposition of RPM is in almost all cases illegal in the UK through the Resale Prices Act 1976 (with current exceptions restricted to certain 'merit' goods like books and medical products where RPM may prove socially useful in stimulating demand by ensuring that there is a wide variety of such products and wide availability), and through Article 85(1) concerning cross-border trades in the EU. Similarly, in the US, RPM has been *per se* illegal since 1975 (when Congress repealed the Miller-Tydings Act and the McGuire Act). Nevertheless, the US position appears to be softening. The Department of Justice, in adhering to efficiency explanations for the practice, argued in its amicus brief in the *Spray-Rite v. Monsanto* (1984) case that RPM was unsuitable for *per se* treatment. Furthermore, the Supreme Court's ruling in *Business Electronics v. Sharp Electronics* (1988), that refusal to supply to discount stores is not necessarily an antitrust violation, tacitly allows for products to be price maintained.

13. Nevertheless, there may be practical and political reasons, reflecting the difficulty of measuring total surplus and concerns about equity issues (i.e. income and wealth distribution), why competition policy should be judged in terms of the maximisation of consumer surplus. The stance in the EU framework clearly gives a good deal of weight to the interests of consumers where 'equity demands that the Commission's competition policy takes account of the legitimate interests of workers, users and consumers' and '[t]hese persons should be allowed a fair share of the benefits derived by firms from agreements that restrict competition between themselves' (EC Commission, 1980, p.11).

14. Firstly, with price competition, uncertainty affects neither the wholesale price nor the expected retail price, because the retailers are perfectly insured. However, under exclusive territories the retailers bear some risk and so the manufacturer sets the wholesale price greater than its marginal cost, which is then partially passed into the final retail price with the result that the expected (i.e. average) retail price is higher in this case. Secondly, as the competitive retail price reacts fully to cost disturbances and not at all the demand disturbances, consumption reacts fully to both types of uncertainty. In contrast, under exclusive territories, monopoly pricing implies a partial adjustment of the retail price and, thus, only a partial adjustment of consumption to both types of uncertainty.

15. The total benefits to consumers equal the areas under their demand or average revenue curves.

16. A similar argument can be made with regard to location effects, where by raising retail prices through RPM the manufacturer induces more retailers to enter the market with the result that previously unserved demand will be supplied. Again some people are better off, i.e. those who were previously poorly served, but others, already well served, are worse off, and it is not clear that the manufacturer's move benefits overall welfare.

17. An exception is where destructive competition among producers encourages sub-optimal levels of investment, adversely affecting welfare in the long run. For example, the intense competition, and therefore prospects of low returns, may result in insufficient expenditure on research and development [see OECD (1994, pp. 53-54)].

18. Besanko and Perry (1993) also find that for intermediate levels of the interbrand externality mixed equilibria with asymmetric outcomes occur where some, but not all, manufacturers adopt exclusive dealing even though the firms are symmetric. In terms of sequencing moves this is suggestive of a strategic first-mover advantage,

where a firm's decision to use exclusive dealing pressures its rivals to choose non-exclusive dealing to avoid intense competition.

19. In both examples, the incumbent manufacturer may be required to compensate the retailers for their lost trade by a share of the extra profits generated through successful entry deterrence.

20. Mathewson and Winter (1987) criticise Comanor and Frech's (1985) paper for its emphasis on the effects on entrants' costs, rather than social welfare, in assessing whether exclusive dealing is anti-competitive. Schwartz (1987) raises further objections, in particular with regard to the incentive of the low cost retailers to enter into exclusive dealing contract. To encourage retailers to participate and maintain exclusive dealing arrangements the manufacturer needs to ensure that no retailer ever has an incentive to defect and be supplied by an entrant. Credible punishments for defection are required to ensure foreclosure, but these are not specified by Comanor and Frech. The threat of reducing wholesale price to rival retailers, for example, may not be credible since this action could result in lower profits for the manufacturer.

21. Thus, in the spirit of contestable markets theory [Baumol *et al.* (1982)], they claim that 'potential competition replaces actual competition as the disciplining force in the market'(1987, p.1057). The conclusion, as Lane and Mayer (1992, p.29) note, depends on the assumption that the production (and distribution) sectors are contestable - i.e. there are no sunk costs involved in attracting retailers. If sunk costs are present, e.g. through time, effort and expenditure in setting up a new network, then competition is blunted to the advantage of an incumbent which may be able to deter entry while still earning high profits.

22. A different form of strategic foreclosure is considered by Whinston (1987). In his model, tying (i.e. product bundling), in making the incumbent's behaviour more aggressive in its market, acts as a device to 'leverage' market power from one market to another.

23. The problem may not be so much that the manufacturer will not desire to restrict entry, but that the cost of inducing a retailer to sign an exclusive dealing agreement may not make such a restraint profitable. Aghion and Bolton (1987) consider this problem in terms of an incumbent manufacturer negotiating a long-term requirements contract with a dealer which specifies the penalty to be levied on the dealer for breach of contract, i.e. if it switches to a new manufacturer. They show that it is rational for the dealer to sign such an agreement with the penalty set so that an efficient entrant would find it profitable to offer the dealer a price low enough for the dealer to find it profitable to breach the contract and switch suppliers. In effect, precommitment through the contract means that an entrant is required to pay a fee on entering the market, this 'fee' is then split between the incumbent manufacturer and the dealer, to their mutual benefit, as part of their negotiated agreement.

24. An extended discussion with a range of formal models examining a variety of aspects on common agency and exclusive dealing is presented by Bernheim and Whinston (1992). In a different context, Hart and Tirole (1990, Appendix C) contrast the outcomes from manufacturers using exclusive dealing contracts to vertically integrating with dealers in a contractual-rights framework.

25. In a further twist, Gabrielsen and Sorgard (1994) show that this conclusion hinges on the assumption that there is no intra-brand competition in retailing. When the retailer earns zero profit in exclusive dealing, it is individually rational for each manufacturer to offer his rival's retailer an infinitesimally small profit for becoming an exclusive dealer for him and thereby becoming a monopolist himself. To prevent this outcome, each manufacturer allows his own retailer to earn sufficient profit so that it is not profitable for his rival to hire both retailers. The result is that the manufacturers earn more profit with common agency.

26. Thus the firms may prefer vertical separation, with contract terms granting retailer exclusive territories, over vertical integration. This result has also been established, independently, by Bonanno and Vickers (1988). Both models show that vertical separation with restraints, while offering producers higher profits, results in higher prices and reduced welfare. In addition, see Gal-Or (1991b) which examines this issue in the context of market uncertainty.

27. This view carries over to the definitions provided by a number of commentators, where restraints are generally regarded as impositions by the manufacturer on the retailer, rather by mutual consent to their joint benefit - see, for example, Hay (1985, p.39), Kay (1990, p.551) and Scherer and Ross (1990, p.541).

28. As Ornstein (1985) argues, retail cartels are generally unlikely to be successful given the large number of (actual and potential) rival retailers to control and the incentive manufacturers will have to disrupt a cartel which reduces their profits. Indeed, evidence for restraints like RPM resulting from organized dealer pressure is mixed. Yamey (1954; 1966), Bowman (1955), Pickering (1966) and Sharp (1985) claim that this explanation accounts for a number of notable cases (typically where an active retail trade association is present). However, Overstreet (1983), Ornstein (1985), and Ippolito (1988) suggest that the cartel argument explains only a small minority of RPM cases in the US. Nevertheless, it is clear retailers have been traditionally very active in supporting RPM, e.g. in promoting fair trade laws in the US [for example, see Martin (1994)].

29. In this case RPM will not be used by all firms, i.e. coverage is not universal. Any retailer which chooses a price maintained product ties its hands regardless of opponents' choice of prices. Then, for example, in a downstream duopoly, if both retailers choose RPM, neither can respond to the other's commitment, ruling out a strategic effect. If, though, only one firm chooses RPM, the other firm retains flexibility in pricing, and the latter can then be encouraged to raise its price knowing that the former firm is committed to a high price, which allows both firms to increase their profits.

30. Dobson and Waterson (1994b) also show that with firms adopting quantity competition then mutually agreed restraints can tie in with societal concerns. In contrast to Chang's analysis, agreements are considered in the absence of transfers between manufacturers and retailers. The model shows that individual reluctance to agree to specialisation (of supplying or retailing), when a rival does not have an incentive to do likewise, means that exclusivity arrangements only tend to arise when the market would naturally have specialised retailers and/or suppliers (e.g. low economies of scope in retailing, or a high degree of intra- and inter-brand rivalry). As a result, when they do arise, mutually agreed (rather than imposed) restraints involving exclusivity do not in general terms represent a serious departure from the socially preferred market trading arrangements.

31. For example, Boots, on acquiring Ward White, operated as Boots the Chemist (selling everything from beauty/health care to electrical items), Boots the Opticians, Halfords (bicycles and car accessories), Do-It-All (as a joint venture with W H Smith in the DIY market), Fads (decorating materials), and Children's World. As another example of a broad-based retailing conglomerate, Storehouse controls British Home Stores (general clothing), Mothercare, and Richards (women's garments). A further common phenomenon is 'store proliferation' within the same broad market. This is particularly noticeable in the clothing market, where, for example, the Burton Group operates as many as eleven different specialist chain-stores, each seeking a separate identity to appeal to a different segment of the market - see Totterdill (1990).

32. See Dawson (1993) for a detailed discussion of the internationalisation of retailing.

33. The importance of franchising in this list is no accident. Franchising may allow for the retail concept to be spread rapidly without the parent company having to undertake substantial capital outlays.

34. Shaw *et al.* (1989) and Tordjman (1994) chart the structural changes in food retailing across Europe, highlighting the differences between countries. The sharp rise in UK concentration has been matched in France and Germany, though not in southern European countries where concentration remains fairly low.

35. While the US has seen rises in concentration in food retailing throughout the last decade, this has proceeded at a much slower pace than in the UK, and the returns to capital employed (ROCE) for the large US retailers are generally lower than for their UK counterparts. As Wrigley (1992) observes, the contrasting nature of the antitrust regulatory environments in the UK and US may have been an important factor. In the UK, in line with the MMC report *Discounts to Retailers* (1981) and the subsequent OFT report *Competition and Retailing* (1985), competition authorities took the view that greater concentration in retailing may offer benefits through retailers' ability to extract discounts from manufacturers which would then be passed onto the consumer in the form of lower prices - i.e. benefits along the lines of Galbraith's (1952) countervailing power hypothesis. This signalled a green light to the major retailers who set about implementing an aggressive expansion policy through hypermarket

store openings as well as greater consolidation through a series of mergers and acquisitions. In contrast, the US position, though showing signs of softening slightly, has remained more hostile towards retailer power, taking the view that the discounts obtained by large retailers, which under the Robinson-Patman Act of 1936 represent an anti-competitive form of price discrimination, can be used for predatory pricing against smaller rivals.

36. Dawson and Shaw (1990) provide evidence that the shift in power in favour of retailers covers an increasing proportion of sectors both in the UK and the US, even though retailing concentration levels in the US have not risen greatly over the last decade.

37. For example, the greatest challenge to the stranglehold on the household detergents market by Procter and Gamble and Unilever (which have a combined market share of more than 80%) has not come from other manufacturers producing nationally advertised brands, rather the threat has come from retailers promoting in-store their own-label products. Previously, nationally marketed brands could command a premium over own-label products as these were perceived to be of inferior quality. However, retailers have responded by developing their own 'brands', imitating the product, and especially the design and packaging features of the leading brands, to successfully challenge existing brands. A striking example has been Sainsbury's promotion of its 'Novon' brand which captured more than a quarter of sales of laundry detergents in Sainsbury's, representing a five per cent national market share, within a few months of being released (*Financial Times*, 16/4/93). A comparable effect occurred for Sainsbury's in the soft drinks market with its 'Classic Cola' drink being packaged very similarly to the market leader, 'Coca Cola'.

38. The figures for the detailed commodity groups include some spectacular increases in concentration levels. For instance the five-firm level for jewellery increased by 94% and for fresh fruit and vegetables by 84%. A significant number of product groups now have the top five firms controlling more than half the national market - these include audio/visual equipment hire (70.9%), records and a/v tapes (60.2%), household cleaning products (52.0%), spectacles (50.9%), decorators' and D.I.Y. supplies (50.7%), and toilet preparations and cosmetics (50.7%). However, some areas remain largely unconcentrated, e.g. antiques (12.8%) and cut flowers and plants (13.0%). Moreover, there have been areas where the five-firm level has declined sharply, e.g. furniture (down by 47%) and carpets (down by 42%).

39. They thus represent a form of negative franchise fee for manufacturers.

40. As Crewe and Davenport (1992) detail, a number of important M & S suppliers have gone into receivership in recent years. This has been widely observed in the business press. As *The Investors Chronicle* (11/12/87) succinctly put it: '... as a great British landmark, M & S is here to stay. But the same cannot be said of its suppliers.'

41. There are of course exceptions where for example a manufacturer's product is difficult to transport, e.g. a low-value bulky item such as concrete and other building materials, or a product which has only local appeal, e.g. a local newspaper or a local ale. Similarly, there are 'national' markets for retailers in the form of mail-order and direct-order selling. However, while this sector is growing in importance, its share of sales remains relatively small at around 3%.

42. This differs from the problem facing manufacturers in changing research and development or national marketing programmes in response to rivals' changes.

43. Such a distinction, for example, appears to have been made by the MMC in its examination of the proposed merger of Grand Metropolitan plc and William Hill Organisation Limited (1989b) and its report on the Kingfisher plc and Dixons Group plc (1990b) merger proposal. In the former case, betting offices were viewed as serving highly local markets on the basis that punters would be unlikely to travel more than a quarter of a mile to place bets. The MMC considered whether the merger would eliminate local competition, relying on measures of market share within petty sessional divisions (PSDs) or postal districts. By contrast, in the latter case, the MMC accepted the view that there was a considerable amount of 'shopping around' for electrical goods by consumers within a local town market. Though, the MMC chose to rely on national market share measures when it concluded that the two firms set national prices and advertised their stores and the prices of their products nationally.

44. They also found that prices were distinctly lower when market shares were very unstable.

45. In addition to these two studies, Lamm (1981) and Hall *et al.* (1979) also find that food prices were positively and significantly related to local market concentration. However, a more recent study by Newmark (1990) on grocery prices in 14 US cities finds a negative relationship between price and market concentration.
46. At the very least, stores are differentiated by location, which is an important concern for consumers given that they incur search costs in visiting different stores. Nevertheless, for those consumers which treat shopping as a leisure activity, this factor is clearly less important than the shopping service offered. Moreover, with falling (relative) transport costs, the geographic extent of the market increases, and the number of competitors facing a retailer is likely to rise.
47. There is now a considerable literature in the strategic marketing and management literatures on retailer differentiation strategies - for summaries see Johnson (1987) and McGoldrick (1990).
48. Some retailers have gone down the route of selling all products as own-brands - for instance M&S sells under the St Michael brand name, other retailers selling own-label items exclusively include MFI (in furniture), Body Shop (health and beauty products) and Habitat (furniture, furnishing and housewares). While other retailers, notably the large grocery retailers like Sainsbury and Tesco, sell a mixture of manufacturers' brands and own brands.
49. Notice that there is no necessary correlation, positive or negative, at the definitional level between β and γ .
50. Full details of the model are presented in Dobson and Waterson (1994a).
51. The curves are drawn for a given value of f - in this case, at $f = 1/100$. As f increases, diversified retailing is more likely to be socially favoured, but quite plausibly also becomes more desired by manufacturers. Note that with a higher (respectively, lower) level of fixed costs the boundaries would be shifted up (down), as the sustainable number of firms in specialised retailing declines (rises) proportionately faster than in diversified retailing.
52. See Dobson and Waterson (1995) for full details.
53. A slightly more detailed overview is given by Martin (1994). For an extensive discussion of the different policy stances in developed countries with regard to vertical restraints, though focusing mainly on franchise arrangements, see OECD (1994).
54. A divergence where the restrained retailers pay a lower price is indicative of transaction cost savings.
55. For example, this is explicitly recognised in MMC (1989b).
56. On the other hand, the market for manufacturers is more likely to be considered in national or regional terms, with exceptions for bulky products (where the value to weight ratio is low) or perishable items. Of issue then is whether firms operate national policies or allow for local variations - see for instance the discussion in MMC (1990b).
57. For example, the level of amenities, convenience of location and general ambience may all play an important part in the consumer's choice of public house to frequent.
58. These three categories respectively controlled 9.1%, 28.3% and 15.1% of total market sales.

REFERENCES

- Aghion, P. and Bolton, P. (1987), "Contracts as a Barrier to Entry", *American Economic Review*, Vol. 77, pp. 388-401.
- Baumol, W.J., Panzar, J.C., and Willig, R.D. (1982), *Contestable Markets and the Theory of Industrial Structure*, Harcourt-Brace-Yovanovich: New York.
- Bernheim, B.D. and Whinston, M.D. (1992), "Exclusive Dealing", Harvard Institute of Economic Research Discussion Paper No. 1622, Harvard University.
- Besanko, D. and Perry, M.K. (1993), "Equilibrium Incentives for Exclusive Dealing in a Differentiated Products Oligopoly", *Rand Journal of Economics*, Vol. 24, pp. 646-67.
- Besanko, D. and Perry, M.K. (1994), "Exclusive dealing in a spatial model of retail competition", *International Journal of Industrial Organization*, Vol. 12, pp. 297-329.
- Blair, R.D. and Kaserman, D.L. (1983), *Law and Economics of Vertical Integration and Control*, Academic Press: New York.
- Bolton, P. and Bonanno, G. (1988), "Vertical Restraints in a Model of Vertical Differentiation", *Quarterly Journal of Economics*, Vol. 103, pp. 555-70.
- Bonanno, G. and Vickers, J. (1988), "Vertical Separation", *Journal of Industrial Economics*, Vol. 36, pp. 257-65.
- Bowman Jr., W.S. (1955), "Prerequisites and effects of resale price maintenance", *University of Chicago Law Review*, Vol. 22, pp. 825-873.
- Bork, R.H. (1966), "The Rule of Reason and the Per Se Concept", *Yale Law Journal*, Vol. 75(3), pp. 373-475.
- Bork, R.H. (1978), *The Antitrust Paradox; A Policy at War With Itself*, Basic Books: New York.
- Bresnahan, T.F. and Reiss, P.C. (1991), "Entry and Competition in Concentrated Markets", *Journal of Political Economy*, Vol. 99, pp. 977-1009.
- Chang, M-H (1992), "Exclusive Dealing Contracts in a Successive Duopoly with Side Payments", *Southern Economic Journal*, Vol. 59, pp. 180-193.

- Comanor, W.S. (1985), "Vertical price fixing, vertical market restrictions and the new antitrust policy", *Harvard Law Review*, Vol. 98, pp. 983-1102.
- Comanor, W.S. (1990), "United States Antitrust Policy: Issues and Institutions", in W.S. Comanor, K. George, A. Jacquemin, F. Jenny, E. Kantzenbach, J.A. Ordovery and L. Waverman *Competition Policy in Europe and North America: Economic Issues and Institutions*, Harward Academic: London.
- Comanor, W.S. and Frech III, H.E. (1985), "The Competitive Effects of Vertical Agreements", *American Economic Review*, Vol. 75, pp. 539-546.
- Comanor, W.S. and Kirkwood, J.B. (1985), "Resale price maintenance and antitrust policy", *Contemporary Policy Issues*, Vol. 111(3), pp. 9-16.
- Cotterill, R. (1986), "Market Power in the Retail Food Industry: Evidence from Vermont", *Review of Economics and Statistics*, Vol. 68, pp. 379-386.
- Crewe, L. and Davenport, E. (1992), "The Puppet Show: Changing Buyer-Supplier Relationships within Clothing Retailing", Working Paper 12, Department of Geography, University of Nottingham.
- Dawson, J. (1993), "The Internationalization of Retailing", in R.D.F. Bromley and C.J. Thomas (eds.) *Retail Change: Contemporary Issues*, London: UCL Press.
- Dawson, J. and Shaw, S. (1990), "The Changing Character of Retailer-Supplier Relationships", in J. Fernie (ed.) *Retail Distribution Management: A Strategic Guide to Developments and Trends*, Kogan Page: London.
- Dixit, A.K. (1983), "Vertical Integration in a Monopolistically Competitive Industry", *International Journal of Industrial Organization*, Vol. 1, pp. 275-86.
- Dixit, A.K. and Norman V. (1978), "Advertising and Welfare", *Bell Journal of Economics*, Vol. 9, pp. 1-17.
- Dobson, P.W. and Waterson, M. (1994a), "The Effects of Exclusive Purchasing on Interbrand and Intra-brand Rivalry", Warwick Economics Working Paper No. 94-15, University of Warwick.
- Dobson, P.W. and Waterson, M. (1994b), "Exclusivity Agreements between Manufacturers and Retailers", mimeo, University of Nottingham.
- Dobson, P.W. and Waterson, M. (1995), "Exclusive Trading Contracts in Successive Differentiated Duopoly", forthcoming in *Southern Economic Journal*.

- European Communities Commission (1980), *Ninth Report on Competition Policy*, EC Commission: Brussels-Luxembourg.
- Fisher, A.A., Johnson, F.I., and Lande, R.H. (1987), "Do the DOJ Vertical Restraints Guidelines Provide Guidance?", *Antitrust Bulletin*, Vol. 32, pp. 609-642.
- Gabrielsen, T.S. and Sorgard, L. (1994), "Exclusive Dealing with Retailer Intra- and Interbrand Competition", mimeo, Department of Economics, University of Bergen, Norway.
- Galbraith, J.K. (1952), *American Capitalism: The Concept of Countervailing Power*, Houghton Mifflin: Boston, MA.
- Gallini, N.T. and Winter, R.A. (1983), "On Vertical Control in Monopolistic Competition", *International Journal of Industrial Organization*, Vol. 1, pp. 275-286.
- Gal-Or, E. (1991a), "Vertical Restraints with Incomplete Information", *Journal of Industrial Economics*, Vol. 39, pp. 503-516.
- Gal-Or, E. (1991b), "Duopolistic Vertical Restraints", *European Economic Review*, Vol. 35, pp. 1237-1253.
- Hall, L., Schmitz, H. and Weiss, L. (1979), "Beef Wholesale-Retail Marketing Margins and Concentration", *Econometrica*, Vol. 46, pp. 295-300.
- Hart, O. and Tirole, J. (1990), "Vertical Integration and Market Foreclosure", *Brookings Papers on Economic Activity: Microeconomics*, pp. 205-286.
- Hay, G.A. (1985), "Vertical Restraints", *Fiscal Studies*, Vol. 6(3), pp. 37-50.
- Ippolito, P.M. (1988), "Resale Price Maintenance: Empirical Evidence from Litigation", *Journal of Law and Economics*, Vol. 34, pp. 263-294.
- Johnson, G. (1987), *Business Strategy and Retailing*, Wiley: New York.
- Kay, J. (1990), "Vertical Restraints in European Competition Policy", *European Economic Review*, Vol. 34, pp. 551-561.
- Katz, M.L. (1989), "Vertical Contractual Relations", in R. Schmalensee and R.D. Willig (eds.) *Handbook of Industrial Organization*, Vol. 1, Elsevier Science: Amsterdam.
- Krattenmaker, T.G. and Salop, S.C. (1986), "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price", *Yale Law Journal*, Vol. 96(2), pp. 209-293.
- Lamm, M. (1981), "Prices and Concentration in the Food Retailing Industry", *Journal of Industrial Economics*, Vol. 30, pp. 67-78.

- Lane, P. and Mayer, C. (1992), "The Case for Tied Relations in Beer", Oxford Economic Research Associates Ltd (OXERA) report for Courage Ltd.
- Lin, Y.J. (1991), "The Dampening-of-Competition Effect of Exclusive Dealing", *Journal of Industrial Economics*, Vol. 39, pp. 209-223.
- Marion, B.W., Mueller, W.F., Cotterill, R.W., Geithman, F.E. and Schmelzer, J.R. (1979), *The Food Retailing Industry: Market Structure, Profits and Prices*, Praeger: New York.
- Martin, S. (1994), *Industrial Economics: Economic Analysis and Public Policy*, 2nd edition, Macmillan: New York.
- Marvel, H.P. (1982), "Exclusive Dealing", *Journal of Law and Economics*, Vol. 25, pp. 1-25.
- Marvel, H.P. (1989), "Concentration and price in gasoline retailing", in L.W. Weiss (ed.) *Concentration and Price*, MIT Press: Cambridge, MA.
- Marvel, H.P. (1984) and McCafferty, S. (1984), "Resale Price Maintenance and Quality Certification", *Rand Journal of Economics*, Vol. 15, pp. 346-59.
- Mathewson, G.F. and Winter, R.A. (1984), "An Economic Theory of Vertical Restraints", *Rand Journal of Economics*, Vol. 15, pp. 27-38.
- Mathewson, G.F. and Winter, R.A. (1986), "The Economics of Vertical Restraints in Distribution", in J.E. Stiglitz and G.F. Mathewson (eds.) *New Developments in the Analysis of Market Structure*, Macmillan: London.
- Mathewson, G.F. and Winter, R.A. (1987), "The Competitive Effects of Vertical Agreements: Comment", *American Economic Review*, Vol. 77, pp. 1057-1062.
- McGoldrick, P.J. (1990), *Retail Marketing*, McGraw-Hill: Maidenhead.
- Monopolies and Mergers Commission (1981), *Discounts to Retailers*, HMSO: London.
- Monopolies and Mergers Commission (1989a), *The Supply of Beer*, Cm 651, HMSO: London.
- Monopolies and Mergers Commission (1989b), *Grand Metropolitan plc and William Hill Organisation Limited*, Cm 776, HMSO: London.
- Monopolies and Mergers Commission (1990a), *The Supply of Petrol*, Cm 972, HMSO: London.
- Monopolies and Mergers Commission (1990b), *Kingfisher plc and Dixons Group plc*, Cm 1079, HMSO: London.

- Monopolies and Mergers Commission (1991), *Carbonated Drinks*, Cm 1625, HMSO: London.
- Monopolies and Mergers Commission (1992a), *New Motor Cars*, Cm 1808, HMSO: London.
- Monopolies and Mergers Commission (1992b), *Motor Car Parts*, Cm 1818, HMSO: London.
- Monopolies and Mergers Commission (1992c), *The Supply of Matches and Disposable Cigarette Lighters*, Cm 1854, HMSO: London.
- Monopolies and Mergers Commission (1993a), *Contact Lens Solutions*, Cm 2242, HMSO: London.
- Monopolies and Mergers Commission (1993b), *Gas*, Cm 2314, HMSO: London.
- Monopolies and Mergers Commission (1993c), *Fine Fragrances*, Cm 2380, HMSO: London.
- Monopolies and Mergers Commission (1993d), *The Supply of National Newspapers*, Cm 2427, HMSO: London.
- Monopolies and Mergers Commission (1994a), *Ice Cream*, Cm 2524, HMSO: London.
- Monopolies and Mergers Commission (1994b), *The Supply of Recorded Music*, Cm 2599, HMSO: London.
- Monopolies and Mergers Commission (1994c), *Films*, Cm 2673, HMSO: London.
- Murphy, J.M. (1990), *Brand Strategy*, Director Books: Cambridge.
- Newmark, C.M. (1990), "A new test of price-concentration relationship in grocery retailing", *Economics Letters*, Vol. 33, pp. 369-73.
- O'Brien, D.P. and Shaffer, G. (1992), "Vertical Control with Bilateral Contracts", *Rand Journal of Economics*, Vol. 23, pp. 299-308.
- O'Brien, D.P. and Shaffer, G. (1993), "On the Dampening-of-Competition Effect of Exclusive Dealing", *Journal of Industrial Economics*, Vol. 41, pp. 215-221.
- Office of Fair Trading (1985), *Competition and Retailing*, London.
- Organization for Economic Cooperation and Development (1994), *Competition Policy and Vertical Restraints: Franchising Agreements*, OECD: Paris.
- Ornstein, S.I. (1985), "Resale Price Maintenance and Cartels", *Antitrust Bulletin*, Vol. 30, pp. 401-432.

- Ornstein, S.I. (1989), "Exclusive Dealing and Antitrust", *Antitrust Bulletin*, Vol. 34, pp. 65-98.
- Overstreet, T.R. (1983), *Resale Price Maintenance: Economic Theories and Empirical Evidence*, Federal Trade Commission Bureau of Economics staff report: Washington.
- Perry, M.K. and Porter, R.H. (1989), "Can Resale Price Maintenance or Franchise Fees Correct Sub-Optimal Levels of Retail Service?", *International Journal of Industrial Organization*, Vol. 8, pp. 115-141.
- Pickering, J.F. (1966), *Resale Price Maintenance in Practice*, George Allen and Unwin: Hemel Hempstead, Herts.
- Porter, M.E. (1976), *Interbrand Choice, Strategy, and Bilateral Market Power*, Harvard University Press: Cambridge, MA.
- Posner, R.A. (1976), *Antitrust Law: An Economic Perspective*, University of Chicago Press: Chicago.
- Posner, R.A. (1981), "The Next Step in the Antitrust Treatment of Restricted Distribution: Per Se Legality", *University of Chicago Law Review*, Vol. 48(1), p. 6-26.
- Rey, P. and Stiglitz, J. (1988), "Vertical Restraints and Producers' Competition", *European Economic Review*, Vol. 32, pp. 561-568.
- Rey, P. and Stiglitz, J. (1994), "The Role of Exclusive Territories in Producers' Competition", NBER Working Paper No.4618.
- Rey, P. and Tirole, J. (1986a), "Vertical Restraints from a Principal-Agent Viewpoint", in Pellegrini and S. Reddy (eds.) *Marketing Channels: Relationships and Performance*, Lexington Books: Lexington, Mass.
- Rey, P. and Tirole, J. (1986b), "The Logic of Vertical Restraints", *American Economic Review*, Vol. 76, pp. 921-939.
- Scherer, F.M. (1983), "The Economics of Vertical Restraints", *Antitrust Law Journal*, Vol. 52, pp. 687-718.
- Scherer, F.M. and Ross, D. (1990), *Industrial Market Structure and Economic Performance*, Third Edition, Houghton Mifflin: Boston, Mass.
- Schwartz, M. (1987), "The Competitive Effects of Vertical Agreements: Comment," *American Economic Review*, Vol. 77, pp. 1063-1068.

- Shaffer, G. (1991), "Slotting Allowances and Resale Price Maintenance: A Comparison of Facilitating Practices", *Rand Journal of Economics*, Vol. 22, pp. 120-135.
- Sharp, B.S. (1985), "Comments on Marvel; how fair is fair trade?", *Contemporary Policy Issues*, Vol. 111(3), pp. 37-42.
- Shaw, S.A., Bull, S.L. and Dawson, J.A. (1989), "Structural Change in the European Food Chain", in B. Traill (ed.) *Prospects for the European Food System*, Elsevier Applied Science: London.
- Slade, M.E. (1987), "Interfirm rivalry in a repeated game: an empirical test of tacit collusion", *Journal of Industrial Economics*, Vol. 35, pp. 499-516.
- Slade, M.E. (1993), "Strategic Motives for Vertical Separation: Evidence from Retail Gasoline", Economics Discussion Paper No. 93-12, University of British Columbia.
- Spence, A.M. (1975), "Monopoly, Quality, and Regulation", *Bell Journal of Economics*, Vol. 6, pp. 417-429.
- Spence, A.M. (1976), "Product Selection, Fixed Costs and Monopolistic Competition", *Review of Economic Studies*, Vol. 43, pp. 217-235.
- Spengler, J.J. (1950) "Vertical Integration and Antitrust Policy", *Journal of Political Economy*, Vol. 58, pp. 347-352.
- Steiner, R.L. (1991), "Intrabrand Competition: Stepchild of Antitrust", *Antitrust Bulletin*, Vol. 36, pp. 155-200.
- Steuer, R.M. (1983), "Exclusive Dealing in Distribution", *Cornell Law Review*, Vol. 69, pp. 101-134.
- Telser, L. (1960), "Why Should Manufacturers Want Fair Trade?", *Journal of Law and Economics*, Vol. 3, pp. 86-103.
- Tirole, J. (1988), *The Theory of Industrial Organization*, MIT Press: Cambridge, Mass.
- Tirole, J. (1990), "Competition-Reducing Vertical Restraints", in G. Bonanno and D. Brandolini (eds.) *Industrial Structure in the New Industrial Economics*, Oxford University Press: Oxford.
- Tordjman, A. (1994), "European Retailing: Convergence, Differences and Perspectives", *International Journal of Retail and Distribution Management*, Vol. 22(5), pp. 3-19.
- Totterdill, P. (1990), "Restructuring Retailing: Changing patterns of competition and their implications for public policy", CLES Research Study No. 7, Manchester.

- US Department of Justice (1985), *Vertical Restraints Guidelines*, Washington.
- Waterson, M. (1988), "On Vertical Restraints and the Law: A Note", *Rand Journal of Economics*, Vol. 19, pp. 293-297.
- Waterson, M. (1990), "Some Economics of Exclusive Purchasing Obligations", Discussion Papers in Industrial Economics, No. 22, University of Reading.
- Waterson, M. (1993), "Vertical Integration and Vertical Restraints", *Oxford Review of Economic Policy*, Vol. 9(2), pp. 41-57.
- Whinston, M.D. (1990), "Tying, Foreclosure, and Exclusion", *American Economic Review*, Vol. 80, pp. 837-859.
- Whish, R. (1993), *Competition Law*, 3rd edition, Butterworths: London.
- White, L.J. (1985), "Resale price maintenance and the problem of marginal and inframarginal consumers", *Contemporary Policy Issues*, Vol. 111(3), pp. 17-22.
- Williamson, O.E. (1986), "Vertical Integration and Related Variations on a Transaction-Cost Economics Theme", in J.E. Stiglitz and G.F. Mathewson (eds.) *New Developments in the Analysis of Market Structure*, Macmillan: London.
- Winter, R.A. (1993), "Vertical Control and Price versus Nonprice Competition", *Quarterly Review of Economics*, Vol. 108, pp. 61-76.
- Wrigley, N. (1992), "Antitrust regulation and the restructuring of grocery retailing in Britain and the USA", *Environment and Planning*, Vol. 24(5) pp. 727-50.
- Wrigley, N. (1993), "Retail concentration and the internationalization of British grocery retailing", in R.D.F. Bromley and C.J. Thomas (eds.) *Retail Change: Contemporary Issues*, London: UCL Press.
- Yamey, B.S. (1954), *The Economics of Resale Price Maintenance*, Pitman: London.
- Yamey, B.S. (ed.) (1966), *Resale Price Maintenance*, Weidenfeld/Nicholson: London.