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VERTICAL RESTRAINTS AS

CONTRACT ENFORCEMENT MECHANISMS:

THE COORS CASE \*

by

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\* This paper originated while Klein served as a consultant to the Federal Trade Commission to study past actions brought by the Commission in the area of vertical restraints, including the Coors case. Klein later also served as a consultant to Coors. Neither the Federal Trade Commission nor Coors have reviewed or are responsible for any of the positions taken here. The authors are grateful to the Sloan Foundation grant to the University of California, Los Angeles for the study of contractual relationships for research support and to Armen Alchian, Roy Kenney and Stanley Ornstein for useful comments.

The commonly accepted economic efficiency rationale for vertical restraints is the avoidance of free riding by retail dealers in supplying "special services".<sup>1</sup> A manufacturer desires its dealers supply services, such as prepurchase product demonstrations. However, since services are costly for each dealer to provide and it is economical not to charge consumers separately for their provision, each dealer has an incentive to supply less than the desired amount of services. A free-riding dealer explicitly or implicitly encourages its consumers to obtain the services free of charge from full service dealers. A dealer who free rides in this way on dealers who provide full services obtains a competitive cost advantage and can increase its sales and profit by lowering price.

Exclusive territories and resale price maintenance appear to eliminate the free riding potential by eliminating nearby discount dealers. This interpretation is now generally accepted by economists and has made a major impact on the law.<sup>2</sup> However, acceptance of the standard special services free-riding argument has gone too far. A marketing arrangement which includes exclusive territories or resale price maintenance now produces the knee-jerk search for the special services that create a free

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<sup>1</sup>The term "special services" and the free riding potential regarding the supply of these services is presented in the now classic article by Lester G. Telser, "Why Should Manufacturers Want Fair Trade?" Journal of Law and Economics (October 1960), 86-109. Earlier articles that contain similar reasoning include T. H. Silcock, "Some Problems of Price Maintenance", 48 Economic Journal, 42 (1938), and F. W. Taussig, "Price Maintenance", 4 American Economic Review, Supplement, 170 (1916).

<sup>2</sup>The Supreme Court in Continental T.V., Inc. v. GTE Sylvania Inc., 433 U.S. 36, and 55 (1977) explicitly recognized the potential of non-price vertical arrangements such as exclusive territories to solve the distributor free riding problem. However, the court refused to extend the analysis to vertical price arrangements such as resale price maintenance.

rider possibility. The existence of special services has become not only a sufficient condition for economists and lawyers to demonstrate efficiency effects of vertical restraints, but also has become close to a necessary condition.<sup>3</sup>

The special service free-riding argument regarding vertical restraints has both theoretical and empirical difficulties. On the theoretical level it is not clear that vertical restraints solve the free-riding problem. Even if discount dealers are absent, it is not obvious that dealers will provide the quantity and type of special services desired by the manufacturer. A profit maximizing dealer operating under resale price maintenance is likely to engage in non-price competition with the greatest direct value to consumers. There is no reason for such non-price competition to entail the special services. For example, a dealer can supply a free gift with the product and continue to permit the consumer to free ride on other full service dealers. Resale price maintenance, by itself, will not assure the supply of the desired special services.

On the empirical level, the standard special services argument does not appear to explain many observed cases of vertical restraints.

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<sup>3</sup>For example, Richard A. Posner, "The Rule of Reason and the Economic Approach: Reflections on the Sylvania Decision," 45 U. Chi. L. Rev. (1977), includes specification of the particular special services involved in the marketing arrangement under investigation as a required step in the procedure to apply the rule of reason criteria of Sylvania. Also see Robert H. Bork, "Vertical Restraints: Schwinn Overruled," Supreme Court Review (1977), 171-92. Posner has more recently argued for the adoption of a per se legal approach to these practices (Richard A. Posner, "The Next Step in the Antitrust Treatment of Restricted Distribution: Per Se Legality," 48 U. Chi. L. Rev. 6 (1981)).

While there are recent examples, such as Apple computers and Minolta cameras, that appear to fit the special services free-riding paradigm,<sup>4</sup> many other products, such as Levi Strauss blue jeans, do not appear to require special services.<sup>5</sup> It is difficult to imagine the "special services" supplied by a department store selling jeans that are not also generally supplied by a discount store selling the same jeans. While Levi Strauss did not want their jeans sold in the discount store, it seems highly unlikely that they were motivated by the notion, for example, that the presence of free-riding consumers who first use the fitting rooms in a full-service department store to determine one's size before purchasing the jeans at a discount store which does not maintain dressing rooms.

Once we recognize that the existence of special services appears to be significantly rarer than the "new economic learning" maintains, it is understandable why some economists and lawyers have adopted the contrary position that resale price maintenance is generally anticompetitive in purpose.<sup>6</sup> A more general theory of the economics of vertical restraints is necessary if the cases that do not fit the standard special services

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<sup>4</sup>O.S.C. Corp. v. Apple Computer, Inc., 601 F. Supp. 1274 (C.D. California 1985) and Interphoto Corp. v. Minolta Corp., 295 F. Supp. 711 (S.D. New York), aff'd, 417 F. 2d 621 (2d Cir. 1969).

<sup>5</sup>FTC v. Levi Strauss & Co., D-9081 (7-12-78) and subsequent State actions. Long lists of products that have employed resale price maintenance, many of which have no apparent special services associated with their sale, can be found in W. G. Bowman, Jr., "Prerequisites and Effects of Resale Price Maintenance," U. Chi. L. Rev. 825 (1955), 833-835, in the Report of the Federal Trade Commission on Resale Price Maintenance 498, and in Claudius T. Murchison, "Resale Price Maintenance," Columbia University Studies in History, Economics and Public Law, 82(2) (1919), 415-421.

<sup>6</sup>See Scherer (1980), p. 493, n 103 and Robert Pitofsky, "Why Dr. Miles Was Right," Regulation, January/February 1984.

paradigm are to be explained as efficient marketing arrangements rather than rationalized with empirically irrelevant free-riding scenarios.

This paper provides an economic framework for understanding the role of vertical restraints that addresses the two major problems with the standard special services argument. It solves the theoretical problem of how vertical restraints induce distributors to supply desired services and thereby eliminate the "free-riding" problem, and it is applicable to a great many observed cases of vertical restraints that do not "fit" the standard paradigm.

We begin our analysis by describing the basic facts of the Coors case. This case provides an empirical framework and motivation for our subsequent analysis by illustrating the general nature of the contract enforcement problem faced by manufacturers that wish to have distributors provide product specific services when desired distributor performance can be monitored by the manufacturer but is prohibitively costly to specify with an explicit contract that can be enforced by a court. The case also provides an example of how a particular manufacturer employed vertical restraints on the wholesale and retail level to solve this contract enforcement problem. The solution adopted by Coors is consistent with our theory of the economic role of vertical restraints in assuring performance within a two-party contract enforcement environment. Vertical restraints, such as resale price maintenance and exclusive territories, are shown to create a premium stream for the distributor which is lost upon manufacturer termination. The potential sanction created by a vertical restraint thereby

gives the manufacturer the ability to assure the supply of desired dealer services.

## I. THE COORS CASE

Coors, a producer and marketer of beer in the Western United States, was charged by the Federal Trade Commission in 1970 for their use of exclusive territories and maximum resale price maintenance at the wholesale level and minimum resale price maintenance at the retail level.<sup>7</sup>

The major service that must be provided by wholesalers and retailers of Coors beer is related to the unique production process employed by Coors. In general, after the brewing and aging of a beer is complete the product contains live microorganisms. The usual production process then employs pasteurization to produce a sterile product which cannot spoil easily. This involves heating the beer, already in bottles or cans, to extremely high temperatures for a very short period of time. In place of pasteurization, which causes some loss of flavor, Coors developed the

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<sup>7</sup>In the matter of Adolph Coors Company, FTC Docket no. 8845. Also see Adolph Coors Co. v. FTC, 497 F. 2d 1178 (10th Cir. 1974), cert. denied, 419 U.S. 1105 (1975). The Federal Trade Commission also claimed that Coors had unfair termination provisions with its wholesalers (termination with cause on five days notice and without cause on thirty days notice) and that they prevented their wholesale distributors from selling to central warehouse accounts of grocery chains. Wholesale distributors could only sell to the individual stores of the grocery chains located in their assigned territory. In addition, Coors was charged with encouraging their wholesalers to maintain exclusive dealing arrangements with their retail draft accounts, requiring Coors to be the only light beer on draft. For further discussion of the litigation see Andrew McLaughlin, "An Economic Analysis of Resale Price Maintenance," unpublished UCLA Ph.D. dissertation, May 1979 and Lynn Topel, "An Economic Analysis of Exclusive Dealing Arrangements," unpublished UCLA Ph.D. dissertation, August 1984.

sterile fill or aseptic brewing process. This process controls the amount of live bacteria in the bottled beer by boiling the malt extract with the hops to produce a sterile wort and, from that point on, enclosing the product in a sterile, refrigerated system.

It is important to recognize that all beer, even if pasteurized, deteriorates on the shelf over time at room temperature and that deterioration accelerates at increased temperatures. This is due primarily to the nature of the chemical reaction which occurs over time between the beer and the oxygen which is entrapped in the can or bottle during packaging. However, Coors beer, because it is unpasteurized, deteriorates more rapidly at room temperature. Hence, like unpasteurized draft beer which is shipped in chilled barrels and marketed under refrigerated conditions, Coors must be kept refrigerated to maintain its quality. Coors is essentially draft beer sold in bottles and cans. Non-pasteurization creates a product with a higher expected quality but with a greater potential for quality deterioration.

In order to control the quality deterioration problem, Coors developed a system of "Controlled Temperature Marketing" which attempted to control for the two major conditions, heat and time, that influence quality deterioration. A concept of "Beer Heat Units" (BHU), which attempted to measure the degree of flavor reduction of the beer as a positive function of the time between production and sale of the product and the temperature at which the beer is stored until sale, was used to provide guidelines to distributors. Coors maintained that their beer should be marketed to

consumers within specified BHU guidelines.<sup>8</sup> To accomplish this Coors beer was shipped by refrigerated trucks and insulated rail cars to distributors who were required to have refrigerated warehouses. Retailers were also encouraged to refrigerate and a strict policy of product rotation and limited inventories was followed, with distributors required to visit every account once a week.<sup>9</sup>

The marketing system created by Coors requires that refrigeration and product rotation services must be provided by retailers and wholesale distributors of Coors beer. Although these services are costly for wholesalers and retailers to provide and there is likely to be some shirking on the provision of these services by retailers and wholesalers, the services do not fit the special services "free-riding" paradigm. It is not possible for consumers to receive a "complete" product by first obtaining the refrigeration services separately and free of charge from a retailer refrigerating the beer and then purchasing the beer at a discount price from a retailer that does not refrigerate it. The standard special services free riding does not appear to be present in this case and, therefore, cannot serve as an explanation for the vertical restraints adopted by Coors. Refrigeration and product rotation in the Coors case are examples of services that will not be provided in the desired amounts by independent distributors unless the manufacturer constrains distributor

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<sup>8</sup>See Beer Quality and Refrigerated Marketing, statement by Jeffrey H. Coors to the Annual Distributors' Meeting of March 1, 1977.

<sup>9</sup>If retail refrigeration space was not available, retailers were required to have a strict product rotation policy and maintain even more limited inventories, with distributors recommended to service such accounts twice weekly. See Beer Quality and Refrigerated Marketing, p. 8.



behavior in some way, but are examples of services where consumer free-riding is not possible.

## II. DISTRIBUTOR PERFORMANCE

The facts of the Coors case suggest that the free riding problem is more general than what is suggested by the special services paradigm. A potential problem exists whenever distributors have any control over the ultimate quality of a manufacturer's product.<sup>10</sup> For example, in the Coors case there is the possibility that distributors can supply a low quality product by shirking on the supply of refrigeration services. Such a problem exists if consumers cannot detect quality deterioration pre-purchase and if consumers that receive a low quality product do not accurately blame the particular distributor for the poor quality. If consumers attribute, at least partially, the poor quality to the product generally, i.e., to the manufacturing process, then a distributor that shirks on supplying quality inputs imposes an external cost on the other distributors and on the manufacturer of the product.

Given imperfect attribution by consumers for poor quality supply, externalities will be present between distributors whenever consumers purchase from more than one distributor. Since the quality services provided by one distributor will affect the demand facing not only that distributor but the demand facing all distributors that the consumer

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<sup>10</sup>While the Coors case deals with both wholesalers and retailers of beer, in our subsequent analysis we will refer to both wholesalers and retailers simply as "distributors".

purchases from, each distributor will have an incentive to provide less than the optimal amount of quality services.<sup>11</sup>

Even when consumers are assigned to particular distributors, an externality will be present between each individual distributor and the manufacturer. Distributors may have an incentive to "shirk" on product quality as long as buyers cannot fully detect quality deterioration pre-purchase. Whether consumers blame the manufacturer or the assigned distributor for the poor quality, there will be some lag in the downward adjustment of demand during which the distributor can reap a short-run return. Although it may not be wealth maximizing for the manufacturer to shirk on quality in the short-run and lose sales in the long-run,<sup>12</sup> it may be wealth maximizing for the distributor to do so. In either case, customer assignment or not, the manufacturer faces decreased demand if he allows quality deterioration by distributors to occur.

An obvious question is why consumers "blame" the manufacturer and decrease demand for the product generally when they receive a poor quality product from a particular distributor. One answer is that product quality is determined by inputs such as refrigeration and rotation that are supplied at both the manufacturing and distributor levels. Hence, consumers would assign some probability that a poor quality product resulted from

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<sup>11</sup>This is the "superhighway" problem analyzed in the franchising context by Klein and Saft, "The Law and Economics of Franchise Tying Arrangements," 28 J. Law & Econ. 345, p. 350.

<sup>12</sup>See Benjamin Klein and Keith Leffler, "Non-Governmental Enforcement of Contracts: The Role of Market Forces in Assuring Contractual Performance," 89 J. Polit. Econ. 615 (1981).

problems at the manufacturing level that may persist in the future. Consumers would then rationally reduce quality expectations and future demand accordingly.<sup>13</sup>

An alternative answer that makes economic sense is that, even if consumers believe that product quality is determined entirely by distributors, they are reacting to the poor job the manufacturer has done in monitoring the quality supplied by an individual distributor by reducing the demand for the manufacturer's product. The consumer reduces his demand for the product not because he wants to punish the manufacturer but because he now has information that manufacturer policing of the distribution arrangement is poor. Hence, the consumer expects other distributors of the product are also likely to shirk on quality.

Manufacturers such as Coors that understand the profit incentives facing individual distributors and the costs they bear from non-performing distributors have an incentive to find contractual or marketing arrangements that induce distributors to provide the desired level of product specific

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<sup>13</sup>Consumers may not even be aware of the distributor's role in determining product quality, mistakenly assuming that poor quality products are entirely due to manufacturing problems, and the manufacturer may actually encourage this misconception. For example, at the time of the litigation Coors did not advertise the fact that the product was not pasteurized and refrigeration was required. Although dissemination of such information may assist the manufacturer in their quality monitoring effort, the cost in terms of lower demand due to increased consumer uncertainty or increased selling costs (for example, from an increase in shelf stocking frequency and the necessity for wholesaler pick-ups of old merchandise if the beer were "open dated" as the FTC suggested as a possible solution) is likely to more than outweigh the monitoring cost saving. In fact, union groups that organized boycotts of Coors at the time purchased newspaper ads informing consumers that Coors was not pasteurized.

services such as refrigeration and product rotation. In the simplest framework manufacturers can be thought of as contracting directly with distributors for the provision of these services. However, as we shall see, when such contracts are infeasible due to contracting costs or other informational problems, other means of securing distributor performance, including vertical restraints, will be employed.

### III. COSTLESS CONTRACTUAL ENFORCEMENT: A BENCHMARK

Before investigating how vertical restraints, such as exclusive territories and resale price maintenance, operate to enforce distributor performance, we begin our analysis by considering a benchmark case where distributor supply of the necessary services can be specified contractually by the manufacturer and costlessly enforced by the court. Under these conditions vertical restraints are unnecessary. To see why, consider the following analysis.

Distributors are assumed to be making expenditures on "quality service inputs",  $S$ , which affect the quality of the product consumers receive and have a positive effect on the overall demand for the manufacturer's product. Therefore, the quantity demanded,  $Q$ , of a manufacturer's product is given by

$$(1) \quad Q = D(P, S),$$

where  $P$  is the price of the manufacturer's product and  $S$  is the per-unit expenditures made by distributors on quality service inputs. It is assumed that  $dQ/dP < 0$  and  $dQ/dS > 0$ .

It is further assumed that the market for distribution is perfectly competitive, with a large number of price taking distributors selling directly to final consumers.<sup>14</sup>

In this case of costless contractual enforcement, the manufacturer can simply specify contractually the desired (high) level of distributor quality inputs,  $S_h$ , and allow competition to occur among the distributors. Competition will drive the retail-wholesale price gap down to the level of the representative distributor's minimum average cost and the potential contractual court imposed sanction of the arrangement will guarantee supply by distributors of the desired level of quality services.

This perfectly competitive, costless enforcement equilibrium solution is represented in figures 1A and 1B. Figure 1B represents the market demand for the manufacturer's product  $D_m(P, S_h)$ , which we assumed depends on price and on the per-unit level of quality services supplied by the distributors. For expositional simplicity we assume that the manufacturer has a constant marginal cost of production, which we denote  $MC_M$ .

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<sup>14</sup>This assumption is not necessary, but simplifies the exposition. For example, it allows us to consider the problems faced by Coors on the wholesale and retail levels independently.

Figure 1  
 PERFECTLY COMPETITIVE DISTRIBUTION EQUILIBRIUM

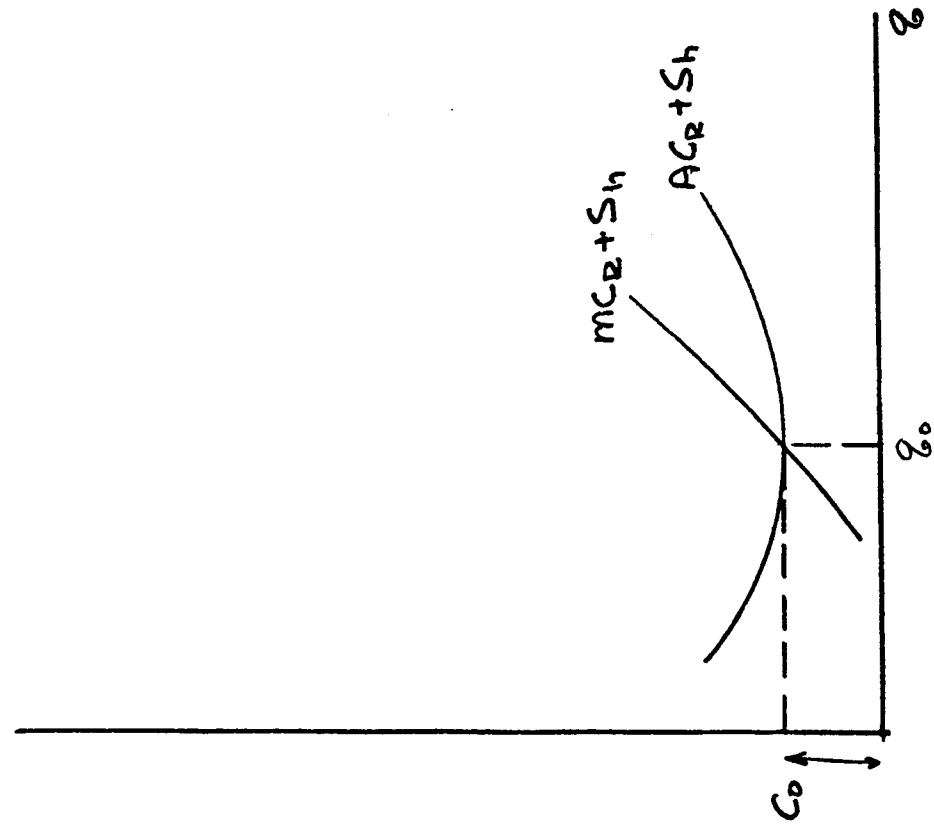


Figure 1A

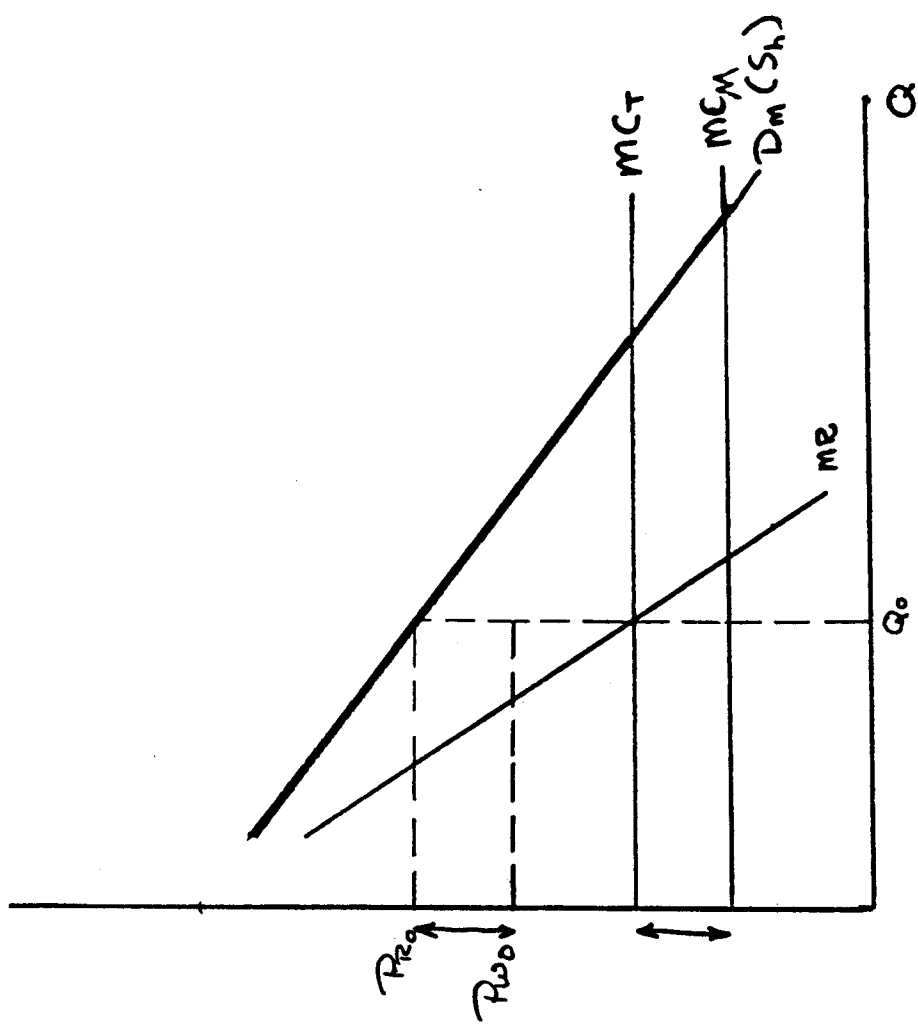


Figure 1B

Figure 1A depicts a representative distributor's costs of marketing the manufacturer's product to consumers with the contracted level of quality services,  $S_h$ . We assume that distributors have costs of selling the product as well as per unit costs of supplying the quality services. Total distribution costs are assumed to be related to the quantity of the product supplied, but are independent of the level of quality services provided. The minimum average cost of distribution,  $C_0$ , determines the competitive gap between retail and wholesale prices, with efficient distributor size,  $q_0$ , determining the equilibrium number of distributors.

We assume that there are a sufficiently large number of potential distributors with costs as given in Figure 1A. Therefore, in figure 1B, the manufacturer adds to the constant marginal cost of production,  $MC_M$ , the constant marginal cost of selling his product through competitive retailers,  $C_0$ , to obtain the total marginal cost of producing and selling his product,  $MC_T$ , where  $MC_T = MC_M + C_0$ . The manufacturer's output,  $Q_0$ , is determined where the marginal revenue schedule,  $MR$ , intersects marginal cost,  $MC_T$ . This implies a profit maximizing retail price of  $P_{R_0}$  and, given the competitive costs of supplying distribution, including the cost of providing the contractually specified level of quality services, a profit maximizing wholesale price,  $P_{W_0}$ , equal to  $P_{R_0} - C_0$ .

Under our assumptions that distribution is perfectly competitive and that contracts are costlessly specified and enforced, the manufacturer need specify contractually only the desired amount of distributor quality services,  $S_h$ , and set the profit maximizing wholesale price,  $P_{W_0}$ .

Competition among distributors implies that consumers will receive the high quality product at the price of  $P_{R_0}$  and the manufacturer will receive the maximum level of profits possible. Further, given consumer demand of  $Q_0$  at  $P_{R_0}$ , there will be  $n_0$  distributors supplying the manufacturer's product at the minimum average cost of distribution, where  $n_0 = Q_0/q_0$ . A manufacturer such as Coors can achieve the profit maximizing price to consumers and guarantee that the high quality product will be supplied without the use of vertical restraints.

#### IV. EXCLUSIVE TERRITORIES WITH COMPETITIVE MAXIMUM RESALE PRICES

The assumption that fully contingent contracts can be costlessly written and enforced, while analytically convenient, falls far short of describing most real transactional relationships. Therefore, we take as the starting point of our applied analysis, as the standard special services economic analysis also implicitly does, that it is not economically feasible for the manufacturer to write an explicit, enforceable contract with the distributor for the supply of quality service inputs. Specifically, we assume that while the manufacturer can observe distributor performance (subject to monitoring costs or imperfect measurement), this information cannot be transmitted effectively to a third party enforcer such as a court.<sup>15</sup> Particular performance, such as the actual amount of

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<sup>15</sup>On the contrary, the standard principal-agent problem identifies enforcement difficulties with imperfect manufacturer monitoring, i.e., asymmetrical information between the transacting parties, and assumes that any aspect of performance that is observed by both parties can be an element of a costlessly enforceable explicit contract. See, for example, O. Hart and B. Holmstrom, "The Theory of Contracts," MIT Department of Economics working paper #418, March 1986. This implicitly assumes that any



distributor inputs, may be prohibitively costly to measure and contractually specify in a way that contractual breach and the extent of damages can be proven to the satisfaction of the court. In the case of a distributor shirking on the supply of quality inputs, assessing damages entails the extremely difficult task of determining the length of time the shirking has occurred and convincing the court about the magnitude of the effect of the shirking on the future profits of the manufacturer.

When contracts are less than complete and court sanctions are not costlessly imposed, distributor performance must be assured not by a third-party (court) enforced contract but by a two-party (self) enforced contract that may entail unusual terms such as vertical restraints.<sup>16</sup> The standard argument of the way in which a vertical restraint such as an exclusive territory marketing arrangement creates the proper incentive for distributors to provide the necessary quality services is via the de facto assignment of customers to particular distributors. If consumers can

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information available to both transacting parties is also available to the court. The two-party enforcement mechanism that we outline in this paper avoids the malincentives associated with using an enforceable proxy variable for the information that is known to the transactors but cannot be written in a contract. In particular, two party enforcement avoids the incentive for individuals to maximize the proxy rather than the desired performance when the relationship between the proxy and desired performance can be influenced by the individual. By using an implicit (but not court enforced) contractual "understanding" between the two parties regarding the jointly observable aspect of performance individual returns are linked directly to individual performance.

<sup>16</sup>The distinction between court enforced and self enforced contracts is made in B. Klein, R. G. Crawford and A. A. Alchian, "Vertical Integration, Appropriate Rents and the Competitive Contracting Process," 21 J. Law & Econ. 297 (October 1978) and extended to explain unusual contract terms such as franchise agreements in B. Klein, "Transaction-Cost Determinants of 'Unfair' Contractual Arrangements," 70 Am. Econ. Rev. Papers & Proc. 356 (1980).

purchase from multiple distributors, part of the cost of reduced future demand caused by a shirking distributor will be born by other distributors and the manufacturer. Exclusive territories restricts consumer mobility across distributors and, by increasing the repeat purchase probability, concentrates the effect on the responsible distributor. An exclusive territory arrangement that assigns each buyer to a particular distributor eliminates inter-distributor consumer mobility completely. Externalities between distributors, by definition, do not exist under such an arrangement.

In general, however, exclusive marketing territories do not necessarily imply complete customer assignment. A customer who receives, for example, a product demonstration from a full service retailer may then place a telephone or mail order with a discount retailer many miles away. This problem is less severe at the wholesale level, where at a reasonable cost manufacturers can assign customer accounts to particular distributors. Coors, in fact, created such a perfect exclusive territory arrangement at the wholesale level but not the retail level of marketing and policed it vigorously. In particular, because of the extremely low incentive for distributors to refrigerate beer that is to be transshipped to low probability of repeat sale consumers located outside of their assigned territory, Coors denied distributors the right to ship beer into other distributors' territories and terminated distributors that did so.<sup>17</sup>

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<sup>17</sup>After the FTC decision Coors adopted contracts with their wholesale distributors that included area of prime responsibility provisions. These provisions have, since Sylvania, been upheld as legal and important elements for improving the quality of the product. See Maykuth v. Adolph Coors Co., 690 F. 2d 689 (9th Cir. 1982), Mendelovitz v. Adolph Coors Co., 693 F. 2d 570 (5th Cir. 1982), and Del Rio Distributing, Inc. v. Adolph Coors Co., 589 F. 2d 176 (5th Cir.), cert. denied, 444 U.S. 840 (1979).

In a perfect (consumers fully assigned to particular distributors) exclusive territory arrangement, each distributor faces a demand curve which is the market demand of his assigned customers. Therefore, by instituting such an arrangement the manufacturer creates market power on the distributor level and, hence, a "successive monopoly" problem. The manufacturer, who can be thought of as implicitly purchasing "distribution" services from distributors, has created an arrangement where he must now "pay" a monopoly price for these services. However, the manufacturer can solve the successive monopoly problem with maximum resale price maintenance, creating a situation similar to what would occur under perfect competition conditions.<sup>18</sup>

This solution is illustrated in Figure 2, which converts the distributor cost (or  $P_R - P_W$ ) scale of Figure 1A to the retail price ( $P_R$ ) scale of Figure 1B by adding the profit maximizing wholesale price,  $P_{W_0}$ , to the distributors' costs. The manufacturer, by choosing the optimal number of exclusive distributors,  $n_0$ , and by setting a maximum resale price equal to  $P_{R_0}$ , guarantees that distribution is accomplished at minimum cost and

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<sup>18</sup>When legal restrictions prevent a manufacturer from imposing maximum resale price maintenance to solve the successive monopoly problem, he may modify the exclusive territory somewhat by using the threat of sales from distributors in other territories. If the manufacturer requires that inter-territory sales may occur only at a specified list price, the manufacturer creates an effective maximum price that distributors can charge customers in their territory without eliminating the benefits of exclusive territories. This may explain the marketing arrangement unsuccessfully challenged in Eastern Scientific Co. v. Wild Heerberg Instruments, Inc., 572 F.2d 883, (1st Cir.), cert. denied, 439 U.S. 833 (1978).

Figure 2

DISTRIBUTOR EXCLUSIVE TERRITORIES AND MAXIMUM  
RESALE PRICE MAINTENANCE

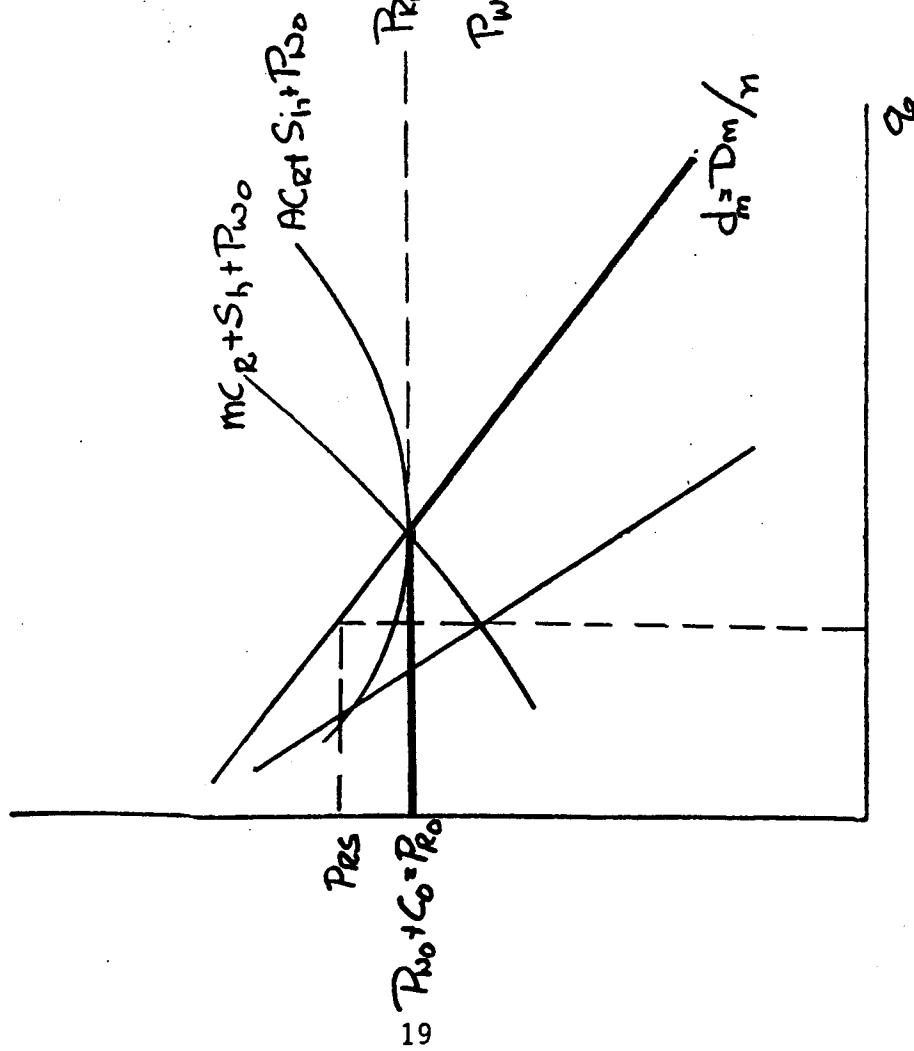


figure 2A

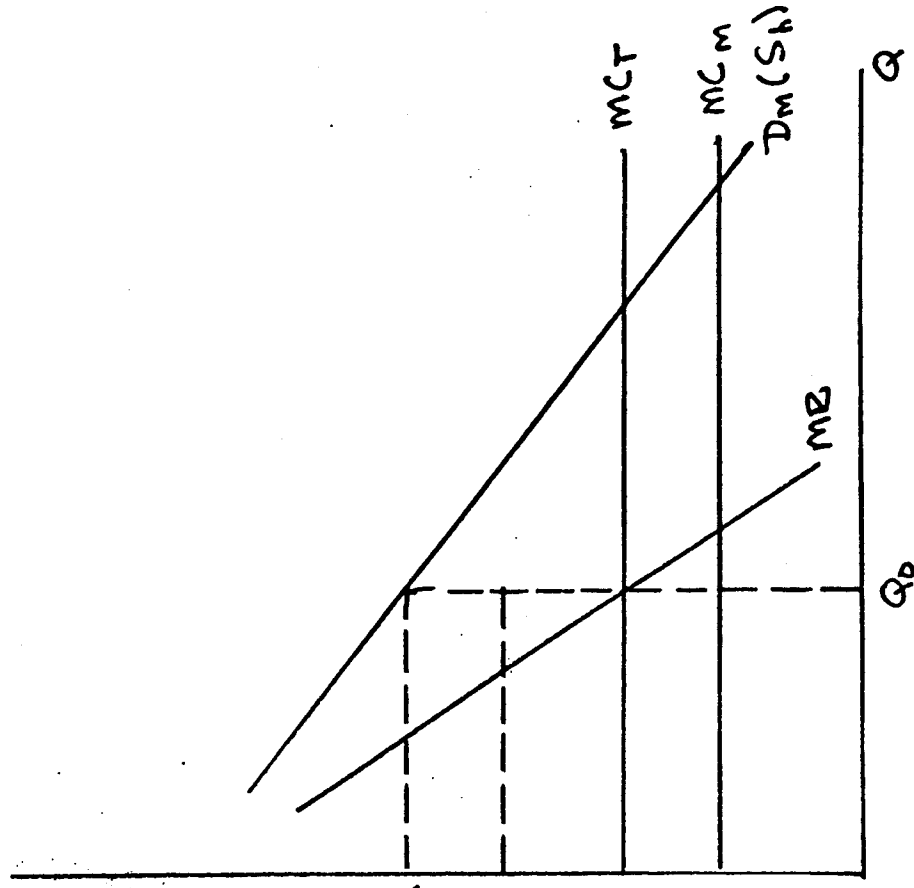


figure 2B

that distributors earn no monopoly profits. Each distributor has an incentive to increase price above  $P_{R0}$  to the successive monopoly price  $P_{RS}$ , but is prevented from doing so by the maximum resale price maintenance at  $P_{R0}$ . Therefore, with customer assignment each distributor has no ability to free ride on other distributors and, with maximum resale price maintenance at the competitive distribution level, has no ability to take advantage of any market power. Manufacturers appear to have the best of both worlds -- competitive prices for distribution services and monopolistic distributor customer assignment to prevent inter-distributor shirking. However, as we shall see, an exclusive territory marketing arrangement with maximum resale price maintenance at a competitive level does not solve the problem of assuring that high quality services will be supplied by distributors.

#### V. EXCLUSIVE TERRITORIES AS A PREMIUM GENERATING MECHANISM

While an exclusive territory arrangement eliminates the quality shirking problem across distributors, it does not solve the quality shirking problem between distributors and the manufacturer. As noted above (section II), even with complete customer assignment a distributor can achieve a short run gain by cutting quality and earning an extra return today at the expense of sales in the future. In order for the threat of lost future sales to prevent the distributor from cutting quality, the loss of future sales must be costly to him. If maximum resale price maintenance squeezes the distributor's return from supplying high quality services to the competitive level, the loss of future sales may not be a costly

sanction. For the threat of loss of future sales to be an effective deterrent the distributor must be earning a premium or quasi-rent above his opportunity cost on high quality sales.<sup>19</sup>

Most contractual arrangements are chosen so that at least some elements of performance are enforced by the threat of termination of the transactional relationship and the loss of a future premium stream associated with the relationship. Such "two party" contract enforcement economizes on the transaction costs of writing and enforcing explicit third-party enforceable contracts, including the real resources expended in the wasteful (purely redistributive) attempts to discover contingencies, to draft contract terms, and to maneuver post-contract in a manner so as to take advantage of one's transacting partner. These potential gains are weighed against the costs associated with a two-party contract of paying quality-assurance premiums and the possibility that inefficiently large "brand name" (firm specific, nonsalvageable) investments will have to be made.<sup>20</sup>

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<sup>19</sup>Once again it may be useful to note that within our two-party enforcement framework the capital cost associated with the loss of a future premium stream cannot be a penalty clause in a court-enforced contract because the court cannot observe distributor shirking to determine if the sanction should be imposed. Within the context of costless third party enforcement represented in the standard principal agent literature, premiums exist with penalty clauses only if there is a bankruptcy constraint which would permit the agent to avoid the court imposed sanction. See, for example, D. Sappington, "Limited Liability Contracts Between Principal and Agent," 29 J. Econ. Theory, 1 (1983).

<sup>20</sup>See B. Klein and R. Kenney, "Contractual Flexibility," UCLA working paper, December 1985, for a more general theoretical discussion of this optimizing process and the role of contract law in minimizing these costs.

If a manufacturer chooses to rely on a two-party contract enforcement mechanism, where the threat of termination of the business relationship prevents nonperformance, rather than on a third-party contract enforcement mechanism, where the threat of damages assessed by litigation prevents nonperformance, then a future expected premium must be created. Our model of two party (premium-termination) contract enforcement for the supply of distributor services is similar to that given in Klein and Leffler, where consumers attempt assure quality supply via a two party enforcement mechanism by paying higher than perfectly competitive prices.<sup>21</sup> Our manufacturer is analogous to the quality demanding consumers and our distributor is analogous to the quality supplying firm of that earlier model. The manufacturer is attempting to assure via a two party enforcement mechanism that the distributor supplies a desired level of quality service inputs,  $S_h$ . Because quality service inputs are costly for the distributor to provide and increase the demand facing not only the individual distributor but facing the manufacturer generally, a short-run profit maximizing distributor has an incentive to shirk on supplying these inputs. In particular, we assume that shirking distributors would supply only a "low" level of quality service inputs,  $S_l$ , equal to the minimum level of quality service inputs that can be supplied without being detected by consumers pre-purchase. It could, as in the case of Coors refrigeration services, be equal to zero.

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<sup>21</sup>B. Klein and K. Leffler, "The Role of Market Forces in Assuring Contractual Performance," 89 J. Polit. Econ. 615 (1981).

The incentive for distributors to shirk implies that either the manufacturer or consumers must police distributors to insure that the desired level of quality service inputs is supplied. As in the Klein-Leffler model, where consumer termination of purchases from the firm represents the sanction for nonperformance, a two party contract can assure distributor performance only if termination of the distributor by the manufacturer or consumers imposes a capital loss on the distributor which is greater than his expected short-run gain from shirking on the supply of these inputs. This condition will be met when the expected present discounted value of the future quasi-rent stream earned by an honest distributor is greater than his expected short-run shirking potential. The capital loss that can be imposed on the quality cheater by the withdrawal of the expected future quasi-rent stream is then sufficient to assure performance.

In our analysis we assume that the manufacturer can monitor distributor performance more effectively than consumers. The greater effectiveness of manufacturer policing reduces the distributors' gain from shirking on quality service inputs and hence limits the required premium stream. This cost advantage leads the manufacturer to act as the consumers' agent in monitoring distributor performance.<sup>22</sup>

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<sup>22</sup>The manufacturer is assumed to monitor distributor performance more effectively because the manufacturer may deal with distributors more frequently than individual consumers and has a greater stake and can impose a larger cost on a distributor than any individual consumer. In addition, the manufacturer has an incentive to maintain a reputation for terminating shirking distributors (so as to prevent other distributors from shirking) because his actions, as opposed to individual consumers, are communicated more effectively in the marketplace.



If the distributor's assumed perpetual rate of profit (quasi-rents) from providing the high level of quality inputs is  $\pi_h$  and the interest rate is  $r$ , then the capital value (above opportunity cost) from continued high quality performance is

$$(2) \quad W_h = \pi_h/r.$$

A wealth maximizing distributor will provide the high level of quality when the capital value of continued high quality performance,  $W_h$ , exceeds the expected short run cheating gain from providing low quality, which we denote by  $W_\ell$ , or when

$$(3) \quad \pi_h/r > W_\ell.$$

The rate at which distributor shirking can be detected and distributors can be terminated will determine the capital value from shirking,  $W_\ell$ . Specifically, if we assume that for a given level of monitoring expenditures the manufacturer can detect and terminate shirkers after  $t$  periods, then  $W_\ell$  will be given by

$$(4) \quad W_\ell = \frac{[1 - e^{-rt}]}{r} \pi_\ell,$$

where  $\pi_\ell$  represents the distributor's per period return from providing quality service inputs at the low quality level,  $S_\ell$ . Since the distributor saves the cost difference between low and high quality services, i.e.,  $S_h - S_\ell$

per unit, the distributors per period return when shirking,  $\pi_l$ , will exceed the per period return to high quality performance,  $\pi_h$ . Equation (4) implies that if  $\pi_h$  equals zero, that is, the distributor earns no quasi-rents, then the distributor will always cheat on quality in spite of the manufacturer's monitoring efforts. Therefore, the exclusive territory-maximum resale price equilibrium described above, which eliminates all profit for distributors, will not be viable.<sup>23</sup>

In order to induce the distributor to supply a high level of quality services in a world with significant contracting costs and the associated necessity for two party enforcement, the manufacturer must allow distributors to earn future receipts sufficiently in excess of future costs when producing the high quality product. A premium or quasi-rent stream to the distributor must exist so that the threat of termination by the manufacturer for nonperformance implies a sufficient expected capital loss to the distributor to assure his performance.

The magnitude of the minimum premium necessary to assure distributor performance can be computed by equating the returns to shirking and honest distributor performance, which yields

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<sup>23</sup>The exclusive territory-competitive maximum resale price equilibrium will be viable if it entails a sufficient level of investments by the distributor that are specific to the manufacturer. If a sufficient level of quasi-rents that would be lost upon manufacturer termination exists, the distributor need not earn a true profit. The performance assuring quasi-rent stream would be a normal rate of return on the distributor's specific investment. When such fully productive specific investments exist, the need for vertical restraints may be eliminated. However, to indicate the economic role of vertical restraints, we assume throughout that an insufficient level of specific productive investments is made by the distributor.

$$(5) \quad \pi_h = r W_\ell = [1 - e^{-rt}] \pi_\ell$$

Equation (5) simply states that the premium stream,  $\pi_h$ , must represent a normal rate of return on the expected profits from cheating on product quality. Hence, the magnitude of the necessary premium stream depends directly on the associated increase in distributor profits from cutting product quality, determined by the cost difference between supplying high quality,  $S_h$ , and low quality,  $S_\ell$ .

One way for a manufacturer to create a quasi-rent stream sufficient to guarantee quality performance is to employ exclusive territories as in the previous section but, instead of imposing competitive maximum resale price maintenance, to let the distributors earn some of the "monopoly" rents associated with assigned customers. Manufacturer assignment of an exclusive territory thereby creates a valuable asset for the distributor that can be lost upon termination. In terms of our previous analysis (Figure 2), the manufacturer can be thought of as imposing maximum price maintenance at the same profit maximizing level,  $P_{R0}$ , so as to keep the output at the same level,  $Q_0$ . The number of distributors can also be kept at the same level,  $n_0$ , so that each distributor's share of the total market will be at the same optimum (minimum cost) point on the distribution cost function,  $q_0$ . However, as Figure 3 illustrates, the manufacturer must now lower the wholesale price from  $P_{W0}$  to some point, say  $P_{W1}$ , where the rents earned by the distributor are sufficient to assure that the desired high level of quality services will be supplied. To assure distributor

Figure 3

THE GENERATION OF A DISTRIBUTOR PREMIUM

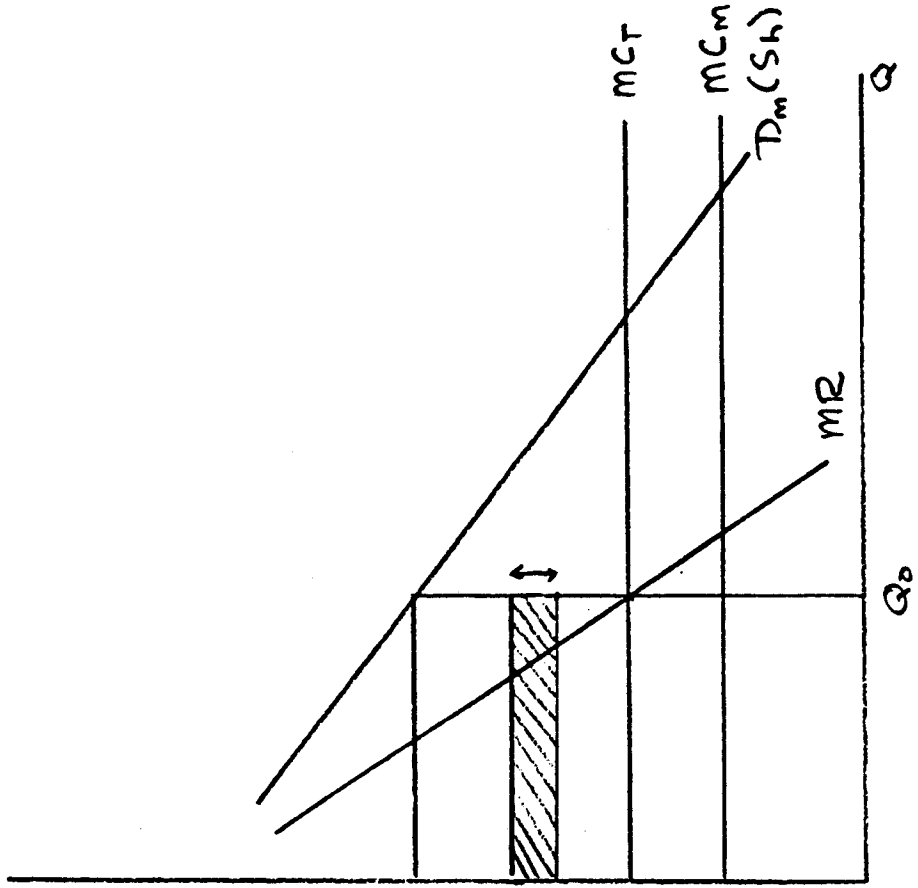


Figure 3B

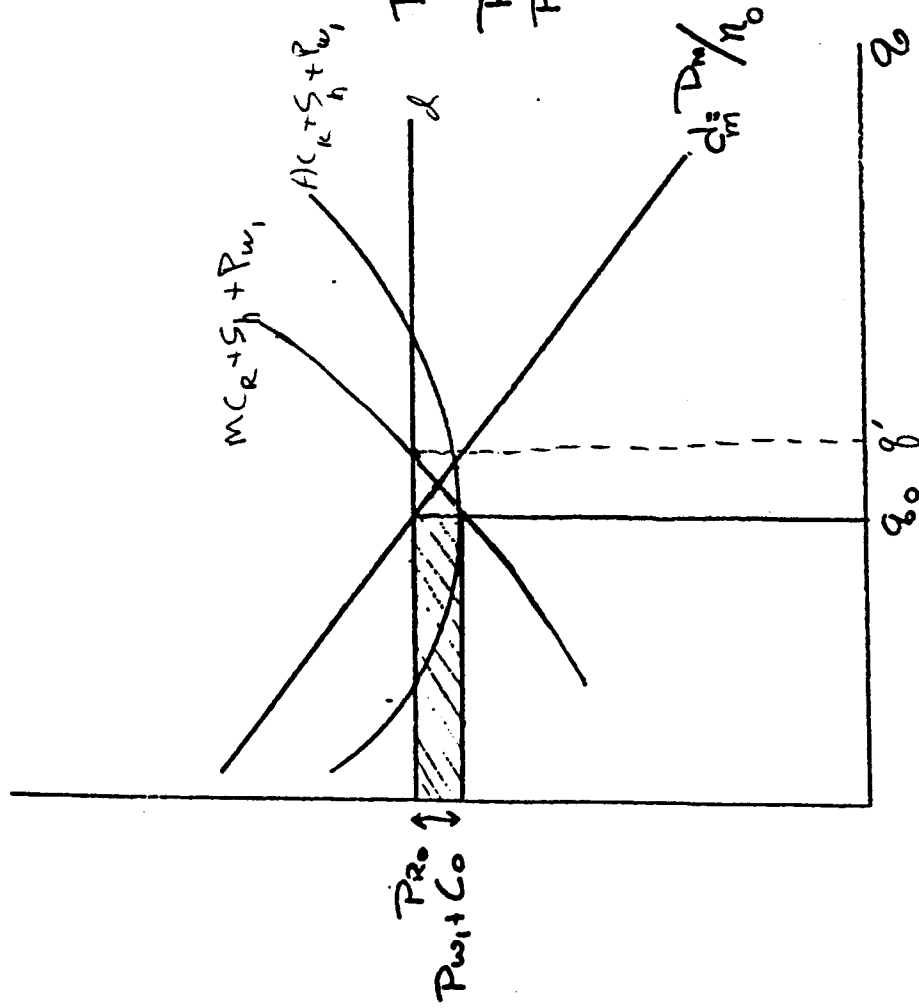


Figure 3A

performance the manufacturer must share with the distributors some of the rents that he earns on the sale of his product.<sup>24</sup>

The Coors marketing arrangement on the wholesale level fits this theoretical framework. Wholesale distributors were given exclusive territories and, although Coors imposed maximum resale price maintenance on these distributors, the evidence indicates that the territories represented valuable assets. Significant excess demand existed for the initial grant of the exclusive territory when Coors opened new areas; and the exclusive franchises sold for significant values when ownership was later sold (subject to Coor's approval). Coors also imposed significant capital costs on distributors by exercising their rights of termination when they believed the distributors were not supplying the desired level of quality services.<sup>25</sup>

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<sup>24</sup>Exclusive territories also give distributors an incentive to invest in building up their accounts with the knowledge that they will receive a substantial fraction of the return from any increased sales in the future. Another gain from adopting exclusive territories is the reduction of the inter-distributor free-rider problem recognized in the standard analysis which we noted earlier. In the context of our model, internalizing this free rider problem reduces the necessary premium by reducing the distributors' gain to shirking,  $W_p$ . The exclusive territory increases the level of consumer repeat purchase which increases the speed by which the distributor loses sales (effective rate of termination) for a given level of manufacturer monitoring expenditures. This lowers the potential gain from shirking and allows the manufacturer to lower the premium and economize on monitoring expenditures.

<sup>25</sup>See FTC case record. It is important to note that Coors' policy of preventing wholesale distributors from selling to grocery central warehouse accounts which generally overlap multiple territories also fits this framework. Since such accounts would have multiple distributors bidding for their business, the distributor's market power and premium stream from the business would be eliminated. Even if the grocery chain is aware of the quality services problem, it is not earning a large enough rental stream to both refrigerate and assure that the wholesale distributor also refrigerates. In particular, given consumer ignorance of the problem or consumer ignorance of the grocery's role in monitoring distributors, Coors could not count on the grocery chain to monitor distributors by paying a

## VI. RESALE PRICE MAINTENANCE AS A PREMIUM GENERATING MECHANISM

On the retail level Coors faced the same problem that they faced on the wholesaler level. Proper refrigeration and rotation of beer are also costly services for retailers to provide. Because a consumer shops at different stores and cannot detect the quality of beer pre-purchase or, equivalently, the cumulative amount of heat that the beer has been exposed to, retailers have an incentive to shirk on the supply of refrigeration and rotation services. Since explicit contractual specification of retailer supply of these services with court enforcement of nonperformance is likely to be at least as costly as in the case of wholesaler supply, Coors choose to adopt a similar two-party (premium-termination) enforcement mechanism on the retail level.

An obvious question is why Coors used minimum resale price maintenance on the retail level, rather than generating a premium with exclusive territories and maximum resale price maintenance, as they did on the wholesale level. The answer relates to the fact that on the wholesale level distributors can be easily assigned to the relatively small number of retail accounts fixed at particular locations. There is no economic gain from permitting these accounts to buy from multiple wholesale distributors. On the retail level, on the other hand, there are a relatively large number of customers that purchase beer from multiple retail distributors. A consumer, for example, may purchase Coors beer at a local  

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premium wholesale price.

grocery store at one time, at a local liquor store at another time, at a different supermarket at another time, or at the ballpark when he is attending a game. In addition, consumers frequently move. Customer assignment to particular retailers would be an extremely costly marketing arrangement.

An alternative to the completely impractical assignment of customers to individual retailers would be to give retailers exclusive geographic territories. However, for these territories to be sufficiently large to generate the market power necessary for the correct premium stream and to internalize the free-rider problem (the two main gains from exclusive territories) the territories would have to be uneconomically large (see section VIII). Therefore, instead of using exclusive territories, with its resulting inefficiencies and inconvenience for consumers, on the retail level Coors employed minimum resale price maintenance.

To see that minimum resale price maintenance is necessary to generate the required premium at the retail level, consider Figure 3.<sup>26</sup> As opposed to our analysis of exclusive territories at the wholesale level, where each distributor was assumed to face a market sharing demand curve,  $d_m$ , and hence market power existed (with maximum price constraint required to limit its exercise), at the retail level each distributor can be assumed

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<sup>26</sup>For ease of comparison between exclusive territories and minimum resale price maintenance, we use the same figure and hence assume the same cost of distribution curves for retailing as for wholesaling. In actuality, it is likely that the rate of output at the minimum average cost of distribution is substantially less on the retail level than on wholesale level. As noted above, this is one motivation for the use of resale price maintenance rather than exclusive territory arrangements at the retail level.

to face a perfectly elastic demand curve,  $d$ , and have essentially no market power. Without minimum resale price maintenance, lowering the wholesale price from  $P_{W0}$  to  $P_{W1}$  in an attempt to generate the necessary premium, would result in the retail price falling by the same amount and hence no premium would be generated. Minimum resale price maintenance creates the required premium stream by preventing this price competition.<sup>27</sup>

To generate the required premium stream the minimum resale price marketing arrangement must also have limited entry provisions. If entry were not limited, then the profit premium would be eliminated as additional identical distributors entered to share the industry demand at the fixed minimum price. Figure 3 illustrates the equilibrium when the manufacturer imposes resale price at the competitive retail price (under costless enforcement) and then lowers the wholesale price from  $P_{W0}$  to  $P_{W1}$  in order to generate the required premium.

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<sup>27</sup>A logical alternative to a minimum price arrangement is a maximum output arrangement. However, fixing prices is generally superior to fixing output when demand differs across distributors or for a particular distributor over time. If changes in demand are due to changes in the number of customers, i.e., every customer has the same demand but there is variability in the number of customers distributors have, then it will be easier for a manufacturer to fix the correct premium stream with minimum resale price maintenance (or with exclusive territories) than attempting to estimate the corresponding maximum output level for each distributor at every point in time. Only when there is some difficulty in using resale price maintenance will a quantity system be used. For example, resale price maintenance would be extremely difficult to use in the sale of automobiles, where substantial price bargaining and corresponding price differences exist across customers and where partial payment is often made in terms of an automobile trade-in. In such a case a manufacturer may rely on some form of a maximum quantity arrangement. This marketing arrangement is discussed further in section VIII. infra.



Figure 3 also indicates that the minimum price, limited entry arrangement with distributors earning a premium implies a gap between each distributor's allocated quantity,  $q_0$ , and the quantity they would desire to supply,  $q'_0$ . However, although a positive price-marginal cost gap is present, distributors cannot engage in price competition to expand their output. The minimum price constraint prevents price competition and leaves the required distributor premium unaltered in equilibrium.

## VII. NON-PRICE COMPETITION

To focus on the essential issues and properties of resale price maintenance, the equilibrium discussed above and illustrated in Figure 3 assumes that the quantity demanded is allocated equally among the  $n_0$  identical distributors at the controlled price. To complete this model some explicit method by which demand is allocated among distributors is required. With a fixed retail price non-price competition is the only mechanism for allocating customers. However, if distributors engage in non-price competition, then the gap between price and marginal cost and some of the distributor premium may be eliminated. This would limit resale price maintenance as an effective means of generating the required distributor premium.<sup>28</sup>

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<sup>28</sup>The reduced effectiveness of resale price maintenance when non-price competition is present is in direct contrast to the Telser analysis of resale price maintenance where non-price competition is the mechanism by which the special services are provided by the distributor and all distributor profits are eliminated.

The motivation for distributor non-price competition at the equilibrium described in Figure 3 is obvious. With total demand at the minimum resale price assumed to be allocated costlessly and equally among each of the identical distributors, each distributor (and hence the group of distributors) is willing to supply more output than the amount consumers demand at the effective minimum price. Since price cutting by distributors to drive the price down to the perfectly competitive level,  $P_{W_1} + C_0$ , is not possible, distributors can be assumed to take the alternative avenue of attempting to increase sales by improving some non-price aspect of the product or distribution service.<sup>29</sup>

For simplicity we consider a form of non-price competition in which the distributor can make a per unit expenditure,  $z$ , which lowers the effective price to the consumer by  $\alpha z$ , where  $\alpha$  is greater than zero and less than one.<sup>30</sup> If the equilibrium per unit level of expenditures on the non-price variables is  $z_0$ , then the quantity demanded by consumers would correspond to a price of  $P_R - \alpha z_0$ . The inefficiency of non-price competition creates a wedge between the effective price paid by consumers,  $P_R - \alpha z_0$ , and the net price received by the distributor,  $P_R - z_0$ .

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<sup>29</sup>Our analysis here refers to particular forms of non-price competition that cannot be effectively monitored by the manufacturer. Forms of non-price competition that can be detected effectively can be handled by the same premium-termination mechanism that insures the supply of quality service inputs.

<sup>30</sup>If  $\alpha$  equals one, then consumers value the added service just as much as a reduction in price and hence the minimum price is completely ineffective. The minimum price simply results in a higher retail price with an increase in the non-price aspects of the sale so as to leave the consumers and distributors in the same position as if no minimum resale price existed. If  $\alpha$  were larger than one, these services would have been provided without the minimum resale price and, hence, would be included in the original definition of the product or distribution services.

Under the assumption of perfect competition among distributors, expenditures on non-price attributes would occur up to the point where the distributor's marginal cost of output equals the price net of expenditures on the non-price attributes, or simply where marginal cost equals  $P_R - z_0$ . No matter how inefficient non-price competition is, i.e., no matter how small  $\alpha$ , distributors would engage in such competition until all marginal profits were eliminated.<sup>31</sup>

The result that non-price competition eliminates all marginal profits depends upon the assumption of perfect competition on the retail level, namely that sales can be increased by an arbitrarily large amount with an arbitrarily small decrease in the effective retail price to consumers. However, most retailing markets are to some extent imperfectly competitive due to locational advantages, brand names, or other factors. In most contexts the perfectly competitive assumption, while unrealistic, simplifies the analysis and produces results that are close to those that can be expected to be actually observed. However, the unrealistic assumption of perfectly competitive retail markets affects the results in a qualitative manner when analyzing non-price competition. In particular, as we shall see, the existence of imperfect competition eliminates the retailer incentive to engage in a broad range of non-price competition.

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<sup>31</sup>A similar analysis can be used to answer the question of whether non-price competition eliminates profit created by a cartel. See Klein and Murphy, "Non-Price Competition and the Elimination of Collusive Profits" unpublished working paper, 1980, where it is demonstrated that both producers and consumers could be worse off under a collusive price fixing arrangement in which non-price competition is permitted.

We begin our analysis of the imperfectly competitive case at the equilibrium given in Figure 3, where equal allocation of output among distributors is determined costlessly by the manufacturer. If it does not pay individual distributors to engage in non-price competition and move away from this point, then this solution remains as a viable equilibrium. At the equilibrium shown in Figure 3 each distributor has a price marginal cost gap equal to the amount of the per unit premium,  $\pi_h/q_0$ . With a perfectly elastic demand curve facing the individual distributor, non-price competition would lead to an expansion in output and to the elimination of a portion of this gap. However, if we assume that an increase in a distributor's sales due to an effective price decrease are not potentially infinite but can be represented by an individual distributor's demand curve, it may no longer be true that such an effective price decrease is profitable.

To illustrate, let  $D(P_e)$  be the amount the distributor can sell by charging its customers an effective price of  $P_e$ , holding other distributors' actions fixed. The effective price,  $P_e$ , equals  $P_R - \alpha z$ . In this case we evaluate this demand curve at the proposed equilibrium point where price equals the minimum resale price,  $P_R = P_{R0}$ , and there is zero non-price competition,  $z = 0$ . If the distributor expends resources on non-price competition of  $z$  per unit of output, the effective price to consumers will be lowered and the distributor's level of sales will be increased. However, an increase in  $z$  (from the initial level of zero) will pay only if revenues increase more than cost.

At the proposed equilibrium point the distributor's optimization problem is to vary  $z$  so as to maximize his profits,  $\pi(z)$ , which are given by:

$$(5) \quad \pi(z) = (P_{R0} - P_{W1} - S_h - z) * D(P_{R0} - \alpha z) - C_R(D(P_{R0} - \alpha z)),$$

where  $C_R(.)$  is the distributor's total distribution cost exclusive of expenditures on quality service inputs,  $S_h$ , and non-price attributes,  $z$ . For  $z = 0$  to be the optimal level of non-price competition for a representative distributor, we must have  $d\pi(z)/dz < 0$  at  $z = 0$ . A necessary condition for the distributor not to engage in non-price competition is then that

$$(6) \quad \alpha D'(P_{R0} - P_{W1} - S_h - MC_R(q_0)) + D > 0.$$

At the proposed equilibrium point  $D$  is  $q_0$  and  $D'$  is  $dq_0/dP_e$ . Since  $P_{R0} - P_{W1} - S_h - MC_R(q_0)$  is precisely the price-marginal cost gap, it can be replaced by the per unit premium,  $\pi_h/q_0$ . Transposing and dividing through by  $P_{R0}$  and  $\alpha$ , the necessary condition for the distributor not to engage in non-price competition is

$$(7) \quad \pi_h/q_0 P_{R0} < -1/\alpha E_D,$$

where  $E_D$  is the elasticity of the individual distributor's demand curve. That is, it will not pay the distributor to make an effective price cut

through non-price competition if the premium is small relative to total revenue, if the elasticity of demand is small in absolute value, or if  $\alpha$  is small (non-price competition is ineffective). If the inequality in equation (7) is satisfied, expenditures on non-price competition will not be made and the premium stream will not be reduced. Therefore, the manufacturer can implement the same solution as in the case where output is allocated costlessly among distributors.

The inequality of equation (7) is likely to hold even for large retailer demand elasticities if the premium is a small fraction of the product price or if non-price competition is relatively inefficient. For example, if non-price competition is one half as effective as price competition i.e.,  $\alpha = .50$ , and the premium stream is five percent of the retail price, then any demand elasticity of less than 40 will result in zero non-price competition by retailers. In such a case non-price competition will not reduce the premium stream created by minimum resale price maintenance and full distribution efficiency can be achieved, i.e., the manufacturer can give the distributors the necessary premium and still obtain distribution services at minimum average cost.<sup>32</sup>

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<sup>32</sup>Instead of assuming that non-price competition has a constant effectiveness of  $\alpha$ , the analysis can be extended to a more general case of variable effectiveness by assuming that the effectiveness will be equal to 1 on the margin at the level of non-price services with an unrestricted retail price, considering the consumer value of the non-price expenditures to be  $V(z)$  and finding the firm's first order condition for the optimal  $z$ . In this case some non-price competition will occur in equilibrium which will represent an additional cost of  $z - V(z)$  per unit. However, if  $V'$  declines rapidly from its initial value of 1, then resale price maintenance will still be effective.

Figure 4 illustrates the equilibrium for an individual distributor when the inequality in equation (7) is satisfied. In this case the slope of the retailer's effective demand curve is drawn as a function of the distributor's price net of expenditures on non-price competition. The inefficiency of non-price competition ( $\alpha < 1$ ) implies that reductions in the net price to the distributor result in smaller increases in sales than under price competition. Hence, for effective prices below the minimum retail price, the effective demand curve for the distributor lies to the left and below that corresponding to price competition. This is represented by a steeper demand curve,  $d^*$ , for effective price decreases below  $P_{R0}$  via non-price competition, than the demand curve,  $d$ , which is drawn assuming price decreases can be made by price competition. Since it takes  $1/\alpha$  dollars to lower the effective price to consumers by one dollar, the slope of the retailer's effective demand curve for output greater than  $q_0$  is  $1/\alpha$  times the original slope.<sup>33</sup>

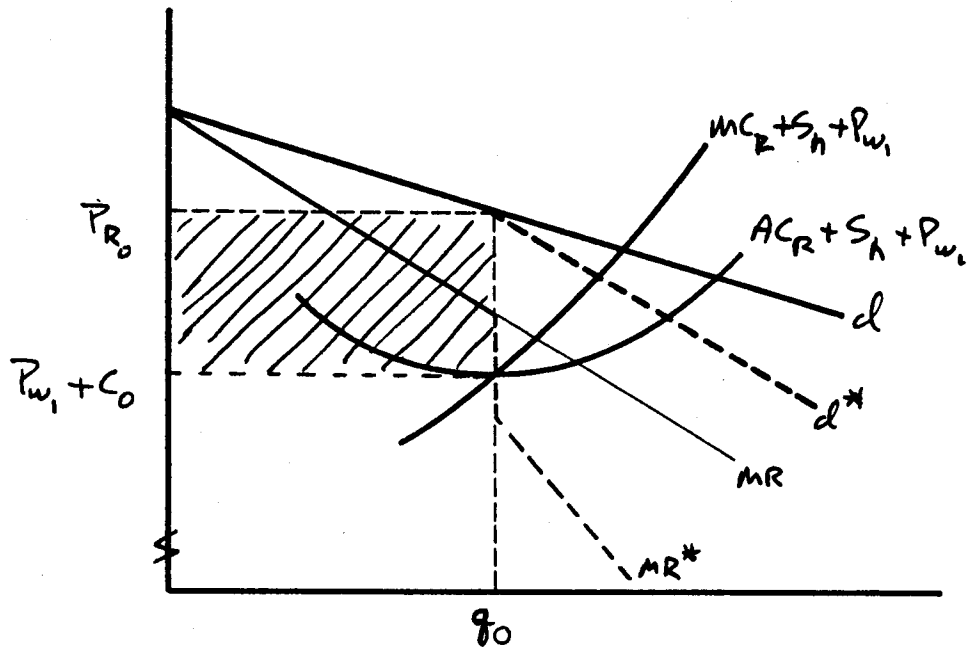
Therefore, the distributor's effective demand curve has a kink at the minimum retail price. This kink implies a discontinuity in the distributor's marginal revenue schedule. If the inequality of equation (7) is satisfied, the distributor's marginal cost curve (equal to average cost at this equilibrium) passes through this discontinuity. In this case

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<sup>33</sup>The manufacturer may eliminate the kink for the non-price expenditures it desires the distributor to make by paying  $(1-\alpha)$  percent of those particular expenditures. Cooperative advertising programs are a common example of this phenomenon.

Figure 4

DISTRIBUTOR EQUILIBRIUM WITH NON-PRICE COMPETITION





increases in sales through non-price competition are not profitable. As  $\alpha$  goes to zero, i.e., non-price competition becomes less effective, the size of this gap in the marginal revenue schedule increases and non-price competition is less likely to occur.<sup>34</sup>

There will certainly be some very efficient (high  $\alpha$ ) means of non-price competition, such as tie-in sales, discounts on other items, and giveaways, that it will be profitable for the distributor to engage in. Therefore, to preserve this equilibrium and the distributor premium, it will be necessary for the manufacturer to monitor the distributor and prevent non-price competition along these efficient avenues via the threat of termination and the associated loss of the distributor's premium stream. Our model implies that the manufacturer must monitor both the minimum price and the distributor's non-price competition effort. As opposed, for example, to the accepted special services model, where the manufacturer need only monitor the minimum resale price, this model implies that the manufacturer also must determine if the distributor is supplying the particular desired level of quality services (and hence whether the sanction of termination should be imposed or not) and if the distributor is supplying

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<sup>34</sup>This is merely the standard "kinked demand" model, originally proposed by R. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," Oxford Econ. Papers, 2 (May 1939), 12-45 and Paul M. Sweezy, "Demand Under Conditions of Oligopoly," J. Polit. Econ., 47 (August 1939). Although we do not believe the model is a satisfactory explanation for industrial price rigidity, it is a useful theoretical framework for analyzing non-price competition.

non-price services that eliminate the premium (and hence the effectiveness of the termination sanction).<sup>35</sup>

#### VIII. THE OPTIMUM NUMBER OF OUTLETS

A major gain to the manufacturer from resale price maintenance at the retail level is the increased number of outlets that are available to market his product. To illustrate these gains it is useful to compare the resale price maintenance equilibrium described in Section VI, where distributors faced perfectly elastic demand, with the equilibrium that would result if the manufacturer attempted to create the necessary distributor premium merely by limiting the distribution of its product without restraining price competition.

To make this comparison we more completely model our premium mechanism of contract enforcement. In the resale price maintenance arrangement customers were allocated so that each of  $n_0$  distributors had an equal share of the market. We assumed that the manufacturer sets a minimum resale price of  $P_{R0}$ , charges the distributors a wholesale price of  $P_{W1}$ , and specifies  $S_h$  as the required level of quality services. These variables determine  $\pi_h$ , the maximum possible return when providing the specified level

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<sup>35</sup>Manufacturer monitoring of distributor non-price competition is analytically similar in both the resale price maintenance and exclusive territory arrangements. The incentive to engage in excessive non-price competition when distributor demand is elastic and the price is fixed by minimum resale price maintenance above an uncontrolled market price has a counterpart incentive for distributors to engage in too little non-price competition when distributor demand is made inelastic by an exclusive territory arrangement and the price is fixed below the uncontrolled market price by maximum resale price maintenance.

of quality services, and  $\pi_l$ , the maximum return when shirking on the supply of quality services as shown in Figure 5. As the figure indicates, since the minimum price constraint prevents distributors from expanding output beyond  $q_0$ , profits from providing the low level of services exceed the profits from providing the high level of services by the per unit cost differential of providing services multiplied by the fixed rate of output,  $(S_h - S_l) q_0$ .<sup>36</sup>

Specifically, the distributor's per period return to shirking is

$$(8) \quad \pi_l = q_0 (P_{R0} - P_{W1} - S_l) - C(q_0).$$

The distributor's return to high quality performance similarly is given by

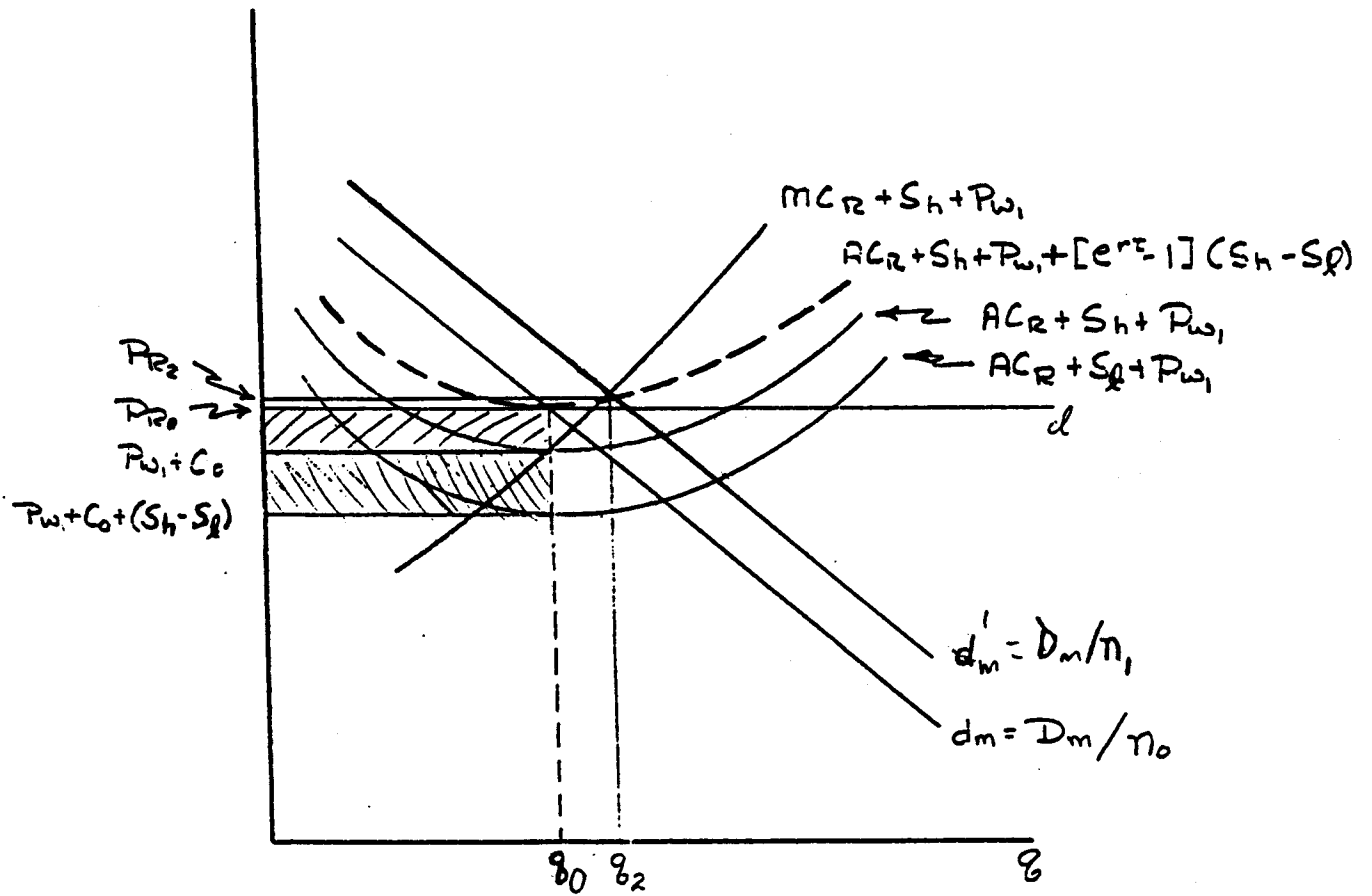
$$(9) \quad \pi_h = q_0 (P_{R0} - P_{W1} - S_h) - C(q_0).$$

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<sup>36</sup>For the case of exclusive territories, the maximum price constraint will be binding and the equilibrium will be that given above. The fact that this constraint is binding limits the distributor's actions if he wishes to reduce the supply of quality service inputs below the specified level,  $S_h$ . Since the distributor faces a market sharing demand curve he will, even when he shirks on quality service inputs, generally have an incentive to increase price and not decrease price. Only if the lower shirking marginal cost curve ( $MC_R + S_l + P_{W1}$ ) cuts the marginal revenue schedule to the right of  $q_0$  will the distributor lower price and expand output when he shirks. Moreover, since the manufacturer knows that if the distributor is providing high quality it is in his interests to raise price, he would be immediately alerted to shirking behavior if the distributor attempted to lower price and expand output. Therefore, in this case it is reasonable to assume that the quantity that a distributor can sell when shirking on the supply of quality inputs will be exactly the same as when the distributor behaves honestly, or simply the quantity demanded at the maximum price,  $q_0$ . Because of this fact the analysis for exclusive territories is identical to that presented for resale price maintenance in this section.

Figure 5

DISTRIBUTOR SHORT-RUN SHIRKING PROFIT AND THE REQUIRED PREMIUM



The condition for honest distributor performance, therefore, takes the form (from equation 5) of

$$(10) \quad \pi_h/q_0 > [e^{rt} - 1] (S_h - S_l).$$

Equation (10) states that the per unit premium earned by the distributor (the left hand side) must be greater than or equal to the expected per-unit short run gain from shirking on the supply of quality service inputs. In equilibrium, with a given level of manufacturer monitoring, the distributor premium is just the normal rate of return on his expected gains from shirking.

Figure 5 also adds the required per unit premium that manufacturers must provide distributors to assure the supply of high quality distributor services,  $[e^{rt} - 1] (S_h - S_l)$ , to the distributor's actual cost (including the wholesale price and the cost of providing  $S_h$ ). This is represented by the dashed curve. The resale price maintenance equilibrium we propose provides retailing services at minimum average cost.

If the manufacturer were to set the same wholesale price  $P_{W1}$  and restrict entry to the same number of retailers,  $n_0$ , but allow price competition, then competition between retailers would drive the retail price down below  $P_{R0}$  to the point where marginal cost intersects the market sharing demand curve. At this lower retail price the per-unit premium received by distributors would be insufficient to guarantee supply of the high level of quality service inputs,  $S_h$  (since this price quantity

combination lies below the dashed curve in the figure). In order to generate a sufficient premium the manufacturer must restrict the number of distributors to a level less than  $n_0$ , say  $n_1$ , and move the implied market sharing demand schedule out to  $d'_m$ . The full equilibrium with  $n_1$  retailers must both be on the corresponding market sharing demand curve and at the same time generate a price output combination on the dashed curve where price covers both distribution costs and the necessary premium and price equals marginal cost. This equilibrium corresponds in Figure 5 to a retail price of  $P_{R2}$  and output per distributor of  $q_2$ .

This equilibrium is inferior to the resale price maintenance equilibrium for several reasons. First, distributors are operating at a level of output beyond the minimum average cost point,  $q_0$ , and hence have higher distribution costs. Secondly, limited entry requires an equilibrium retail price which is higher than under resale price maintenance (in order to cover the higher per-unit costs of distributors), thereby reducing the manufacturer's total sales and profits. Finally, limited entry requires the manufacturer to reduce the number of distributors (since total output is smaller and each distributor's output is greater).

Because generating the necessary distributor premium without the use of resale price maintenance requires a restriction in the number of outlets, resale price maintenance can be considered by the manufacturer as a mechanism for generating an increased number of outlets. In fact, the cost to the manufacturer of a restricted number of distributors may be greater than the extra costs associated with the fact that distribution

services are being supplied at greater than minimum average cost. Even if there were essentially constant average and marginal costs of providing distribution services, the delivered cost to consumers, inclusive of consumer transportation and convenience costs, is likely to rise with distributor output. The increased number of distributors in the resale price maintenance equilibrium implies that customers can be served at a lower delivered cost.<sup>37</sup>

If a manufacturer permits unlimited price competition and the resulting reduced number of distributors, the scale of operation for an individual distributor may be very large. For example, consider the distribution of automobiles. The marginal cost of selling an additional automobile may be fairly constant and extremely close to the manufacturer's wholesale price, but automobile manufacturers would not want their distributors scaled at the point where this marginal cost finally rises sufficiently to cover the distributor's fixed cost of operation. And, similarly, if there is a transitory decrease in demand, manufacturers

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<sup>37</sup>This is related to the "outlets hypothesis" for resale price maintenance. See B. S. Yamey, The Economics of Resale Price Maintenance, (1954), pp. 49-52 and J. R. Gould and L. E. Preston, "Resale Price Maintenance and Retail Outlets," Economica, (August 1963), pp. 302-312, where the manufacturers' demand is assumed to be a positive function of the number of distributors and the manufacturer desires distributors to be operating with excess capacity, i.e., at a rate of output less than the minimum efficient scale. Our analysis, on the contrary, generates an inefficiency of greater than optimal distributor size with price competition because of the presence of a premium which is required to solve the distributor performance problem. Gould and Preston's analysis implies that the number of outlets will be inefficiently low with price competition even without such a distributor performance problem. Resale price maintenance is required within this framework not to generate a premium, but to cover the higher average distribution costs associated with a larger number of less than efficient scale outlets.

do not want price to fall to marginal cost and for distributors to exit. Automobile manufacturers desire a larger number of distributors than would exist in a system where an unlimited number of automobiles could be ordered on demand by any individual dealer. Automobile manufacturers desire a larger number of distributors located more conveniently to their customers so that the customers can receive product demonstration and sales effort services efficiently and desire long-term stability in their distribution network.<sup>38</sup>

Given the existence of price bargaining and trade-in allowances, it is not feasible for the manufacturer to increase the number of distributors to the optimal level by fixing a minimum retail price. Instead, manufacturers have designed a system of distributor output allocations which prevents the market price from falling to the distributor's marginal cost. When demand falls, manufacturers reduce their output and dealer allocations to maintain dealer rents, even though the wholesale price of additional output would cover the manufacturer's marginal costs of production. In addition to the allocation system changing dealer pricing incentives by increasing marginal costs to cover increased fixed costs of supplying full service operations, the system creates an anticipated premium stream and, thereby, a potential termination sanction.

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<sup>38</sup>This argument is the standard free riding type argument, where consumers get their sales service from a full-service dealer before purchasing a car from a discount, no-service "book" dealer. See, for example, United States v. General Motors Corp., 384 U.S. 127 (1966).



Alternatively, minimum resale price maintenance can be thought of as a mechanism for increasing the number of distributors by reducing the demand elasticity facing a representative distributor (due to the relative inefficiency of non-price competition). The decrease in the elasticity of the distributor's effective demand curve creates the necessary premium stream in a more efficient manner than if the premium were created by a reduction in the number of distributors alone. A similar trade-off exists if exclusive territories are employed at the retail level. Although customer assignment to particular distributors is not perfect in such a case, i.e., the exclusive territory does not create monopoly power, the arrangement does create some market power. The market power that is created is related to the elasticity of demand facing each distributor. If an exclusive territory is granted to each distributor, the manufacturer can increase the number of distributors above the number that would be necessary if the manufacturer relied solely on limited entry to generate the required distributor premium stream. Manufacturer prohibitions on price advertising by distributors may serve an analogous purpose. By decreasing the effective elasticity of demand facing individual distributors, more distributors can exist in the marketplace without the premium being competed away.<sup>39</sup>

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<sup>39</sup>Restrictions on price advertising are quite common in vertical restraint marketing arrangements. See Thomas R. Overstreet, Resale Price Maintenance: Economic Theories and Empirical Evidence, Federal Trade Commission Bureau of Economics Staff Report, November 1983, table V-11.

## IX. MANUFACTURER COMMITMENTS

As we have shown, for a vertical restraints marketing arrangement to work, in the sense of creating an incentive for distributors to perform, distributors must have something to lose upon manufacturer termination. Therefore, it is necessary that the manufacturer share some of its rents with distributors. However, it is not necessary that the manufacturer give this premium stream to distributors without demanding payment in return. Manufacturers can demand that distributors purchase the expected discounted value of the future premium stream they anticipate receiving from the manufacturer for an initial lump sum fee.

The lump sum payment to the manufacturer is equivalent to an initial franchise fee upon which the future premium stream represents an expected normal rate of return. The distributor's average cost, including this initial fee, is raised to the point where the equilibrium retail price covers the distributor's full cost. The initial lump sum fee eliminates all distributor profit and can be considered similar to a "contrived" manufacturer specific investment, the future quasi-rent on which assures performance.

It is important to recognize that the lump sum payment itself serves no enforcement role.<sup>40</sup> It is not the payment by the distributor of

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<sup>40</sup>Therefore, the fact that a manufacturer, such as Coors, sets the initial franchise fee at the wholesale and retail levels of distribution at zero is consistent with our theory. Coors may have given away the valuable exclusive territory franchise at the wholesale level and the right to collect a premium stream at the retail level because of the legal

an initial lump sum that assures distributor performance. Rather, it is the distributor's belief that the manufacturer is committed to an arrangement which will pay him a future quasi-rent, the present discounted value of which is greater than his short-run shirking profit. The ability of the manufacturer to commit to such a premium stream is independent of whether an initial lump sum payment is made by the distributor.<sup>41</sup>

Although the initial lump sum fee paid by the distributor to the manufacturer for the assigned territorial property right or the right to be one of a limited number of distributors selling at a minimum price serves no enforcement role, the fee should be set at the appropriate level in the sense that the corresponding premium stream, which does assure future

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constraints on the manufacturer's ability to terminate distributors at will without compensation. For example, if the court requires manufacturer proof of distributor shirking or distributor compensation after manufacturer termination, the two-party contract enforcement mechanism would be defeated. The distributor would always shirk on the supply of quality services, earning both the extra short-run shirking profit and then have its initial lump sum fee returned. The distributor would have its cake and eat it too. Without an initial distributor payment, upon termination the manufacturer may not be considered as unilaterally taking something away from the distributor.

<sup>41</sup>In the Klein-Leffler case, supra, note \_\_, initial specific investments are an important element of the commitment structure and serve a different purpose. Since it is the future premium stream that guarantees manufacturer performance, consumers have no interest in enforcing a high price in the current period. However, consumers cannot make credible commitments regarding future premium payments to manufacturers. Therefore, it is the specific investments made by manufacturers which imply a quasi-rent return that manufacturers will collect in the future that assures consumers that manufacturers will not cheat. The initial specific investments do not merely drive expected profits to zero. Hence, the use of a sufficiently low price in the initial period rather than specific investments as an alternative way to reach zero profits has no effect on the commitment structure. See Carl Shapiro, "Premiums for High Quality Products as Returns to Reputations," Quarterly Journal of Economics, 98, 659-680 (1983) for a statement of this incorrect alternative solution.

performance, should be at the appropriate level. The appropriate level of the premium stream may appear to be at an extremely high level since the premium is an income transfer, offset by an equivalent lump sum that entails no real resource cost while manufacturer monitoring is a costly process. The manufacturer may appear to be able to maintain the same enforcement equilibrium by reducing monitoring expenditures, thereby increasing the time to detection and the distributor's potential short-run shirking return and simultaneously increasing the initial lump sum and future expected premium stream. While the distributor incentive to shirk would remain unchanged, the real resources associated with manufacturer monitoring of distributors would be reduced. There appears to be no limit to this economizing process, with manufacturer monitoring potentially set at arbitrarily low levels and the initial lump sum and corresponding premium stream raised appropriately.<sup>42</sup>

At one limit the manufacturer can be assumed to give the distributor all the quasi-rents associated with the sale of the product by lowering the wholesale price to  $MC_M$  and keeping the retail price at  $P_{R0}$ .<sup>43</sup> In return, the distributor would pay the manufacturer an initial lump sum equal to the discounted value of all the rents associated with the

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<sup>42</sup>In the context of the economics of crime, this is analytically equivalent to a policy of decreasing the probability of detection and conviction and increasing the penalties associated with various crimes. However, such a policy may distort the relative costs of alternative crimes at particular points in time and induce criminals to commit more severe crimes to avoid large sanctions for minor crimes that they anticipate they are likely to be punished for.

<sup>43</sup>In the exclusive territory arrangement such a wholesale price would eliminate the need for maximum price maintenance.

present and future sale of the product. However, in such a situation the manufacturer does not have the proper incentive to maintain the quality of the product. Unless the distributor can write a costlessly enforceable contract with the manufacturer for the supply of the manufacturer's product, the manufacturer will certainly shirk on quality. A fully symmetrical reverse cheating problem is created unless the manufacturer has something to lose from nonperformance. An appropriate distribution of rents between the transacting parties must exist in equilibrium.

Another element of the reverse cheating potential that is related to the magnitude of the initial lump sum fee is unjust termination. If the promised premium stream is large enough, the manufacturer may decide to terminate distributors that have not shirked on quality to save the cost of these future premium payments. The manufacturer keeps the initial lump sum payments of the terminated distributors and fails to make any future premium payments. However, if the manufacturer were to terminate distributors unjustly, then current and future distributors are likely to revise their expectations of future terminations upward. This would reduce the capital value of the anticipated premium stream and induce distributor shirking.

More generally, the manufacturer's commitment to pay the future premium stream and to not terminate distributors unjustly is supported by what potential distributors learn about the manufacturer when commitments are not fulfilled, namely that the manufacturer's future commitments also

are less likely to be fulfilled.<sup>44</sup> Since the distributor's expected return from shirking in equilibrium is equal to the expected return from continued honest performance under the assumption that the future premium would be paid, the reduced probability of future payment induces rational distributors to shirk. If distributors believe that a manufacturer that terminates unjustly and does not pay the anticipated premium is less likely to pay the required premium in the future as well, they will respond by shirking on the provision of quality service inputs.<sup>45</sup>

If a manufacturer's unfair termination of a distributor leads other distributors to substantially reduce their estimates of the anticipated premium stream, the manufacturer must terminate all distributors simultaneously and, if he wishes to continue to assure the supply of high quality inputs at the distribution level, handle distribution with his

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<sup>44</sup>This analysis requires that manufacturers differ in their "characteristics" regarding the potential to renege on commitments and that distributors have incomplete information about these "characteristics." Hence, such learning would not occur if the manufacturer's failure to pay the required premium could be linked to some objective change in the environment that would induce all types of manufacturers to renege on the premium. See Klein and Kenney, supra, note \_\_\_.

<sup>45</sup>This may explain why, upon termination, a manufacturer may resell the franchise at less than a market leasing price. To convince the remaining distributors that terminations are just, i.e., are made in response to shirking on the supply of quality services, the manufacturer must not profitably resell franchises. The evidence indicates that, upon termination, Coors gave franchises to new owners at very low prices -- covering cost of inventory, trucks, warehouses, etc. -- that is, the sale price was similar to the amount of compensation paid by Coors to the terminated distributor. See, for example, Mendelovitz v. Adolph Coors Co., 693 F. 2d 570 (5th Cir. 1982).

own employees.<sup>46</sup> The gain to the manufacturer of such a mass termination is the saving of the future premium; the cost of terminating distributors unfairly is the higher cost of distribution inherent in the next best alternative means of distribution. Therefore, provided the cost savings from using independent distributors exceeds the required premium, the manufacturer's commitment not to unjustly terminate distributors and to pay the promised premium stream will be credible.<sup>47</sup>

It is important to recognize that although the manufacturer's commitment to pay the promised premium and not to terminate distributors unjustly can be supported by distributor learning and the cost disadvantage of altering the distribution system, it does not mean that the manufacturer can similarly credibly commit on other elements of the contractual arrangement. Whether the manufacturer can credibly commit or not varies from element to element of the contractual arrangement and depends upon whether manufacturer renegeing on a particular element induces distributor shirking.

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<sup>46</sup>The only example we know of mass franchisee terminations and vertical integration is the Ralston Purina termination in 1971 of all 642 Jack-in-the-Box franchises with 30-day notification. However, as discussed in B. Klein and L. Saft, "The Law and Economics of Franchise Tying Contracts," 28 J. Law & Econ. 345, this is not a likely example of reverse (franchisor) cheating since it occurred only after Ralston Purina settled a class action suit which forced them to alter substantially their franchise arrangement.

<sup>47</sup>There is a separate question of how a manufacturer commits that he will terminate distributors that shirk. The answer is related to learning produced by the shirking behavior. The manufacturer recognizes that either distributors would learn something about him if he fails to terminate (that it is particularly costly for the manufacturer to terminate) or that he learns something about the distributor by the fact that the distributor shirked (that it is particularly cheap for the distributor to shirk).

For example, even if a particular low level of manufacturer monitoring expenditures (that implies a high level of potential short-run distributor shirking profit and a corresponding high premium stream) would result in a distribution of rents between the transacting parties that represents an equilibrium where the manufacturer will not shirk on quality, the manufacturer may not be able to credibly commit to it. After collecting the franchise fee the manufacturer could increase his monitoring efforts and reduce the premium while continuing to maintain distributor incentives to provide high quality. As long as the premium declines by an amount greater than the increase in monitoring costs, the manufacturer's return will increase.

The manufacturer commitment problem arises because, although ex-ante increases in the premium are costless to the manufacturer in the sense that they can always be recouped in a higher initial franchise fee, ex-post the premium payment represents a cost to the manufacturer. Prior to collecting the initial franchise fee, a one dollar increase in the present discounted value of the premium stream translates into a one dollar increase in the franchise fee paid to the manufacturer. However, after collecting the initial franchise fee, any reductions the manufacturer can profitably make in the premium translate directly into increased wealth. As long as the new lower premium provides a normal rate of return on the new lower short-run gains to distributor shirking, distributors have no incentive to shirk. Hence, in equilibrium, the manufacturer can rationally be expected by distributors to monitor at a rate that maximizes the manufacturer's



ex-post return, or where a one dollar increase in monitoring expenditures reduces the premium paid to distributors by one dollar.

This distinction between ex-ante and ex-post incentives on monitoring carry over to other aspects of the manufacturer-distributor relationship that affect the size of the premium paid to distributors. Since an increase in the manufacturer imposed standard for quality services inputs,  $S_h$ , increases the required premium, the manufacturer has an incentive to reduce this standard below what it would be if the transactors could enforce supply by costlessly contracting on  $S_h$  directly. In particular, a one dollar increase in expenditures made by distributors on quality service inputs requires the manufacturer to increase the retail-wholesale price differential by more than one dollar. Since a higher level of quality service inputs implies a greater short-run distributor cheating potential, the manufacturer must pay distributors both the added cost of these service inputs and the additional premium stream required to assure the supply of these services. Because of the added cost of the increased premium the manufacturer implicitly pays more for the quality services than marginal cost and will set the quality standard,  $S_h$ , below the costless enforcement level.<sup>48</sup>

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<sup>48</sup>Mathematically, an increase of one dollar in  $S_h$  must be accompanied by an increase of  $e^{rt}$  dollars (where  $t$  is time to detection) in the retail-wholesale price differential. Similarly, the manufacturer also has an incentive to reduce output (and hence raise price) relative to the case of costless third party enforcement since the per unit premium paid to distributors represents an additional marginal cost. This additional marginal cost leads the manufacturer to raise the wholesale price and the required retail price (in order to maintain the premium) above the level that would be chosen under costless third party enforcement.

An obvious question is why not eliminate these distortions with the use of a per unit time premium? This is what manufacturer payment of an interest return on an initial distributor franchise fee would imply. However, in our framework a proportional premium is necessary since the manufacturer desires its distributors to supply a particular level of per-unit expenditures on quality services. For example, in the Coors case the costs of refrigeration and product rotation are roughly proportional to output and, therefore, the distributor's potential gain from not supplying these inputs is also roughly proportional to output. To prevent shirking the manufacturer must generate the correct per unit premium. Since distributors are likely to be of different sizes in equilibrium, the optimal per unit time premium will not be independent of output, but in general vary with the output of the distributor. If the premium were set at a level sufficient for the expected level of output for the average-sized distributor, those distributors with larger than expected output would find it optimal to shirk on the supply of quality services. Because the sizes of distributors are likely to vary substantially in ways that cannot be predicted ex-ante, we assume that a proportional premium such as is generated by resale price maintenance or exclusive territories is necessary.

## X. CONCLUSION

The standard economic paradigm of an optimal contractual arrangement involves the setting of explicit terms so that the incentives of the transacting parties are correct. However, once it is recognized that it is efficient for transactors to leave some elements of contractual

performance unspecified, an optimal contractual arrangement must also set terms so that the quasi-rents are optimally distributed between the transacting parties. Vertical restraints, by shifting some rents from the manufacturer to distributors, serve this later purpose of assuring distributor performance of unspecified elements of the contractual understanding.

The minimum amount of the rental stream that must be shifted by the manufacturer to the distributor is determined by the distributor's short-run shirking potential. As long as the rental stream that remains with the manufacturer, i.e., the rental stream to the manufacturer from the distribution arrangement after the premium is paid, is greater than the manufacturer's return from the next most efficient alternative marketing arrangement such as vertical integration (or, equivalently, the opportunity cost to the manufacturer of adopting the alternative arrangement is greater than the premium that he must pay) and as long as the manufacturer's remaining rental stream also is greater than the manufacturer's return from shirking on quality, the manufacturer will be able to make a credible commitment to pay the minimum rental stream to the distributor and performance will be assured.

The major empirical implications of this more general theory, compared to the narrower special services free-riding theory, involve the necessity for active manufacturer monitoring of quality, the presence of distributor terminations for violation of the quality standard and the type of quality services that manufacturer imposed vertical restraints are

designed to induce distributors to supply. Vertical restraints, by creating a distributor premium stream that is lost upon termination, may be used whenever there is some desired aspect of distributor performance that is difficult to contractually specify and enforce, but which the manufacturer can monitor directly. Vertical restraints thereby provide a mechanism that efficiently permits a manufacturer to induce a distributor to supply not only special services, but to supply any quality service inputs that may influence the demand for the manufacturer's product.

An example of how our analytical framework broadens substantially the distributor services that may require some form of vertical restraint for marketing efficiency, consider the use of resale price maintenance by Levi Strauss. The service the manufacturer may have wanted distributors to perform in that case may have been merely not transshipping the product to unapproved distributors. Manufacturer termination of distributors that transship product to unapproved mail or phone order distributors who are not supplying required point of sale services, such as product demonstrations, is an obvious example of the special services free riding paradigm.<sup>49</sup> However, it is important to remember that in our framework a resale price maintenance or exclusive territory arrangement operates by creating a premium stream for approved distributors that makes the termination sanction effective and thereby makes

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<sup>49</sup>See, for example, Computer Place, Inc. v. Hewlett-Packard Co., 607 F. Supp. 822 (N.D. California 1984), aff'd \_\_\_ F. 2d \_\_\_ (9th Cir. 1985) and Moffat v. Lane Company. The recent Supreme Court decision in Monsanto Co. v. Spray-Rite Service Corp., 104 S. Ct. 1464 (1984) reaffirms the ability of manufacturers under particular conditions to legally terminate discounting and transshipping distributors unilaterally.

transshipping to unapproved sellers potentially costly. As opposed to the standard special services framework, manufacturers cannot merely monitor the conditions of the restraint and expect the desired services to be supplied by the distributor. Rather than, for example, only monitoring a fixed retail price, the manufacturer also must monitor distributors directly on their non-price competition effort and threaten termination to induce the retailer to supply the right services in the right amount.<sup>50</sup>

While the marketing of jeans does not appear to require the supply of significant special services that consumers or distributors can free ride upon, Levi Strauss may have been concerned about transshipping of product to unauthorized accounts because of the importance of outlets where a product is sold to the product's image. In fact, manufacturer control of the outlets where consumers may purchase their product is a key element in the marketing of many goods where the manufacturer is concerned about product image.<sup>51</sup>

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<sup>50</sup>This implication fits most real world marketing arrangements. For example, while the Federal Trade Commission order against Levi Strauss stated that the firm could continue to limit sales to outlets meeting particular non-price criteria determined by Levi Strauss and to prohibit transshipment of jeans to unauthorized accounts as long as it did not protect resale margins, because manufacturers cannot write a legally enforceable contract that prohibits transshipping of goods that a distributor has purchased and taken title to, the prevention of transshipping cannot be accomplished without a premium stream and hence a termination sanction.

<sup>51</sup>A Lenox china marketing vice president has testified that "we would lose our identity as being a prestige product if every conceivable type of retail outlet were to carry our...line" (cited in Victor Goldberg, "Enforcing Resale Price Maintenance: The FTC Investigation of Lenox", Amer. Bus. Law J., 18(4) (Summer 1980) 225-58). For a discussion of the role of advertising in directly providing a stream of services to consumers that is related to a product's "image," see L. Schneider, B. Klein and K. Murphy, "Governmental Regulation of Cigarette Health Information," 24 Journal of Law

Controlling retail distribution to protect a product's image is not designed to prevent consumer free riding on "certification services", where consumers are hypothesized to observe that an approved brand name department store such as Saks Fifth Avenue carries the product before purchasing the product at an unapproved discount store such as K-Mart.<sup>52</sup> Rather, since K-Mart's reputation is for selling lower quality goods to lower income individuals, the manufacturer considers the mere existence of the product in K-Mart as destroying some of the product's image. This remains true even if K-Mart would sell the product at the minimum resale price. It is not the higher price that creates the product image. That result could be accomplished by merely raising the wholesale price. Rather, it is the mere existence of the product at K-Mart that leads to a reduction in image and hence demand. Resale price maintenance prevents such efforts by creating a premium stream, thereby giving the manufacturer the ability to impose a sanction on distributors transshipping its product to such unapproved sellers.

The alternative free riding on "certification services" argument does not explain why the manufacturer does not merely make a direct payment

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and Economics 575 (1981), pp. 604-606.

<sup>52</sup>Such an argument has been made by Sharon Oster, "The FTC v. Levi Strauss: An Analysis of the Economic Issues", and Timothy Greening, "Analysis of the Impact of the Florsheim Shoe Case", both in R. N. Lafferty, R. H. Lande and J. Kirkwood, eds., Impact Evaluations of Federal Trade Commission Vertical Restraints Cases, FTC Bureau of Competition and Bureau of Economics, August 1984. Also see Robert Steiner, "Vertical Restraints and Economic Efficiency", FTC Bureau of Economics Working Paper, no. 66 (June 1982); and Marvel and McCafferty, "Resale Price Maintenance and Quality Certification," unpublished paper, Ohio State University, 1984.

to the department store, such as Saks, for the certification services they supply. Separate payment by the manufacturer to the retailer for the supply of services may be difficult in the more general product demonstration special services case because of the large number of retailers supplying the service and the difficulty of monitoring the actual quantity of services supplied. However, these problems are mitigated for certification services, where the number of certifying retailers is small and all that need be monitored is that the store is actually carrying the product.<sup>53</sup>

The certification services hypothesis also implies that, since certification services are not supplied on a per unit sales basis, there is no reason for the implicit payment for the services to be made by the manufacturer with a resale price maintenance type of compensation which is related to number of units sold. Our analysis, on the other hand, requires such per unit sales compensation since the retailer short-run profit potential from transshipping is related to sales.

Moreover, a certification services analysis would imply that we would expect resale price maintenance for new products and little known brands and for it to disappear "once a brand became sufficiently well established in the public's mind."<sup>54</sup> This is obviously not the case for

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<sup>53</sup>In fact, when demonstration and certification services associated with specific goods are supplied by a department store to individual customers, separate direct payments are often made by the manufacturer. For example, cosmetics manufacturers often use their own personnel for product demonstrations and often lease space from the department store. See FTC v. Germaine Montiel Cosmetics Corporation C-3098 (11-19-82).

<sup>54</sup>Marvel and McCafferty, p. 7. Telser, p. 105.

Levi jeans or for many, if not most, of the well known products that were subject to resale price maintenance.<sup>55</sup> In addition, even if the manufacturer's brand were little known, the department store could, and does, prevent free riding on certification services merely by relabeling the product with the department store name.

Finally, we should note that our framework can be thought of as unifying the theory of price and non-price vertical restraints. Both minimum resale price maintenance and exclusive territories serve the same purpose and accomplish that purpose in the same way. Both price and non-price restraints serve the purpose of assuring distributor performance of non-court enforceable elements of the contractual understanding; and both accomplish this purpose by creating a distributor premium stream and hence a potential sanction which the manufacturer can employ to give distributors the proper incentive to perform. Price and non-price restraints differ, in principle, only in how distributor market power and hence the premium stream is created and in the resulting number of outlets that can exist in the marketplace under the alternative arrangements.

However, it is important to recognize that, although our framework contains these basic similarities between price and non-price

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<sup>55</sup>Oster and Steiner both conclude that the Levi Strauss resale price maintenance policy may have been optimal initially when the brand was little known but that Levi continued to use the policy when it was no longer optimal. This "mistake" explanation for the existence of resale price maintenance (i.e., that the FTC was doing Levi Strauss a favor by bringing their action) seems extremely implausible. Resale price maintenance is used and has successfully survived as a marketing technique for a great many long established apparel manufacturers.



restraints, such similarities may not always be present. Our framework provides an economic explanation for many of the observed cases of resale price maintenance and exclusive territories that previously have been difficult to explain, but our framework does not provide an explanation for all instances of such marketing arrangements. In particular, it is still possible that in some cases vertical restraints could be motivated by collusive considerations. For example, if all the firms in an industry simultaneously adopt vertical price fixing arrangements as a policing device in a collusive scheme, it would certainly not fit our framework. Since the simultaneous imposition of vertical resale price maintenance is equivalent in form to a horizontal price fix while the simultaneous imposition of vertical exclusive territories is not equivalent in form to a horizontal market sharing agreement, it is possible that price restraints may represent more of a potential antitrust problem than non-price restraints.

VERTICAL RESTRAINTS AS  
CONTRACT ENFORCEMENT MECHANISMS:  
THE COORS CASE

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