The Law and Economics of Vertical Restraints: An Overview

by

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1. Introduction

This is a redacted version of a report on vertical restraints commissioned from Market Analysis Ltd. Section 2 provides a brief overview of vertical restraints. Section 3 discusses the treatment of vertical distribution arrangements in US and European competition law. Section 4 selectively surveys the economics literature on exclusive dealing arrangements.

2. Overview of Vertical Restraints

Firms are involved in a vertical relationship if they operate at different but complementary levels of the production/distribution chain. All upstream/downstream or input/output relationships are vertical, and any restriction that is imposed by one member of a vertical relationship on the other member of that relationship is a vertical restraint. Vertical restraints most often arise in retail settings, with the upstream firm or manufacturer typically restricting its downstream retailers' choices. For example, a manufacturer might limit its retailer's product line or geographic market, or it might set the retail price.

There is perhaps no aspect of competition policy that is as controversial or has been as inconsistent over time and across jurisdictions as policy towards vertical restraints. Moreover, conflicting and changing legal attitudes are mirrored in economic theory. Economic theorists have constructed models that lead one to either extol the virtues

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or rue the consequences of vertical agreements, and to advocate either per se legality or illegality.

The main worry of antitrust authorities in the U.S. and the E.U. when it comes to vertical restraints is the possibility that their use will foreclose entry by competitors at some level of the vertical chain. In the context of relationships involving retailers or distributors, such as the ones that we are concerned with here, a manufacturer that establishes an exclusive retail or distribution network that involves most or all retailers might prevent competitors from gaining access to customers at a reasonable cost. This in turn could prevent entry of potential competitors or perhaps even lead to rivals exiting the upstream industry. This argument requires that entry into retailing or distribution be costly due to, for example, economies of scale or a scarcity of good locations, as discussed in Section 4 below.

Despite these antitrust concerns, it is worthwhile noting that vertical restraints are extremely common. In most western economies, a large proportion of retail sales through independent retailers is subject to exclusive dealing clauses of some form,[1] and these are for most part justified by efficiency considerations. A survey of US distribution managers conducted by Heide, Dutta and Bergen (1998), for example, found that:

> *"Our central finding is that business efficiency factors play a significant role in firms' decisions regarding exclusive dealing. Specifically, we find evidence that firms are more likely to use exclusive dealing when there is a potential that other manufacturers can free ride on the services they provide. We also find that difficulties with evaluating distributors' adherence to assigned restrictions decrease the likelihood of using exclusive dealing in the first place. Finally, we also find that when manufacturers are concerned about the costs that exclusive dealing imposes on end customers, such arrangements are less likely."*

And the recent survey of the empirical literature on exclusive-dealing arrangements by Lafontaine and Slade (2007) concluded that:[2]

> *"While different theoretical models often yield diametrically opposed predictions as to the welfare effects of vertical restraints, we find that in the setting that we focus on, namely manufacturer/retailer or franchisor/franchisee relationships, the empirical evidence concerning the effects of vertical restraints on consumer wellbeing is surprisingly consistent. Specifically, it appears that when manufacturers choose to impose such restraints, not only do they make themselves better off, but they also typically allow consumers to benefit from higher quality products and better service provision."*

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1 For example, in the U.S. that fraction is over one third. See Lafontaine and Slade (2007).

2 See also Whinston (2006), Section 4.6.

Thus while our focus in this report, especially in Section 4, will be on exclusive-dealing arrangements which may have anticompetitive motives or effects, it will be important to keep in mind that the vast majority of such arrangements are either harmless or benign from an economic point of view.

The most common vertical restraints, following the classification suggested in Rey and Tirole (1986), are:

Resale price maintenance (RPM): Resale price maintenance is a provision according to which the final price charged to consumers is not set by the distributor but imposed by the producer. This restriction has several variants, including maximum retail price (price ceiling), minimum price (price floor), nonbinding ‘‘recommended retail price’’ or advertised price. Resale price maintenance or price floors suppose that price cuts can be detected at a sufficiently low cost.

Quantity fixing: Quantity fixing is a provision that specifies the quantity to be bought and resold by the retailer. Variants include **quantity forcing**, which imposes a purchase of a minimum quantity, and **quantity rationing**, which specifies a maximum quota. If demand is known and depends only on the final price, then a monopolist can use quantity fixing to enforce resale price maintenance.

Tie-ins: Tie-in provisions force distributors to buy one or more goods from the manufacturer over and above those which the distributor initially wants to carry. Full-line forcing is a particular type of tying that requires the distributor to carry the manufacturer’s whole range of products. The use of tie-in supposes that the manufacturer can verify the range of goods carried by the distributor.

Exclusivity clauses: Producers and distributors may also sign exclusivity agreements. These exclusivity clauses might limit only the distributor’s or both parties rights. Under an **exclusive-dealing** agreement, the distributor agrees not to distribute the products of other manufacturers that compete directly with the manufacturer’s products. A variant consists of **exclusive purchasing** (or **single sourcing**) which requires the distributor to buy all goods exclusively from the manufacturer.[3]

Exclusive dealing, which has sometimes been referred to as “vertical integration by contract”, is the form of restraint for which foreclosure arguments are most frequently made, and of most relevance here. An important point, however, which applies to all such arguments, is the following: <u>if vertical restraints are used to lessen competition at some level of the vertical structure through foreclosing or disadvantaging rivals, prices to consumers should be higher and quantities sold smaller than they would be in the absence of such restraints.</u>

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[3] Territorial or provisions may also be used to limit the “territory”, either geographical or defined as a specific segment of the market or group of customers that a particular distributor is allowed to serve. By granting an exclusive territory, a manufacturer commits itself not to allow any other distributor to serve the customer in this territory, thereby eliminating any intra-brand competition.

Absent any evidence of negative effects, such as higher prices and reduced sales, there is little economic justification for competition authorities to concern themselves with the vertical restraints used by firms in competitive markets.

3. Legal Treatment of Vertical Restraints

In both the United States and the European Union vertical restraints can be deemed illegal either because they restrict competition (Section 1 of the US Sherman Act or Article 81 of the European Communities Treaty) or because they constitute an abuse of dominant position (Section 2 or Article 82).

3.1 US Competition Policy toward Vertical Restraints

Although there is a long history of antitrust toward vertical restraints in the United States, policies have not been consistent over time. While the attitude of competition authorities and enforcement agencies toward minimum RPM has until recently remained constant (per se illegality),[4] this has not been the case for non-price restraints. In the early 1920s, following cases such as *Standard Oil* and *Colgate*, vertical restraints were usually assessed on a case-by-case basis.[5] This was then confirmed in 1963 in *White Motors* when the Supreme Court stated that it knew ''too little of the actual impact of (exclusive territories)'' and that ''the legality of the territorial and customer limitations should be determined only after a trial.''[6]

A sharp turn occurred in 1967 following the *Schwinn* ruling when all vertical restraints became illegal per se.[7] This very tough attitude towards vertical restraints was heavily criticized - especially by the so-called Chicago School – and a more permissive attitude toward non-price restraints was in 1977 when the Supreme Court concluded in *GTE Sylvania* that pro- and anticompetitive effects should be evaluated and that these restraints should therefore be treated under the rule of reason.[8] Price restraints (e.g. RPM), however, remained illegal per se.

A further move toward a more lenient policy began under the Reagan administration in 1981. It was then widely accepted that vertical restraints were likely to be pro-competitive, and when the *Vertical Restraints Guidelines* were published by the US

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4 In 1911 the Supreme Court ruled in Dr. Miles that resale price maintenance was illegal per se, and this ruling governed such agreements until the recent judgement in Leegin Creative Leathers v. PSKS (28 June 2007), indicating a shift towards a rule of reason approach with respect to price restraints.

5 See Standard Oil Co. v. United States, 221 US 1 (1911) and United States v. Colgate & Co., 250 US 300 (1919).

6 See White Motors Co. v. United States, 372 US 253 (1967).

7 See, for instance, United States v. Arnold, Schwinn & Co., 388 US 365 (1988).

8 See Continental T.V, Inc. v. GTE Sylvania, 433 US 36 (1977).

Department of Justice in 1985, they were regarded as rendering all non-price vertical restraints legal. As noted by Comanor and Rey (1997), it was then ''hardly surprising that neither federal antitrust agency brought a single case against a vertical restraint during the twelve Reagan–Bush years.''

Following another change of administration, competition policy switched back toward an active enforcement under the rule of reason. This move was confirmed as early as in May 1996 when the FTC brought charges against Toys R Us for abuse of dominant position and exclusionary practices. The Toys R Us case marked a major change toward a more vigorous enforcement, and since then the US authorities have opened a number of cases involving major firms, the most famous being the everlasting case against Microsoft. Recent cases with important vertical components such as *United States v. Microsoft*, *Le- Page v. 3M*, and the DOJ investigation of *Orbitz* signal a more active enforcement policy toward vertical restraints.[9]

Under US law, a private plaintiff can challenge vertical restraints under Section 1 of the Sherman Antitrust Act as an unreasonable restraint of trade, or under Section 2, as exclusionary conduct in furtherance of monopoly power.[10] Under either cause of action, a plaintiff must show that the agreement in question is likely to harm competition.

Absent some indication of concerted horizontal activity, a supplier's decision to restrict the distribution channels in which its product is available will raise antitrust concerns only if a plaintiff can show that such a restraint is likely to harm inter-brand competition, and that this harm outweighs any pro-competitive benefits. Likewise, exclusive-dealing requirements do not raise competitive concerns absent a plaintiff's ability to show that they are likely to have a net deleterious effect on competition. Here, inquiry into the share of the downstream market covered by exclusive contracts serves a gatekeeper function; when the percentage of the market covered is small, this typically is the end of the matter.[11]

If a plaintiff shows substantial foreclosure, this is only the beginning of the Section 1 inquiry; a plaintiff must show in addition that the defendant's agreements are likely to result in prices above (and thus output below) the competitive level.[12] The requirement

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9 See United States v. Microsoft, Civil Action No 98-1232 and LePage v. 3M, 324 F. 3d 141 (3d Circ. 2003).

10 This discussion is based largely on Cooper et al. (2005).

11 *See* Bus. Elec. Corp. v. Sharp Elec. Corp., 485 U.S. 717, 727-28 (1988).

12 *See* Barr Labs., Inc. v. Abbott Labs., 978 F.2d 98, 111 (3d Cir. 1992) ("*the degree of market foreclosure is only one of the factors involved in determining the legality of an exclusive dealing arrangement*"); Roland Mach. Co. v. Dresser Indus., Inc., 749 F.2d 380, 394 (7th Cir. 1984) ("*in addition to substantial foreclosure, a necessary condition for exclusive dealing to be unlawful is that the probable (not certain) effect of the exclusion will be to raise prices above (and therefore reduce output below) the competitive level, or otherwise injure competition*"); and Areeda and Hovenkamp (2001), "*Antitrust is not concerned with denial of access in the abstract, but only*

that a plaintiff shows more than that exclusive dealing hindered competitors' access to downstream outlets exists because "[t]he exclusion of competitors is cause for antitrust concern only if it impairs the health of the competitive process itself."[13] To assess the likely competitive effects of market foreclosure, courts examine such factors as the defendant's market share and entry barriers, and the likelihood that rivals can find alternative means to reach the downstream market.

3.2 European Competition Policy toward Vertical Restraints

In contrast to US antitrust law, European competition law is much more recent and promoting competition is not a goal in itself but only a means to achieve single market integration. Under Article 81(1) of the European Communities Treaty, any agreement ''which may affect trade between member states and which has as (its) object or effect the prevention, restriction or distortion of competition within the common market'' is prohibited. As mentioned by Verouden (2003), ''the Commission has fairly consistently chosen a strict interpretation of the concept of restriction of competition.'' This has been, and is still, particularly true for territorial restraints, especially if the boundaries of these territories are national borders and such agreements are used to restrict parallel imports.

In 1964 the Commission and the European Court of Justice concluded in *Grundig-Consten* that an exclusive-dealing agreement that made Consten the exclusive retailer of various Grundig products in France was restrictive because it was preventing re-exports by Consten.[14] This case was also the first to establish that vertical and not only horizontal agreements fell under Article 81(1). More recently Nintendo (and some of its distributors), Volkswagen A.G., Opel Netherlands B.V. and DaimlerChrysler A.G. were respectively fined €168 million, €90 million, €43 million, and €72 million for attempting to restrict parallel imports.[15] A particular feature of European competition law is that, under Article 81(3), agreements that fall under the scope of Article 81(1), and should therefore be banned, may be exempted if they ''contribute to improving the production or distribution of goods or to promoting

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with denial of access that foreseeably results in an output reduction and attendant increase in price."

13 *Roland Mach*., 749 F.2d at 394 ("*The exclusion of one or even several competitors, for a short time or even a long time, is not ipso facto unreasonable*.").

14 This decision was confirmed in 1966 by the European Court of Justice. See Commission Decision, Official Journal of the European Communities 161, 20 October 1964, and European Court of Justice, Consten and Grundin v. Commission, joined cases 56/64 and 58/64, 13 July 1966.

15 See case Nintendo COMP/35.587 [Commission Decision, OJ L255, 8 October 2003], Volkswagen A.G. COMP/36.693 [Commission Decision, OJ L262, 2 October 2001], Opel Netherlands B.V. COMP36.653 [Commission Decision, OJ L59, 28 February 2001] and DaimlerChrysler A.G. COMP 38/0.64.

technical or economic progress while allowing consumers a fair share of the resulting benefit.''

In 1996, the Commission published a *Green Paper on Vertical Restraints*, which included an economic analysis of the impact of vertical restraints on competition. The conclusions of the *Green Paper* and the debate that followed led to the adoption of a new block exemption regime in 1999, the publication of new guidelines in 2000, and the removal of the obligation of notification in May 2004.[16] These new guidelines take on board most insights from the economic literature and constitute a major shift of policy; in particular, decisions are no longer based primarily on the type of restraint considered but also account for the market environment: *''For most vertical restraints, competition concerns can only arise if there is insufficient inter-brand competition, i.e., if there is some degree of market power at the level of the supplier or the buyer or at both levels. If there is insufficient inter-brand competition, the protection of inter- and intra-brand competition becomes important."*

Although the enforcement of Article 81 has changed over the years, price restraints such as resale price maintenance (RPM) have always been banned per se. The authorities' attitude toward non-price restraints is much more lenient. Territorial or customer restrictions may be granted exemption under Article 81(3) except if they prevent parallel imports: exclusive territories provisions have, for instance, been granted exemption in the *Pronuptia* case, and in a number of other franchising agreements considered by the Commission, territorial or customer restrictions qualified for exemption. At the same time similar arrangements have been deemed illegal in the *Grundig-Consten* case, since their effect was to restrict parallel imports. Following a very similar line of argument, exclusive purchasing clauses that are seen as a restriction of competition, and thus fall under Article 81(1), have often been exempted under Article 81(3).

Vertical Restraints and Distribution Agreements in EU Law[17]

The European Commission (2002) defines vertical agreements as "agreements for the sale and purchase of goods or services which are entered into between companies operating at different levels of the production or distribution chain". Distribution agreements between manufacturers and wholesalers or retailers are typical examples of the vertical agreements concerned. Whether a vertical agreement actually restricts competition and whether in that case the benefits outweigh the anti-competitive effects will often depend on the market structure. In principle, this requires an individual assessment.

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16 See Commission Regulation (EC) 2790/99, OJCE 1999 (L336), Commission Notice—Guidelines on Vertical Restraints, OJCE 2000 (C291) and Council Regulation (EC) 1/2003, OJCE 2003 (L1).

17 See European Commission (2002).

In 1999 the Commission adopted Regulation (EC) No 2790/1999, 'the Block Exemption Regulation' (the BER), which came into force on 1 June 2000 and which provides a safe harbor for most vertical agreements. The BER exempts vertical agreements entered into by companies with market shares not exceeding 30%. The Commission has also published *Guidelines on Vertical Restraints* (2000). These describe the approach taken towards vertical agreements not covered by the BER.

The BER contains five hardcore restrictions that lead to the exclusion of the whole agreement from the benefit of the BER, even if the market share of the supplier or buyer is below 30%. Hardcore restrictions are considered to be so serious that they are almost always prohibited.[18]

The BER also imposes specific conditions on three types of vertical restraint: non-compete obligations during the contract; non-compete obligations after termination of the contract; and the exclusion of specific brands in a selective distribution system. When the conditions are not fulfilled, these vertical restraints are excluded from the exemption by the BER.

Non-compete obligations are defined as obligations that require a buyer to purchase more than 80% of its total requirements from the supplier, and the first exclusion concerns non-compete obligations of indefinite duration, or which exceed five years.[19]

The third exclusion concerns the sale of competing brands in a selective distribution system. If the supplier prevents his appointed dealers from selling specific competing brands, the restriction does not enjoy exemption under the BER.[20]

Above the market share threshold of 30%, the BER does not apply. However, exceeding the market share threshold of 30% does not create a presumption of illegality. This threshold serves only to distinguish those agreements which benefit from a presumption of legality from those which require individual examination. The Commission's *Guidelines on Vertical Restraints* set out general rules for the assessment of vertical restraints, and provide criteria for the assessment of the most common types of vertical restraints. These are: single branding (non-compete obligations), exclusive distribution, customer allocation, selective distribution, franchising, exclusive supply, tying and recommended and maximum resale prices.

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18 The first hardcore restriction concerns resale price maintenance; the second territorial restrictions; the third and fourth restrictions concern selective distribution; and the fifth concerns agreements that prevent or restrict end-users, independent repairers and service providers from obtaining spare parts directly from the manufacturer of the spare parts.

19 G*uidelines on Vertical Restraints*, paragraphs 58-59. Non-compete obligations are covered by the BER when their duration is limited to five years or less, or when renewal beyond five years requires the explicit consent of both parties and no obstacles exist that hinder the buyer from effectively terminating the non-compete obligation at the end of the five-year period.

20 G*uidelines on Vertical Restraints*, paragraphs 60-61.

The Commission applies ten general rules for the assessment of vertical restraints in situations where the BER does not apply. The first six of these are:[21]

1. For most vertical restraints, competition concerns can only arise if there is insufficient *inter-brand* competition, i.e. if there exists significant market power at the level of the supplier or the buyer, or both. Where there are many firms competing at both levels of the vertical chain, it is assumed that non-hardcore vertical restraints will not have appreciable negative effects on competition.

2. Vertical restraints which reduce inter-brand competition are generally more harmful than vertical restraints that reduce competition between distributors of the same brand (i.e. intra-brand competition). Hence, non-compete obligations are likely to have more negative effects on competition than exclusive distribution agreements which are not combined with non-compete obligations.

3. In the absence of sufficient inter-brand competition, restrictions on intra-brand competition may significantly restrict the choice available to consumers. They are particularly harmful when more efficient distributors or distributors with a different distribution format are foreclosed or kept out of the market.

4. Exclusive dealing arrangements are generally worse for competition than nonexclusive arrangements. For instance, under a non-compete obligation the buyer may only purchase and sell one brand, whereas a minimum quantity requirement leaves the buyer scope to purchase competing goods.

5. Vertical restraints are in general more harmful in relation to branded products than in relation to non-branded products

6. The negative effects of vertical restraints can be reinforced when several suppliers organize their distribution on the same market in a similar way (parallel networks of similar agreements). In particular, via single branding (non-compete obligations) or selective distribution, which might create a cumulative foreclosure effect.

4. The Economic Analysis of Vertical Restraints

As noted in Section 2, the motivations for vertical restraints and their impact on economic welfare have been actively debated by academic economists over many years. Some believe that vertical agreements are very different from agreements between competing firms and will only be observed where they improve the efficiency of the vertical structure. Competition authorities should therefore let firms design these arrangements as they wish. Others believe that contractual terms that restrict one party's freedom of trade — as would be the case for many vertical restraints — are more likely to be harmful to competition. As described in Section 3, this economic debate has been mirrored in the changing attitudes that US and European

[21] The final four provisions relate to efficiencies and the opening of new markets or the introduction of new products.

competition authorities have taken towards restraints between upstream firms and their downstream retailers.

In the following subsections we briefly describe the economic analysis vertical restraints as it applies to exclusive-dealing arrangements (or quantity forcing) which may restrict inter-brand competition, and to exclusive-dealing arrangements (or quantity rationing) which may restrict intra-brand competition. While our focus here is on economic models in which such anticompetitive effects may arise, it remains important to bear in mind that the empirical evidence on such arrangements overwhelmingly finds that when firms agree to such restraints, they typically make both themselves and consumers better off.[22]

4.1 Exclusive Dealing to Restrict Inter-brand Competition

The recent economics literature has identified circumstances in which vertical restraints can be used to foreclose access to markets and prevent the entry of potentially more efficient competitors. One possible strategy might be to sign up *all* available distributors into exclusive-dealing arrangements, thereby forcing potentially new suppliers to set up their own distribution systems. If there are large economies of scope or scale in the distribution sector, such exclusive arrangements can potentially raise the entry cost of potential rivals.

A similar entry barrier might be created if entry at the downstream level is difficult and costly, such as if there is a limited supply of retailers, at least of comparable quality, or a scarcity of comparably good retail locations. Then again, tying up the best retailers or locations through long-term, exclusive-dealing provisions will increase distribution costs for newcomers and thus impede entry by a potential competitor.[23]

Exclusive-dealing agreements can, in principle, also harm retailers and distributors, who may prefer to carry the products of more manufacturers, and may benefit from increased competition if entry does occur. But they can sometimes be compensated for this risk by a share of the extra profits generated so long as entry is successfully deterred.

The use of exclusive-dealing agreements to restrict competition has long been contested by the so-called Chicago School, which argued that using such provisions to deter entry cannot be profitable. This view is well summarized by the influential works of Posner (1976) and Bork (1978). They argue that, in order to induce a buyer or retailer to sign an exclusive deal, the manufacturer must fully compensate it for the loss it suffers from not purchasing from a more efficient entrant. If the purchasers are final consumers, this loss amounts to the difference between the consumer surplus under entry and the consumer surplus under monopoly, an area which equals the monopoly profit plus the monopoly deadweight loss. Hence, the loss suffered by the

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[22] See Section 2 above.

[23] These strategies are part of more general ‘‘raising rivals’ costs strategies’’ that have been informally explored in the US institutional context by Krattenmaker and Salop (1986).

purchaser is greater than the profit the manufacturer would make when entry is deterred. It follows that the manufacturer would not find it profitable to foreclose entry, and efficiency considerations, rather than anticompetitive motives, must explain the use of exclusive contracts.

Commenting on the *Magrane-Houston* case, Bork (1978, pp. 306-7) put the argument this way:

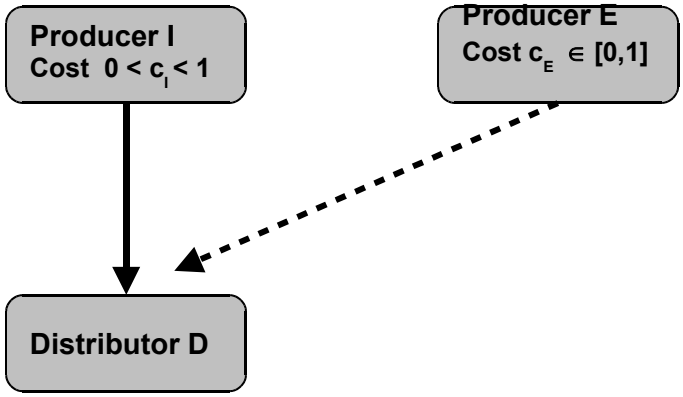
> *"Standard can extract in the prices that it charges all that its line is worth. It cannot charge the retailer that full amount in money and then charge it again in exclusivity that the retailer does not wish to grant. To suppose that it can is to commit the error of double counting. ...Exclusivity has necessarily been purchased from it, which means that the store has balanced the inducement offered by Standard... against the disadvantage of handling only Standard's patterns... The store's decision, made entirely in its own interest, necessarily reflects the balance of competing considerations that determine consumer welfare. ... If Standard finds it worthwhile to purchase exclusivity..., the reason is not the barring of entry, but some more sensible goal, such as obtaining the special selling effort of the outlet."*

The Chicago School critique, while very insightful, depends on a number of (implicit) assumptions. In recent years various authors have shown how alterations in the Chicago School model can make exclusive contracts a profitable strategy for excluding rivals. These models all have the feature that some form of externality arises from an exclusive contract signed by two (or more) parties, and this externality can make the contract jointly optimal.

Exploitation of Rivals

The first such model was due to Aghion and Bolton (1987), who showed that an incumbent manufacturer could use part of the extra profit generated from excluding an entrant to ‘‘bribe’’ distributors into agreements. To be more precise, consider the situation presented in Figure 4.1 below.

Figure 4.1: Potential entry on the upstream market: Aghion and Bolton (1987)



An incumbent producer ***I*** has a constant marginal cost of production c_I *(0 < c_I < 1)* and faces a potential entrant ***E*** whose marginal cost c_E' is unknown *ex ante*, but is uniformly distributed over the unit interval [0, 1]. To market its product, the manufacturer has to deal with a monopolist distributor ***D***. We assume that there are no direct costs associated with distribution as such. Final demand is assumed to be inelastic and equal to *Q = 1* so long as the retail price is not higher than $v > c_I$.

Suppose first that exclusive dealing is banned. The game is then as follows. The potential entrant decides whether to enter or not. The incumbent manufacturer and the entrant (if entry occurs) simultaneously set their wholesale prices w_I and w_E. The distributor buys from the cheapest manufacturer and resells at price *v* on the final goods market.

The entrant manufacturer ***E*** chooses to enter only when it is more efficient than the incumbent ($c_E < c_I$), which occurs with probability c_I, and it sets a wholesale price equal to c_I . When entry occurs, the producers' and the distributor's profits are respectively:

$$\pi_I(E) = 0;\ \pi_E(E) = c_I - c_E\ ;\ \text{and}\ \pi_D(E) = v - c_I$$

When ***E*** is less efficient, so entry does not occur, ***I*** then acts as a monopolist and sets its wholesale price equal to *v*. The firms' profits are:

$$\pi_I(NE) = v - c_I\ ;\ \pi_E(NE) = 0;\ \text{and}\ \pi_D(NE) = 0$$

The *ex ante* expected profits for ***I*** and ***D*** are therefore:

$$\pi_P = (1 - c_I)(v - c_I)\ \text{and}\ \pi_D = c_I(v - c_I)$$

Consider now what happens if ***D*** signs an exclusive dealing agreement with ***I***. Confirming the Chicago School argument, such an agreement cannot simply consist

of a commitment to deal exclusively with ***I*** even when ***E*** is active; ***D*** would never be willing to accept such an agreement. However, Aghion and Bolton (1987) solve this problem by assuming that in signing an exclusive agreement, **D** agrees to pay compensation to ***I*** if it decides to deal with the entrant. An exclusive dealing contract thus consists of a wholesale price w_I at which ***D*** can buy from ***I***, and a penalty P to be paid to ***I*** if ***D*** decides to break the exclusive agreement. This means that ***D*** will deal with ***E*** only if $w_E + P < w_I$. Thus ***E*** will enter only when $c_E < w_I - P$. Given that ***E*** will charge a price equal to the price offered by ***I*** minus the penalty ($w_E = w_I - P$), ***D***'s profit if it has accepted the exclusive dealing arrangement is simply $\pi_D = v - w_I$.

I profit maximization problem is therefore to choose the exclusive contract (w_I, P) which maximizes its profit subject to ***D*** being at least as well off from signing the contract as not, i.e. subject to : $v - w_I - \gamma \geq c_I(v - c_I)$. The solution to this problem is then:

$$w^*_I = v - c_I(v - c_I) \text{ and } P^* = w^*_I - c_I/2$$

and ***I*** 's expected profit under this exclusive dealing agreement is:

$$\pi^*_I (ED) = (1 - c_I)(v - c_I) + c_I^2/4$$

This solution shows that entry can be at least partially prevented, since entry only occurs now when ***E*** is *much more* efficient than ***I***, i.e. when $c_E \leq c_I/2$. The entry barrier is achieved through the provision for "liquidated damages" which allows ***D*** to break the exclusive dealing agreement by paying a penalty to ***I***. To enter the market, ***E*** will have to compensate ***D*** for exactly the amount of this penalty. When entry occurs, the damages increase the joint profit of ***I*** and ***D***, who can then share this increase in joint profit through the wholesale price. Exclusive dealing is thus an attractive option for both the incumbent and the distributor because it allows them to extract some of the profit that the entrant generates when it enters the market.

One important point to note about this result is that it relies on the ability of the incumbent producer (***I***) and the distributor (***D***) to sign a binding agreement which cannot be renegotiated *ex post*, once entry occurs. The value of their contract could be undermined if renegotiation is possible, and in some cases vitiated altogether.[24] A second point is that it is not a good model for explaining the incentives of incumbent producers to exclude entry into their markets, since the whole point of the exclusive contract is to extract some of the entrant's profits *when it enters*.

In addition, Moen and Riis (2005) argue that the Aghion and Bolton analysis is incomplete, in the sense that it does not explicitly model the entry of new manufacturers. In particular, the analysis assumes that the probability that an entrant arrives is exogenous and does not depend on whether the incumbent manufacturer has signed an exclusive-dealing agreement with the distributor. If potential entrants base their entry decision on agreements prevailing in the market at the time of entry, exclusive-dealing agreements may deter entry altogether. This implies that the

[24] See Spier and Whinston (1995); also Whinston (2006), p. 143.

incentive to sign such agreements for the purpose of extracting the gains offered by more efficient manufacturers will be reduced.[25]

Finally, the Aghion-Bolton argument also relies on the assumption that the entrant is not present at the time when the incumbent manufacturer and the distributor sign their initial agreement. If the entrant were already present in the market, the game would look entirely different. Then the entrant could approach the distributor with an alternative contract and this alternative could be made more attractive than anything the incumbent could offer so long as the entrant were more efficient.

The most important conditions that need to be satisfied in order for exclusive-dealing agreements to lead to inefficient entry deterrence in the Aghion and Bolton framework may therefore be summarized as follows:

- **monopoly first-mover advantage**: at the time when the exclusive-dealing agreement is written, there are no alternative manufacturers (sellers) already in the market;
- **monopoly distributor**: there must be a single monopolist distributor, or at least distributors must be few in number and there must be significant entry barriers into distribution.
- **penalty clauses**: the exclusive-dealing agreement contains a penalty for breach of contract;
- **non-renegotiation:** the parties to the exclusive-dealing agreement must be committed to not renegotiating their agreement.

"Divide and Rule" Strategies

In contrast to Aghion and Bolton (1987), Rasmusen, Ramseyer, and Wiley (1991) provide a model in which exclusive contracts are used for *purely* anticompetitive motives. They show that exclusive-dealing arrangements can be used to deter the entry of more efficient competitors even in the absence of ''rent extraction,'' that is, by way of simple contracts without the liquidation damages needed in the Aghion and Bolton (1987) framework.

The Rasmusen *et al* argument relies on a lack of coordination among distributors and on the assumption that entry is viable only if the entrant is able to sell its products to a minimum number of consumers or retailers, because of large fixed costs of entry, for example. The idea is that if the incumbent can convince a sufficient number of distributors to enter into exclusive-dealing agreements, then entry will become unprofitable for the rival producer. This can be done by sharing with those distributors that enter into the agreements, the extra rent that is then gained from dealing with the

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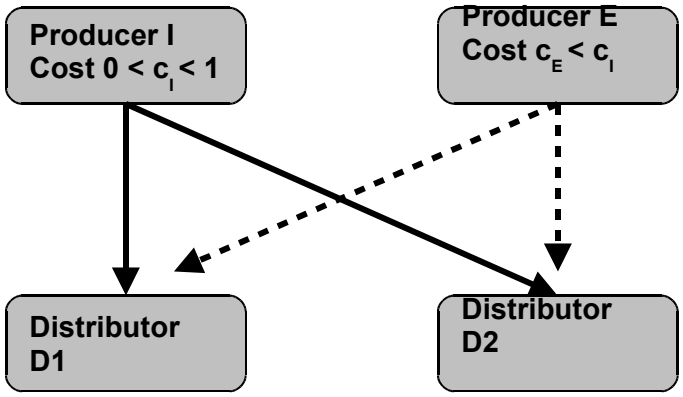
[25] One could also imagine that buyers act strategically. Innes and Sexton (1994) present a model in which distributors can cooperate with a new seller. In this case, exclusive dealing will be used only when entry is inefficient. These authors therefore conclude that *"the desirable efficiency properties of exclusionary contracts ... are restored"* (p. 566).

remaining distributors, who will have no alternative supplier. If offers are made simultaneously to all distributors, there always exists an equilibrium in which they all accept the exclusive-dealing agreement. Since a single distributor would never purchase a large enough quantity to make entry viable for the rival producer, it has no incentive to deviate and reject the exclusive deal.

To take the simplest possible example consider the situation depicted in Figure 4.2. We suppose that there are just two distributors – ***D1*** and ***D2*** – each serving a market with inelastic demand equal to $Q_i = 1,\ i=1,2,$ for retail prices not higher than $v > c_I$. Assume also that the entrant, ***E***, is more efficient that the incumbent, i.e. $c_E < c_I$, but that entry involves expenditure of a fixed costs $f > 0$ such that if ***E*** enters with a wholesale price of $w_E = c_I$ he will only cover his costs if he can serve both markets, i.e.

$$2(c_I - c_E) > f > (c_I - c_E)$$

Figure 4.2: Naked exclusion in Rasmusen *et al* (1991)



If entry occurs, each distributor will earn profits of $\pi_D(E) = v - c_I$, since the entrant will sell the product to them for a price of c_I. If either distributor signs an exclusive agreement with the incumbent, each will earn $\pi_D(NE) = 0,$ since in this case ***I*** will set its wholesale price equal to v. Suppose the incumbent publicly and simultaneously offers exclusive contracts to both distributors, perhaps for a small payment of ε which is much less than $\pi_D(E)$. If ***D1*** accepts the offer, ***D2*** will be better off accepting the offer since entry will not then occur, and *visa versa*. Likewise, if ***D1*** refuses the offer, ***D2*** will be better off refusing the offer (since entry *will* then occur). Hence there are two Nash equilibria to this coordination game, one of which involves the exclusion of the more efficient entrant for a negligible price of 2ε.

Segal and Whinston (2000) noted that the suggested equilibrium in which both distributors accept the offer is not “coalition-proof”, since both distributors rejecting the exclusive-dealing agreement is a jointly preferred alternative. That is, as in the Chicago School argument, the incumbent cannot profitably compensate all of the distributors sufficiently to make them jointly prefer the exclusive-dealing agreement.

Once the incumbent can discriminate across distributors, however, the anticompetitive use of exclusive-dealing agreements becomes a more robust phenomenon. With discriminatory offers the ‘‘exclusion equilibrium’’ is not based on a lack of coordination between distributors, but on the negative externality that distributors who accept the exclusive-dealing agreement impose on other distributors by reducing the likelihood of entry. Intuitively, the incumbent may find it worthwhile to “bribe” a subset of distributors to accept the exclusive-dealing agreement because it can then monopolize the other distributors without paying them anything. More subtle is the fact that the incumbent may not need to pay compensation to any of the distributors if they expect that a sufficient number of other distributors will sign the agreement anyway (see Whinston 2006).

To see this suppose that ***I*** can now make sequential offers to ***D1*** and ***D2***. If ***D1*** refuses then the incumbent will find it worthwhile to offer $D2\ v\text{-}c_I$ for accepting the offer, and entry will be excluded. Realizing this, ***D1*** will be willing to accept ***I***’s offer for an arbitrarily small payment, and ***I*** will be able to exclude the more efficient entrant, essentially for free.

While the underlying mechanism is different, the divide-and-rule argument relies on many of the same assumptions as the exploitation-of-rivals argument noted above. In particular, it is assumed both that ***E*** is not present in the market when ***I*** initially signs up the distributors to exclusive-dealing agreements, and that these agreements cannot be renegotiates. If we allowed for the possibility that ***E*** could make counter-offers – either at the time when initial agreements are negotiated, or when entry occurs – the argument would potentially unravel.

It also assumes that ***I*** can pre-empt or deter the competitor entirely. If ***E*** has already entered the market or cannot be kept out completely, ***I*** will not be able to exercise monopoly power over distributors, and the distributors will lack incentives to accept exclusive-dealing agreements. We are therefore back in the situation described by in the Chicago School model, where exclusive-dealing agreements will be signed only when the lead to the largest total gain.

Furthermore, the models of Rasmusen, Ramseyer, and Wiley (1991) and Segal and Whinston (2000) assume that downstream firms are either the final buyers of the product or that they sell the incumbent manufacturer’s product on independent markets (so that they act as local monopolists). We might therefore ask how these results are affected when the downstream distributors compete with one another. Competition between distributors has two opposing effects on the likelihood of profitable exclusion. First, it can reduce the number of distributors that a rival manufacturer needs to enter the market, thus making exclusion more difficult or even

impossible. Second, it can reduce the losses that distributors suffer from signing exclusive-dealing agreements since, if distributors' margins are small in any event due to intense competition between them, the benefits of entry may be largely captured by final consumers rather than the distributors themselves.

These points have been treated in two recent papers by Fumagalli and Motta (2006) and Simpson and Wickelgren (2007). Fumagalli and Motta (2006) extend the analysis of Segal and Whinston (2000) to show that exclusive dealing cannot occur in equilibrium if competition among the downstream distributors is 'fierce' enough. Consider, for instance, the extreme case in which all distributors have the same costs and compete in prices on the final market. If all of its rivals accept an exclusive-dealing agreement offered by the incumbent manufacturer, a single distributor has a strong incentive to deal with a potential new manufacturer. If the new manufacturer is a more efficient than the incumbent, the new manufacturer can offer the distributor a lower price, thereby enabling the distributor to capture the entire market; this will make entry viable. Since the distributor dealing with the new manufacturer can earn large profits, the amount of compensation that the incumbent will need to offer to induce acceptance of an exclusive-dealing contract also becomes large. So exclusive dealing can be profitable only if downstream competition between distributors is limited, as in the models of Rasmusen, Ramseyer, and Wiley (1991) and Segal and Whinston (2000), or when manufacturers sell directly to final consumers.

Fumagalli and Motta (2006) concentrate on the case of Bertrand competition, with an arbitrarily small, but positive fixed cost to operate on the downstream market. One of the consequences of this assumption is that when a distributor purchases from the entrant, the other distributor (who is committed to buy from the incumbent), will not be active. This implies that the reward for the free distributor – who effectively becomes a monopolist – is very large, making it impossible for the incumbent to compensate buyers for accepting exclusivity.[26] When this assumption is dropped, there can exist circumstances in which both distributors are active and intense competition *facilitates* exclusion, as demonstrated by Simpson and Wickelgren (2007). Consider for instance the special case of the above model in which no fixed cost is required to operate in the downstream market (so both distributors will always be active). The price chosen by the incumbent now crucially affects the payoff of the non-signing distributor. Indeed, if the incumbent chooses a wholesale price sufficiently close to c_I, a non-signing distributor may earn small profits from dealing with the entrant; price competition between the two distributors will drive the retail price down to the wholesale price of the incumbent, leaving the distributor of the entrant with only a small margin. Therefore, the incumbent needs only offer firms a small amount to

[26] This is because, in this model, the free distributor becomes a monopolist of the downstream market with a marginal cost that is just below the upstream incumbent's marginal cost. Because the incumbent cannot offer the free buyer a sum greater than its downstream monopoly profit, the incumbent cannot get this buyer to sign an exclusive contract. Thus, since a single free buyer can enable the entrant to obtain any needed economy of scale, the incumbent cannot use exclusive contracts to prevent entry by a more efficient firm.

induce them to sign an exclusive contract; consequently, exclusionary equilibria arise once again.

More generally, Simpson and Wickelgren argue that vigorous downstream competition substantially reduces the benefit a buyer obtains from greater upstream competition. Because downstream competition drives price toward cost, most of the benefits from lower input prices are passed on to final consumers. This means that an upstream incumbent can induce downstream buyers to sign exclusive contracts by offering them a small side payment, even where upstream scale economies are absent.[27]

Whinston (2006) summarizes these points in a simple model with $N \geq 2$ identical distributors. If the rival manufacturer ***E*** does not enter the market, then all distributors earn zero profits since the incumbent will sell them its product at the monopoly price. If all but one distributor have signed an exclusive garment with ***I***, if ***E*** enters the remaining free distributor may make a positive profit if ***E****'s* cost advantage is large enough. Otherwise, the distributor will make zero profits from selling ***E***'s product. Thus in cases where selling the entrant's product earns small or zero profits, competition between distributors makes exclusion easier, since distributors do not benefit from ***E***'s entry. When ***E***'s cost advantage is large enough however, competition among distributors makes exclusion harder, as in Fumagalli and Motta (2006).

We may summarize the most important conditions underlying the divide-and-rule argument as follows:

- **monopoly first-mover advantage:** at the time when the exclusive-dealing agreement is written, there are no alternative manufacturers (sellers) on the market;
- **non-renegotiation:** the parties to the exclusive-dealing agreement are committed to not renegotiating the agreement;
- **complete foreclosure:** entrants must be kept out completely, since otherwise they could gain a foothold in the market that may be used to enter on full scale once the exclusive-dealing agreements with the incumbent expire or are to be renewed;
- **entry barriers into distribution**: distributors must be few in number and there must be significant entry barriers into distribution;
- **limited downstream-competition:** when competition between buyers is limited, either because they are final consumers of the product or because they resell the product on separate markets, exclusion is relatively easy; if competition between buyers is vigorous, exclusion is possible only if the cost advantage of entrants is relatively small.

[27] Much of the analysis of Simpson and Wicklegreen is concerned with the possibility that distributors might choose to breach exclusive-dealing agreements and pay expectation damages. We do not discuss this issue here.

Quantity Contracts

The analyses discussed above are all based on the assumption that it is possible for an incumbent manufacturer to write enforceable exclusive-dealing agreements with distributors. If such agreements are not possible however (for example, because competition law forbids them), could the incumbent producer still achieve the same results by fixing the quantities it sells to downstream distributors?

Consider again the example introduced above and Suppose first that the downstream distributors compete in separate geographic markets. Then by selling each downstream distributor the monopoly quantity $Q_i^m = 1$ for a fixed payment equal to the monopoly revenues $P_i{}^m Q_i^m = v$ in each market, it is easy to see that the distributors will not agree to purchase any additional quantities from a rival manufacturer.[28] Will the distributors agree to a fixed quantity contract in the first place? The coordination/externality arguments presented above work equally well in this context. If the rival manufacturer needs to serve both geographic markets to make entry profitable, then the incumbent can sign up the distributors to fixed quantity contract for an arbitrarily small inducement. Thus, as noted by Whinston (2006, pp. 149-150): "*if quantity contracts were allowed, an incumbent seeking to deter entry would prefer to sign buyers to long-term quantity contracts since thee would still exclude but would involve no deadweight loss from monopoly pricing*."

If the distributors compete downstream in a single homogeneous product market, does this change the result? Now suppose that only one distributor signs a fixed quantity contract to take the monopoly quantity Q^m for a payment of the monopoly rents. Then, even if ***E*** offers the free distributor a lower effective per unit price, he cannot use this cost advantage to steal the contracting distributors market, since the fixed quantity contract makes marginal cost equal to zero for the contracted distributor.

Indeed, quantity contracts could overcome the potential difficulty noted by Fumagalli and Motta (2006) of the incumbent manufacturer signing up distributors to exclusive-dealing agreements when there is vigorous competition downstream. Suppose that distributors compete in prices in a single homogeneous product market. Again, once both distributors have signed fixed quantity contracts to receive, say ½ Q^m for a payment of half of the monopoly rents, *v/2,* neither will take additional product from a new entrant, even if offered at a lower price. The reason is that each distributor will be willing to offer the quantity they have contracted for with the incumbent manufacturer at any price above distribution costs, which here are assumed to be zero. Consequently, there is no profitable price at which a distributor can increase sales by capturing market share from its competitor. The same is true if only one distributor signs a fixed-quantity contract to take the total quantity Q^m. Then, even if the entrant

[28] The quantity contract can specify a linear price of $P_i{}^m$ for each distributor, but with fixed quantities this is identical to contract for a single fixed payment.

offers the free distributor a lower effective per unit price, the distributor cannot use this cost advantage to steal the competitor's market, since the fixed-quantity contract makes marginal cost equal to zero for the contracted distributor.

Matters are more complicated if final demand for the product is price elastic. Then the entrant may be able to make distributors take additional supplies by offering a sufficiently attractive wholesale price. Specifically, if the incumbent has signed a fixed-quantity contract with one of the distributors, the free distributor essentially becomes a monopolist with respect residual demand (i.e. total demand less the quantity offered by the contracted distributor), and will be willing to take the amount that maximizes profits in this segment. The incumbent may reduce the profitability of the free distributor by agreeing a larger quantity with the contracted distributor, but the incumbent will only be able to drive profits of the free distributor to zero by offering a quantity so large that the retail price is forced down to the wholesale price of the entrant. But this will lead to losses for the incumbent if the entrant is more efficient. Only in the case of a fixed cost of entry will the incumbent be able to exclude the entrant from the market through a fixed-quantity contract.

While fixed-quantity contracts are similar to exclusive-dealing agreements – and may sometimes even be a preferred instrument in a strategy of foreclosure or entry deterrence – the conditions under which they may be anti-competitive are essentially the same as for exclusive-dealing agreements; in particular, the incumbent must have a first-mover advantage, the entrant must not present at the time when the fixed-quantity contracts are signed, their duration must be so long that entrants are unwilling or unable to delay entry until the contracts expire, contracts must foreclose entry completely and the contractual parties must be committed not to renegotiate the contracts.

4.2 Exclusive Dealing or Quantity Rationing to Restrict Intra-brand Competition

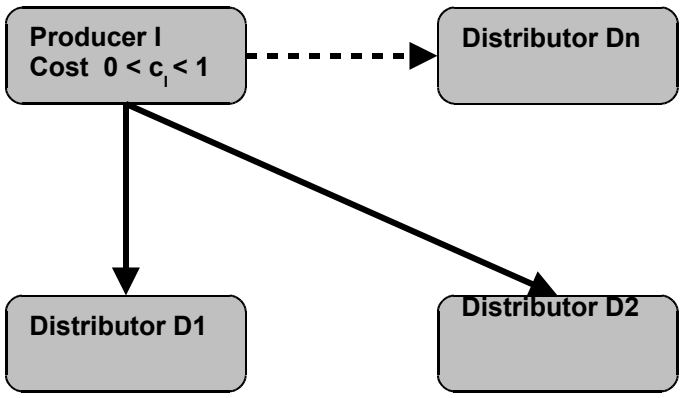
The discussion above concerned the ability of an upstream monopolist to use exclusive-dealing agreements, or quantity-forcing strategies, to restrict downstream competition by foreclosing the market to rival upstream manufacturers; that is, to restrict *inter-brand* competition. We now consider the question of whether exclusive-dealing agreements or maximum-quantity-fixing strategies can be used by an upstream monopolist to restrict *intra-brand* competition in the downstream market; in other words, to prevent the dissipation of monopoly rents due to competition between distributors or retailers to gain market share.

Once again the Chicago School, led by Bork (1978) and Posner (1976), argued that since there is only one source of monopoly profit, and that an upstream monopolist can already earn the entire monopoly profit without extending its market power downstream (via exclusive-dealing agreements or vertical integration), in the absence of efficiency gains exclusionary strategies cannot increase the profitability of the

upstream monopolist. This assumes however, that the upstream monopolist is able to exert its monopoly power without engaging in exclusionary practices.

This issue has been analyzed in some depth by Hart and Tirole (1990) and Rey and Tirole (2007) (see also Whinston 2006, 155-167). To provide a simple summary of this analysis, we will consider the situation depicted in Figure 4.3 below.

Figure 4.3: Commitment problem in Hart and Tirole (1990)



Assume a single upstream manufacturer *I* and initially just two downstream distributors (or retailers), ***D1*** and ***D2***. The manufacturer ***I*** again has constant unit costs equal to c_I.

Suppose first that the downstream distributors compete in separate geographic markets (or sell completely different products). Then by selling each downstream distributor the monopoly quantity Q_i^m for a fixed payment equal to the monopoly profit $(P_i^m - c_I)\, Q_i^m$ in each market, it is easy to see that I can extract all of the monopoly profit. That is, in the absence of any intra-brand competition, the Chicago argument holds.

Now consider the situation in which the two distributors compete to sell a homogeneous product in the same market, and assume that *I* does not engage in exclusive contracting, but attempts to obtain the full monopoly profits by simultaneously offering each distributor a fixed quantity equal to half the monopoly quantity, ½ Q^m, for a payment equal to half of the monopoly rents ½ π^m.[29] Would either distributor accept the offer?

[29] Alternatively ***I*** could offer to supply one distributor with Q^m in return for the entire monopoly rent. This would not change the conclusions of the analysis.

In absence of an ability on the part of ***I*** to commit itself to supplying no further quantity to either distributor, neither distributor will accept because ***I*** always has an incentive to offer more to ***D2*** say, once ***D1*** has accepted the offer. So the only *incentive compatible* offer that ***I*** can make is to offer each distributor half the Cournot quantity for half of the Cournot profits.

This result, due to Hart and Tirole (1990), highlights the commitment problem faced by the upstream monopolist supplier. Even though it is in a monopoly position, its inability to credibly commit itself provides incentives for opportunistic behavior and prevents it from achieving the monopoly outcome.[30]

As pointed out by Rey and Tirole (2007), this commitment problem becomes more severe the larger the number of downstream distributors. Indeed, the downstream retail price tends to marginal cost, and profits tend to zero, as the number of downstream firms becomes large.

In order to exert its market power the upstream monopolist therefore has an incentive to alter the structure of the downstream market. For example, excluding all downstream distributors but one through exclusive dealing can restore ***I***'s ability to sustain the monopoly price; exclusive dealing, which *de facto* monopolizes the downstream market, thus allows ***I*** to exert more fully its upstream market power.[31] Alternatively, ***I*** may want to integrate downwards with one of the downstream firms, in order to eliminate the temptation of opportunism and credibly commit itself to reduce supplies to downstream firms (Hart and Tirole, 1990).[32]

The above argument – and hence the rationale for exclusive dealing to contain intra-brand competition – relies on a number of assumptions, among which the most important is the inability of the upstream monopolist to commit to contractual terms. If the monopolist could commit – say by making contractual terms public – the incentive for exclusive dealing to contain downstream competition would disappear.

It may be noted that the inability of the upstream monopolist to commit to contractual terms is the exact opposite to the assumption made in the literature on exclusive-dealing arrangements to foreclose inter-brand competition; there the ability to commit not to renegotiate contractual terms was required for exclusive dealing agreements to be anti-competitive.

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30 Rey and Tirole (2007) note the similarity of this situation to that of a durable goods monopolist discussed in Coase (1972).

31 We define exclusive dealing here as an upstream firm's commitment not to deal with alternative downstream firms.

32 The monopolist may conceive still other ways of preserving the monopoly profit. For instance, as noted by O'Brien and Shaffer (1992), a market-wide resale-price maintenance (RPM), in the form of a price floor, together with a return option would obviously solve the commitment problem; O'Brien and Shaffer further show that squeezing downstream margins through individual price ceilings can also help eliminate the scope for opportunism.

4.3 Implications for Competition Policy toward Vertical Restraints

The brief survey above has provided some indication of the conditions under which dominant incumbent firms can use exclusive-dealing agreements, or quantity contracts, to prevent entry into their markets and reduce inter-brand or intra-brand competition. These conditions are quite restrictive. In particular:

1. There should be no rival upstream manufacturers who can expand production significantly without incurring large fixed costs, and potential entrants must be kept out completely i.e. the dominant firm must have a monopoly first-mover advantage, and foreclosure of competition must be complete. Otherwise distributors will lack incentives to accept exclusive agreements which foreclose competition.

2. There must be significant entry barriers into distribution; that is distributors need to be few in number, and it must be costly for rival producers to establish their own distribution networks or to find alternative distributors.

3. It must be impossible to renegotiate exclusive contracts once entry occurs, otherwise the value of the contracts may be undermined, and in some cases vitiated altogether.

4. Products should be highly differentiated or the market strictly separated into exclusive territories. When competition between buyers is limited, either because they are final consumers of the product or because they resell the product on separate markets, exclusion is relatively easy; if competition between buyers is vigorous, exclusion is possible only if the cost advantage of entrants is relatively small. Homogeneous products result in more intense downstream competition which can make foreclosure much harder.

5. The use of exclusive contracts to deter entry or restrict competition is more likely when the downstream contractors are final consumers rather than intermediate distributors or retailers.

6. Quantity contracts should be enforceable and publicly observable to alleviate the incentives of monopoly producers to supply additional quantities thus undermining their own monopoly power.

In addition, as emphasized in Section 2 above, where vertical restraints are used to lessen competition at some level of the vertical structure through foreclosing or disadvantaging rivals, prices to consumers should be higher and quantities sold lower than they would be in the absence of such restraints.

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