VERTICAL RESTRAINTS AS CONTRACT ENFORCEMENT MECHANISMS*

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IT is now generally recognized that there are many cases of vertical restraints that do not fit the standard "consumer free riding on special services" theory.[1] For example, the widespread use of resale price maintenance in the marketing of brand name clothing cannot be explained as inducing retailers to supply services such as dressing rooms. It is unlikely that consumers must be prevented from trying on clothing free of charge at a full-service retailer before purchasing the clothing at a discount from retailers who do not supply dressing rooms. A number of authors recently have attempted to correct this deficiency in the standard theory by expanding the type of services that vertical restraints may induce retailers to supply and the corresponding retailer free-riding problems.[2]

The standard economic analysis of how vertical restraints operate to induce desired retailer behavior has remained essentially unchanged, however. The standard analysis assumes that when it is not feasible for a manufacturer to write explicit, court-enforceable contracts with retailers for the supply of particular services, the only alternative mechanism manufacturers can use to induce the supply of desired services is to increase the direct return retailers receive from consumers when those

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[1] The classic statement of the theory is in Lester G. Telser, Why Should Manufacturers Want Fair Trade? 3 J. Law & Econ. 86 (1960). Similar reasoning can be found in earlier articles by T. H. Silcock, Some Problems of Price Maintenance, 48 Econ. J. 42 (1938); and F. W. Taussig, Price Maintenance, 6 Am. Econ. Rev. 170 (Suppl. 1916). Since Continental T.V., Inc. v. GTE Sylvania, Inc., 97 S. Ct. 2549 (1977), such reasoning has been frequently accepted by the courts as a procompetitive rationale for nonprice vertical arrangements.

[2] For example, Howard P. Marvel & Stephen McCafferty, Resale Price Maintenance and Quality Certification, 15 Rand J. Econ. 346 (1984), consider the supply by retailers of product "certification services."

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services are supplied. Resale price maintenance increases this direct return by increasing the retail margin, creating an incentive for individual retailers to engage in nonprice competition and to supply the desired services. Exclusive territories increase the direct return by eliminating nearby retailers, lessening the possibility that some of the gain from the supply of desired services will accrue to other retailers.

This standard economic analysis of vertical restraints is fundamentally flawed. Vertical restraints, by themselves, do not create a direct incentive for retailers to supply desired services. Consider the standard case of a retailer free riding on other retailers' product demonstrations. Even if the manufacturer fixes the retail price and does not permit price competition, retailers still have an incentive to free ride by supplying nonprice services that are not desired by the manufacturer but are of value to consumers. For example, free-riding retailers of personal computers could encourage consumers to obtain a product demonstration from a full-service retailer before purchasing the product from them with, say, lower priced tied accessories. No matter how large a margin is created by resale price maintenance, there appears to be no incentive for competitive free-riding retailers to supply the desired demonstration services. The standard economic analysis of vertical restraints makes sense within this context only under the unrealistic assumption that the sole avenue of nonprice competition available to retailers is the supply of the particular services desired by the manufacturer.[3]

Further, even if nonprice competition is unidimensional, retailers may merely take the additional money created by the vertical restraint and continue to free ride. This is obvious in cases where consumers cannot, before purchase, detect retailer services that influence product quality, such as rotation of a product with a limited shelf life. Competitive retailers have an incentive to "free ride" on the reputation of the manufacturer by reducing such services, thereby supplying a lower quality product than consumers anticipate and than the manufacturer desires. Such free riding entails an extra short-run profit to the retailer, and, no matter how large a margin is created by the vertical restraint, retailers will have no incentive to incur the added costs of supplying the desired services.

Our analysis presents an alternative theory of how vertical restraints

[3] This erroneous assumption is made both in the original Telser analysis, *supra* note 1, and in the work that has been done since to extend the free-riding analysis. See, for example, G. F. Mathewson & R. A. Winter, An Economic Theory of Vertical Restraints, 15 Rand J. Econ. 27 (1984); Victor P. Goldberg, The Free Rider Problem, Imperfect Pricing, and the Economics of Retailing Services, 79 Nw. U. L. Rev. 736 (1984); Martin K. Perry & Robert H. Groff, Resale Price Maintenance and Forward Integration into a Monopolistically Competitive Industry, 100 Q. J. Econ. 1293 (1985).

operate to induce desired dealer services. Manufacturers are assumed to induce desired dealer services through a private enforcement mechanism by which active manufacturer monitoring and the threat of manufacturer termination assures dealer performance. Within this framework, the manufacturer uses vertical restraints to decrease the short-run gain to nonperforming dealers (by limiting their ability to expand output) and to increase the long-run gain to performing dealers (by creating a quasi–rent stream).

This analysis explains the use of exclusive territories and resale price maintenance in the *Coors* case,[4] where desired dealer services are unobserved by consumers and, hence, where the standard "consumer free riding on special services" theory is clearly inapplicable. It is then extended to the more general case of product promotion, where dealer services, such as shelf space or product demonstrations, are observed by consumers, but where the manufacturer's desire for targeted marketing to marginal consumers implies a greater level of these services than would be supplied by unrestrained dealers. Manufacturers employ vertical restraints, not to avoid consumer free riding, but to optimally compensate dealers on a per unit of sales basis for an increased supply of product promotion services and to prevent price competition that would eliminate the desired targeted marketing scheme. This analysis is shown to be consistent with the use of exclusive dealing arrangements, with the use of resale price maintenance in the marketing of brand name clothing such as Levi Strauss jeans, and with the facts of *Monsanto*.[5] More generally, our theory of vertical restraints is shown to be applicable to any situation where it is not economical for the manufacturer to write an explicit contract with its dealers regarding some aspect of desired dealer performance.

I. Private Enforcement of Dealer Performance

We take as the starting point of our analysis the same assumption implicitly taken by the special services free-riding analysis, namely, that it is not economically feasible for a manufacturer to write an explicit, enforceable contract with a dealer for the supply of desired dealer services. We assume that the manufacturer can observe dealer performance, but that an explicit contract regarding this performance cannot be made because dealer performance may be prohibitively costly to measure and to

[4] Adolph Coors Co. v. FTC, 497 F.2d 1178 (10th Cir. 1974), cert. denied, 419 U.S. 1105 (1975).

[5] Monsanto Co. v. Spray-Rite Service Corp., 104 S. Ct. 1464 (1984).

specify in a way that contractual breach and the extent of damages can be proven to the satisfaction of the court. Rather than relying on a third-party enforcer, some elements of dealer performance are privately enforced solely by the threat of termination of the transactional relationship.[6]

If a manufacturer chooses to rely on such a private contract enforcement mechanism to assure that dealers supply desired services, then an expected future quasi–rent stream must exist. The potential loss of this future quasi–rent stream takes the place of a potential court-imposed sanction in assuring dealer performance. If the expected present discounted value of the future quasi–rent stream earned by an honest dealer exceeds the expected value of the gain to a dealer who shirks on the supply of desired services, then the capital loss that can be imposed on a dealer by manufacturer termination will be sufficient to assure dealer performance.

If a dealer's short-run per-unit time gain from shirking on the supply of services is π_ℓ, then the minimum perpetual dealer quasi–rent stream that will assure dealer performance, π_h, is given by

$$\pi_h = [1 - e^{-rt}]\,\pi_\ell, \tag{1}$$

where r is the interest rate and t is the time to detection and termination by the manufacturer of a shirking dealer, determined by manufacturer expenditures on monitoring of dealer performance.

It is important to note that the existence of a performance-assuring quasi–rent stream need not represent more than a normal rate of return to dealers. If dealers have made investments that are manufacturer specific, termination will be costly even if they are earning no premium. If these manufacturer-specific investments are of sufficient magnitude, the threat of loss of the quasi–rent stream on the investments will assure dealer performance without the creation of a premium stream.[7] Nevertheless, many dealers, such as department stores selling a particular clothing manufacturer's merchandise, make insufficient manufacturer-specific in-

[6] Since contract law places legal constraints on the ability of manufacturers to unilaterally terminate dealers without cause, notice, or compensation, pure private enforcement in this sense does not exist. Even within these legal constraints, however, a continuum exists between degrees of private and court enforcement. Under some contractual arrangements, manufacturers may retain substantial termination discretion with significantly less court intervention into the enforcement process than would be required under alternative contractual arrangements.

[7] Significant manufacturer-specific reliance investments may make it more difficult to legally unilaterally terminate dealers without compensation. Avoidance of such legal constraints may explain why all manufacturers do not demand initial lump sum payments from dealers equal to the present discounted value of any anticipated premium stream.

vestments to insure dealer performance solely through the threat of losing the return on these specific investments; a premium stream must be generated in order for a private enforcement mechanism to work.

Further, for the private enforcement mechanism to work, the manufacturer must be able to commit to terminating dealers who shirk on the supply of services and to commit to providing dealers who do not shirk with the required future quasi–rent stream. The manufacturer will terminate shirking dealers either because the manufacturer learns something about the dealers who shirk (that they possess high discount rates or relatively high costs of supplying the desired level of services) or because failure to terminate would lead dealers to learn that the manufacturer has a high cost of terminating them. In either case the manufacturer can commit to terminate because it would be costly for the manufacturer not to terminate shirking dealers.

Similarly, the manufacturer's ability to commit to payment of a future quasi–rent stream and the dealers' belief that a quasi–rent stream will be forthcoming depend upon the cost to the manufacturer of violating such a commitment. Since the manufacturer knows that violation of such a commitment would lead to dealer shirking, violation requires that the manufacturer adopt an alternative marketing arrangement, such as handling distribution with its own employees.[8] Hence, as long as the manufacturer's cost of distribution inherent in the next best alternative exceeds the dealer's cost of distribution inclusive of the quasi rent, the manufacturer's commitment to provide the dealer quasi–rent stream can be credible.[9]

The present discounted value of the cost advantage associated with independent dealer distribution is also what limits minimization of monitoring costs. Since manufacturer monitoring is a costly process, while the

[8] The only example we know of mass dealer terminations and vertical integration is the Ralston Purina termination in 1971 of all 642 Jack-in-the-Box franchises with thirty-day notification. This is not a likely example of reverse cheating, however, since it occurred only after Ralston Purina settled a class action suit that forced it to alter substantially its franchise arrangement.

[9] This should be contrasted with the case of consumer enforcement of high quality supply. See Benjamin Klein & Keith B. Leffler, The Role of Market Forces in Assuring Contractual Performance, 89 J. Pol. Econ. 615 (1981). In that case, consumers cannot make credible commitments regarding future premium payments to manufacturers because costs cannot be imposed on reneging consumers who do not pay a higher price in the future. Since consumers cannot make credible commitments regarding future premium payments, the mechanism suggested by Shapiro, whereby a zero profit equilibrium is reached with a sufficiently low (below cost) price in the initial period equal to the present discounted value of the premium stream, is not realistic. See Carl Shapiro, Premiums for High Quality Products as Returns to Reputations, 98 Q. J. Econ. 659 (1983). Instead, Klein & Leffler reach a zero profit equilibrium by the use of firm-specific initial investments that provide a future service flow and, hence, a future demand that will be lost if the firm shirks.

quasi–rent stream is an income transfer that entails no real resource cost, the efficient level of manufacturer monitoring may appear to be extremely low with the associated quasi–rent stream extremely high. However, there is a limit to the economizing process where the manufacturer can decrease expenditures on monitoring (thereby increasing the time to detection of shirking dealers) while simultaneously increasing the promised quasi–rent stream (and the cost to the dealer from termination). The limit is the ability of the manufacturer to commit to providing an increased quasi–rent stream. The manufacturer cannot credibly commit to provide a quasi–rent stream greater than the cost to him of violating the commitment or the cost advantage associated with independent dealer distribution compared to employee distribution.

The maximum quasi rent that the manufacturer can commit to provide the dealer as a premium for future performance is also determined, in part, by reverse cheating problems. Consider the extreme case where the manufacturer is assumed to give dealers all the quasi rents associated with the sale of the product by lowering the wholesale price to the manufacturer's marginal cost and creating exclusive territories for each dealer. In return, the dealer could pay the manufacturer an initial lump sum equal to the discounted value of all the rents associated with the present and future sale of the product.[10] In such a situation, however, the manufacturer would not have the proper incentive to maintain the quality of the product. Unless the dealer can write a costlessly enforceable contract with the manufacturer for the supply of the manufacturer's product and for the level of manufacturer monitoring, the manufacturer will certainly shirk on product quality and monitoring effort. A fully symmetrical reverse-cheating problem is created unless the manufacturer also has something to lose from his nonperformance. In order to assure performance on both sides of the transaction, an appropriate distribution of rents between the transacting parties must exist.

II. Vertical Restraints as Enforcement Devices

The necessity of a quasi–rent stream to assure dealer performance and the use of vertical restraints to both increase the quasi–rent stream earned by dealers and decrease the dealer's short-run gain from shirking can be seen most clearly by considering an idealized exclusive territory arrange-

[10] This is the solution adopted by manufacturers in the Rey and Tirole model when dealers are risk neutral. Rey and Tirole use dealer-risk aversion to explain why such an arrangement is inefficient and ignore the significant manufacturer incentive problems present. See Patrick Rey & Jean Tirole, The Logic of Vertical Retraints, 76 Am. Econ. Rev. 921 (1986).

ment where the manufacturer attempts to solve the dealer free-riding problem by fully assigning customers to particular dealers and imposing maximum resale price maintenance at the "competitive" dealer level to solve the "successive monopoly" problem created by the exclusive territory arrangement.

This solution is illustrated in Figure 1. Figure 1*a* depicts the demand for the manufacturer's product, $D(P,S)$, which is assumed to be negatively related to market price, P, and positively related to the per-unit level of services provided by dealers, S.[11] Figure 1*b* depicts a representative dealer's costs of marketing the manufacturer's product to consumers with the manufacturer's desired level of dealer services. The minimum average cost of dealer distribution is given by C_0 with the efficient dealer size given by q_0.

If contractual enforcement were costless, the manufacturer could assure that dealers supply the desired level of services by simply specifying contractually the desired level of dealer services and allowing competition to occur among dealers. Competition would drive the retail-wholesale price gap down to the representative dealer's minimum average cost of marketing the product with the desired services, C_0, and a potential court-imposed sanction would guarantee performance by dealers.

This competitive, costless enforcement equilibrium is represented in Figure 1*a*. For expositional simplicity we assume that the manufacturer has a constant marginal cost of production, which we denote MC_M. The manufacturer then adds the constant marginal cost of selling his product through competitive dealers, C_0, to the constant marginal cost of production to obtain the total marginal cost of producing and selling his product, MC_T, where MC_T equals $C_0 + MC_M$. The manufacturer's output, Q_0, is determined where the marginal revenue schedule, MR, intersects total marginal cost, MC_T. This implies a profit-maximizing wholesale price, P_{W_0}, of $P_{R_0} - C_0$. In Figure 1*b* this profit-maximizing wholesale price, P_{W_0}, is added to the dealer's costs to represent marketing conditions facing

[11] Although we assume that the manufacturer faces a negatively sloped demand curve for its product, we do not focus on the "monopoly" distortion implied by less than perfectly elastic demand curves. This should be contrasted with recently published works by Rey and Tirole, *id.*, and Perry and Groff, *supra* note 3, which consider vertical restraints, not as devices to prevent dealer free riding, but as devices that the manufacturer uses to extract monopoly rents. The rents earned by manufacturers in our model may represent a return on the manufacturer's investment in product reputation, particular location, or any other firm-specific product characteristic that creates a negatively sloped demand within an imperfectly competitive environment. It is important to recognize that such firm-specific assets serve the socially useful function of encouraging product innovation. It is not socially desirable, as Rey and Tirole and Perry and Groff maintain, to eliminate this return by driving the manufacturer's price to his marginal production cost.

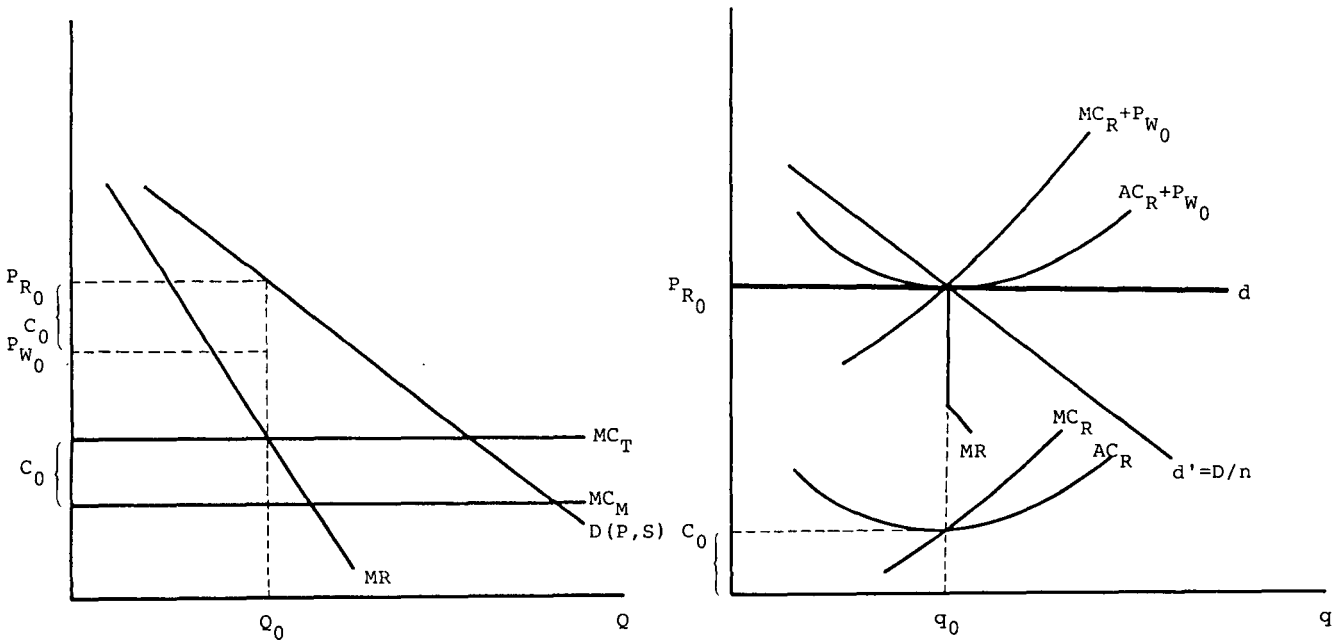

FIGURE 1*a*.—Manufacturer

FIGURE 1*b*.—Dealer

FIGURE 1.—Dealer exclusive territories and maximum resale price maintenance

dealers. Each dealer faces a perfectly elastic demand curve, d, at the equilibrium price, $P_{R_0} = P_{W_0} + C_0$. Competition between dealers insures that distribution is provided at minimum cost to the manufacturer and consumers, and the contractual arrangement insures the supply of the desired dealer services.

When the manufacturer cannot contractually specify the supply of desired services, and services are subject to free riding, each dealer can increase its short-run profit by shirking on the supply of services. Exclusive territories may appear to provide a solution to this problem. An idealized exclusive territory arrangement is illustrated in Figure 1*b*, where each dealer's demand curve, d', is assumed to be the market demand of the dealer's assigned customers or D/n if each of n dealers is given an equal share of the market. The manufacturer, by choosing the optimal number of exclusive dealers, $n_0 = Q_0/q_0$, and by setting a maximum resale price equal to P_{R_0}, may appear to guarantee that distribution is accomplished at minimum cost and that dealers earn no monopoly profits. Customer assignment implies that no dealer can free ride on other dealers, and maximum resale price maintenance at the competitive distribution level implies that no dealer can take advantage of market power to increase price. Therefore, in spite of the fact that the supply of dealer services cannot be contractually specified, manufacturers appear to have the best of both worlds—competitive margins for dealer distribution services and monopolistic dealer-customer assignment to prevent interdealer free riding.[12]

While an exclusive territory-"competitive" maximum price arrangement solves interdealer free-riding problems, it does not solve all free-riding problems between the dealer and the manufacturer. For example, consider the case where consumers cannot detect prepurchase dealer services that influence product quality, such as rotation of a product with limited shelf life. In such a case, dealers have the ability and incentive to shirk on the supply of services. Even with complete customer assignment, if maximum resale price maintenance squeezes the dealer's margin

[12] To avoid legal restrictions on the use of maximum resale price maintenance, manufacturers may modify the exclusive territory arrangement by permitting interterritory sales, but only at a specified, minimum list price. By creating a threat of sales from dealers in other territories, the manufacturer sets an effective maximum price that dealers can charge customers in their own territory without explicitly fixing such a maximum price. This may explain the marketing arrangement challenged in Eastern Scientific Co. v. Wild Heerberg Instruments, Inc., 572 F.2nd 883 (1st Cir.), cert. denied, 439 U.S. 833 (1978) and upheld as less restrictive than a legal, pure exclusive territory arrangement. The fact that the manufacturer set a minimum price on interterritory sales is consistent with the existence of a premium on intraterritory sales that the manufacturer did not want competed away.

to the point where the dealer earns no quasi rents, a dealer can achieve a larger return by shirking on the supply of services. Although future consumer demand and, hence, dealer sales will be reduced, this results in the loss of manufacturer profits, not dealer profits. The threat of lost future sales will not prevent the dealer from reducing services since the costs from the reduction in sales will be borne by the manufacturer. In addition, when dealers earn no quasi rents the threat of manufacturer termination will not be a costly sanction to the dealer and will not prevent the dealer from shirking.

One way for a manufacturer to create a margin sufficient to guarantee dealer performance is to employ exclusive territories with maximum resale price maintenance but to let the dealers earn some of the "monopoly" rents associated with assigned customers. An exclusive territory thereby creates a valuable asset for the dealer that would be lost upon termination. The manufacturer can be thought of as imposing a maximum price at the same profit-maximizing level, P_{R_0}, so as to keep the output at the same level, Q_0.[13] The number of dealers can also be kept at the same level, n_0, so that each dealer's share of the total market will be at the same optimum (minimum-cost) point on the dealer distribution cost function, q_0. As Figure 2 illustrates, however, the manufacturer must now lower the wholesale price from P_{W_0} to some point, say P_{W_1}, where the rents earned by the dealer are sufficient to assure the supply of the desired level of dealer services. The manufacturer must share with dealers some of the rents earned on the sale of the product.[14]

In addition, an exclusive territory arrangement lowers the dealer's gain from shirking by reducing a shirking dealer's ability to expand sales and, hence, short-run profits. This lowers the required premium and, when dealers have made specific investments, the exclusive territory arrange-

[13] This is approximately correct. More precisely, since any premium payment is a marginal cost to the producer, the profit-maximizing price will increase. The premium stream, however, is generally not very large. For example, if the desired services (and, hence, short-run gain) represent 20 percent of the value of a good, and shirking dealers cannot expand sales but can shirk for one year before being terminated, then, with an interest rate of 5 percent, the quasi rent need be only 1 percent of sales (which may be covered in part by the dealer's return on manufacturer specific investments). If a shirking dealer can expand sales, the short-run gain and, hence, the required premium may be substantially larger.

[14] In general, lowering the wholesale price is superior to generating the required premium stream with a fixed per-unit time payment to dealers. If the per-unit time payment was set at a level sufficient for the expected level of output for the average-sized dealer, those dealers with larger than expected output would find it profitable to shirk on the supply of dealer services. Because the sizes of dealers are likely to vary substantially in ways that cannot be predicted by the manufacturer ex ante, a proportional premium generated by lowering the wholesale price is preferred.

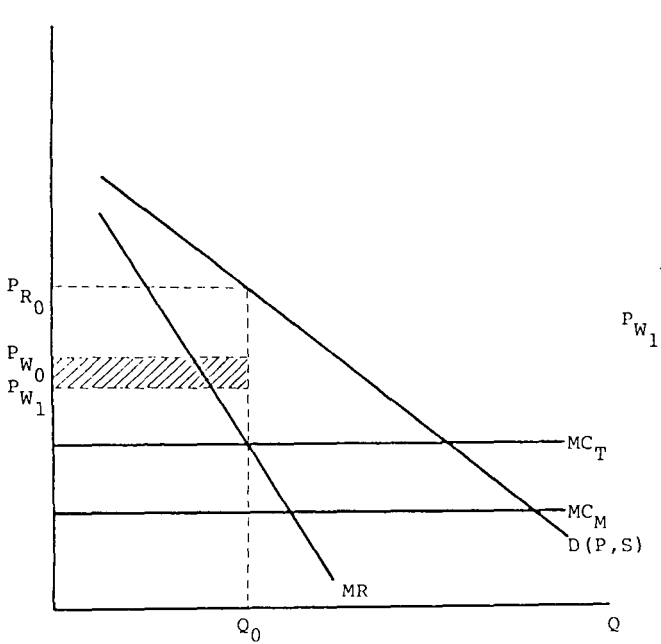

FIGURE 2*a*.—Manufacturer

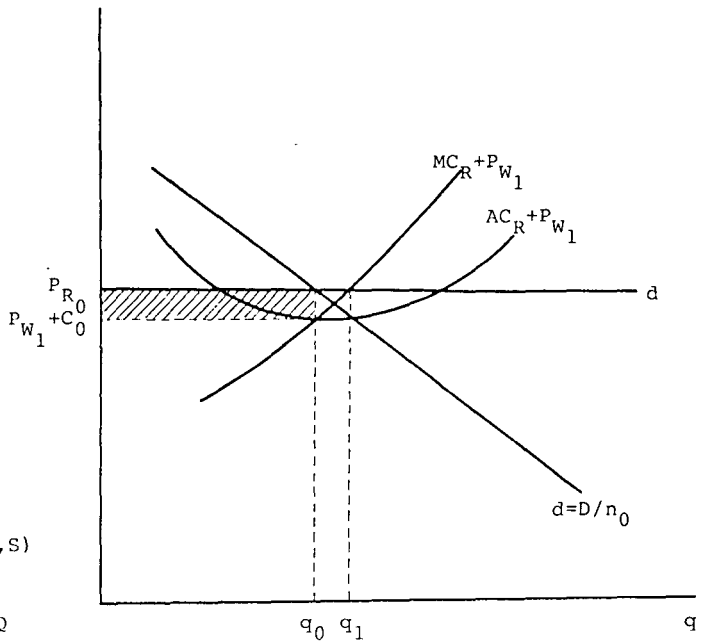

FIGURE 2*b*.—Dealer

FIGURE 2.—The generation of a dealer premium

ment in itself may be sufficient to prevent dealer shirking. If the lower short-run shirking return is less than the quasi rents on the dealer's manufacturer specific investments, then manufacturer monitoring and the threat of termination, together with exclusive territories, will be sufficient to prevent dealer shirking without lowering the wholesale price.

Similarly, if minimum resale price maintenance is to be effective in assuring dealer performance, it must create a situation where dealer quasi rents exceed the short-run shirking potential. Consider Figure 2 once again. As opposed to our analysis of exclusive territories, where each dealer was assumed to face a market sharing demand curve, d', we can now assume that each dealer faces a perfectly elastic demand curve, d. As in our analysis of exclusive territories, the imposition of resale price maintenance at P_{R_0} will have two effects. First, resale price maintenance limits the ability of shirking dealers to expand output. For example, without resale price maintenance, potentially large expansions in sales may occur via telephone mail-order marketing. Resale price maintenance thereby lowers the potential short-run shirking gain and the required dealer quasi–rent stream.[15] If quasi rents on manufacturer-specific investments are greater than this new low shirking potential, then the imposition of resale price maintenance, together with manufacturer monitoring, will be sufficient to assure dealer performance without lowering the wholesale price.

Second, resale price maintenance may be used to create a dealer premium stream. When the short-run dealer shirking potential exceeds the quasi rents from manufacturer-specific investments, then the manufacturer must lower the wholesale price from P_{W_0} to P_{W_1} to generate a dealer premium. Without minimum resale price maintenance, the dealer price would fall by the same amount as the wholesale price decrease, and no premium would exist. If, however, the manufacturer enforces minimum resale price maintenance at P_{R_0} and fixes the number of dealers at n_0, then a premium stream will be generated. Although individual dealers would desire to expand their output beyond q_0 to q_1, the minimum price constraint prevents dealers from expanding output through price cutting.[16]

[15] This may explain why restrictions on price advertising are commonly employed in vertical restraint marketing arrangements. See Thomas R. Overstreet, Jr., Resale Price Maintenance: Economic Theories and Empirical Evidence (Bureau of Economics staff report to the Federal Trade Commission 1983), at 84–101.

[16] A maximum output arrangement would appear to be a logically equivalent alternative to such a minimum price arrangement. Fixing prices is generally superior to fixing output, however, when demand differs across dealers or differs for a particular dealer over time. If changes in dealer demand are due to changes in the number of customers, that is, every customer has the same demand for the product but there is variability over time and across

III. Manufacturer Monitoring of Nonprice Competition

The resale price maintenance equilibrium illustrated in Figure 2 implicitly assumes that, although a positive price-marginal cost gap exists, dealers cannot expand output through nonprice competition such as tie-in sales, discounts on other items, or giveaways. Such dealer nonprice competition would eliminate some of the dealer quasi–rent stream and reduce the effectiveness of resale price maintenance in assuring dealer performance. The standard free-riding analysis of resale price maintenance ignores the problem of unauthorized nonprice competition by erroneously assuming that the desired special services represent the only avenue for nonprice competition. Our model, on the other hand, recognizes that many types of nonprice competition are available.

Clearly, if resale price maintenance is to be effective, the manufacturer must monitor the most obvious forms of nonprice competition that are the closest substitutes for price reductions. Nevertheless, even if the manufacturer can effectively monitor these forms of nonprice competition, some avenues will remain. In order for our equilibrium to be viable, nonprice competition along these other margins must not eliminate the dealer premium.

To evaluate this possibility, consider Figure 2 again, where each dealer is assumed to have a price-marginal cost gap equal to the amount of the per-unit premium, $P_{R_0} - (P_{W_1} + C_0)$. Further, assume that dealers can make per-unit expenditures on nonprice competition that lower the effective price to the consumer by α dollars per dollar spent on nonprice competition, where α is greater than zero and less than one.[17] Under the assumption of perfect competition among dealers, expenditures on nonprice attributes would occur up to the point where the dealer's marginal cost of output equals the price net of expenditures on the nonprice attributes. No matter how inefficient nonprice competition, that is, no matter how small is α, dealers will engage in such competition until all marginal profit is eliminated. Resale price maintenance would not be effective in creating a dealer premium stream.

The result that unlimited nonprice competition eliminates all marginal profit depends upon the assumption of perfect competition. In other con-

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dealers in the number of customers each dealer has, then it will be easier for a manufacturer to fix the correct premium stream with minimum resale price maintenance than attempting to estimate the corresponding maximum-output level for each dealer at every point in time. On the other hand, see our discussion of automobile marketing arrangements in Section VII *infra*.

[17] If α equals one, then consumers value the added service just as much as a reduction in price, and hence the minimum price restraint is completely ineffective.

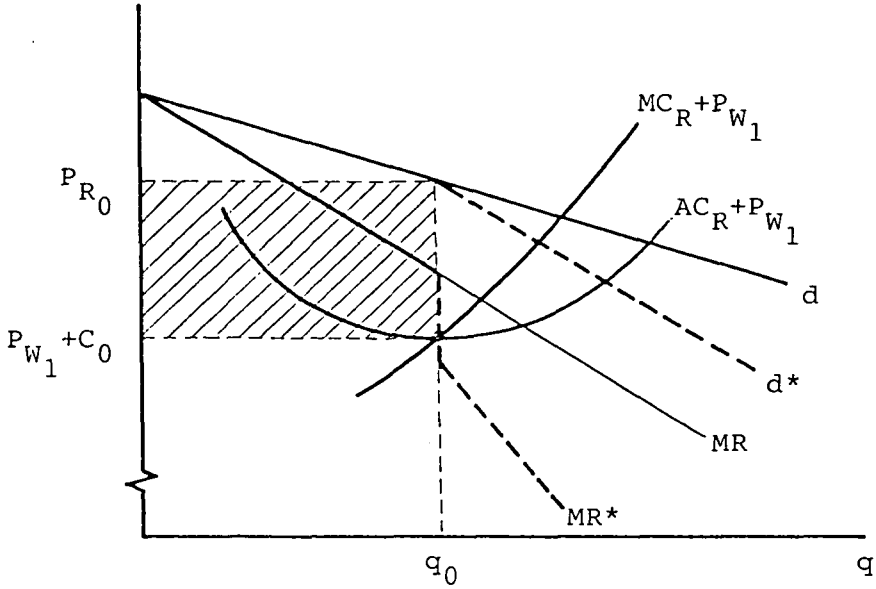

FIGURE 3.—Dealer equilibrium with nonprice competition

texts this assumption, although unrealistic, is generally useful since it simplifies the analysis and produces results that are close to those likely to be actually observed. For analyzing nonprice competition, however, the perfect competition model produces results that are qualitatively different from what could be expected under even slightly imperfect competition. In particular, if we assume that sales cannot be increased by an arbitrarily large amount with an arbitrarily small decrease in the effective price to consumers, then dealers will not have the incentive to engage in a broad range of nonprice competition.[18]

To illustrate, Figure 3 represents an individual dealer's demand curve, *d*, as less than perfectly elastic. Further, the dealer's ability to expand output by nonprice means is represented by the more inelastic demand curve, *d**. This demand curve can be thought of as representing the quantity the dealer can sell by varying expenditures on nonprice competition. The inefficiency of nonprice competition ($\alpha < 1$) implies that dealer in-

[18] This is the primary difference between our model of nonprice competition and that presented in George Stigler, Price and Nonprice Competition, 76 J. Pol. Econ. 149 (1968), where an assumption of perfect competition at the dealer level implies that nonprice competition, no matter how inefficient, eliminates all marginal profit.

creases in expenditures on nonprice competition result in a larger reduction in the net price received by the dealer, $P_R - z$, than in the effective price paid by the consumer, $P_R - \alpha z$. Therefore, expenditures on nonprice competition result in smaller increases in sales than under price competition. Since it takes $1/\alpha$ dollars to lower the effective price to consumers by one dollar, the slope of the dealer's effective demand curve for output greater than q_0 is $1/\alpha$ times the original slope.[19]

The dealer's effective demand curve has a kink at the minimum dealer price. This kink implies a discontinuity in the dealer's marginal revenue schedule. If the dealer's marginal cost curve (equal to average cost at this equilibrium) passes through this discontinuity, that is, if marginal cost exceeds marginal revenue at any output beyond the kink, then increases in sales through nonprice competition are not profitable. As α goes to zero, that is, as nonprice competition becomes less effective, the size of this gap in the marginal revenue schedule increases, and nonprice competition is less likely to occur.

Since the dealer will attempt to expand output whenever the dealer's price-cost margin, $[P_R - (MC_R + P_W)]/P_R$, is greater than one over the individual dealer's effective demand elasticity, a necessary condition for the dealer not to engage in nonprice competition is that

$$\pi_h/q_0 P_{R_0} < -1/(\alpha E_d), \tag{2}$$

where αE_d is the elasticity of the dealer's effective demand curve and π_h/q_0 is the per-unit premium.

Equation (2) indicates that the likelihood that nonprice competition will occur is positively related to the elasticity of dealer demand, the size of the premium as a fraction of price, and the effectiveness of the nonprice competition. Nonprice competition is unlikely to occur, even for relatively effective nonprice competition channels and relatively large individual dealer-demand elasticities, as long as the premium is a small fraction of the product price. For example, if the premium stream is 5 percent of the dealer price, even if the dealer demand elasticity is 25, any nonprice competition that is 80 percent or less as effective as price competition, that is, $\alpha \leq .80$, will not be engaged in by dealers. The manufacturer need not monitor such forms of nonprice competition since expenditures on them will not be made and the premium stream will not be reduced.

[19] The manufacturer may eliminate the kink for the nonprice expenditures it desires the dealer to make by paying $(1 - \alpha)$ percent of those particular expenditures. Cooperative advertising programs are a common example of this phenomenon.

IV. Price and Nonprice Restraints: The *Coors* Case

Our framework unifies the efficiency theory of price and nonprice vertical restraints.[20] Both minimum resale price maintenance and nonprice restraints, such as exclusive territories, assure dealer performance of elements of the contractual understanding that are not enforceable in court. And both price and nonprice restraints accomplish this purpose in essentially the same way. Both forms of vertical restraints raise the quasi–rent stream earned by the dealer relative to the dealer's short-run shirking potential.

Our analysis of nonprice competition also indicates that both minimum resale price maintenance and exclusive territories increase dealer quasi rents and reduce the short-run shirking potential by reducing dealer demand elasticity. Resale price maintenance decreases the elasticity of a dealer's effective demand curve because of the relative inefficiency of nonprice competition; exclusive territories decrease the elasticity of demand facing each dealer by creating individual dealer market power.

Whether a manufacturer chooses resale price maintenance, exclusive territories, or some other distribution arrangement to generate the required quasi–rent stream and to reduce the short-run gain from shirking will depend upon the particular case. Exclusive territories generally have some advantages over resale price maintenance in terms of a lower dealer shirking potential. The shirking potential is reduced by eliminating the interdealer free-rider problem. However, while it is often economical to assign wholesale distributors to a relatively small number of retail accounts fixed at particular locations, customer assignment is not feasible for retail distribution.

These economic forces are illustrated in the *Coors* case, where an exclusive territory (and maximum resale price maintenance) arrangement was employed at the wholesale level, and a resale price maintenance arrangement was employed at the retail level.[21] The marketing problem

[20] It is important to recognize that there is also a collusive theory of vertical restraints with widely different implications for price and nonprice restraints. While the simultaneous imposition by all firms in an industry of vertical resale price maintenance is equivalent in form to a horizontal price fix, the simultaneous imposition of vertical exclusive territories is not equivalent in form to a horizontal market-sharing agreement. Therefore, industrywide price restraints may serve as an enforcement device for a cartel arrangement and represent more of a potential antitrust problem than nonprice restraints.

[21] *Supra* note 4. In addition to Coors' use of exclusive territories at the wholesale level and minimum resale price maintenance at the retail level, the Federal Trade Commission claimed that Coors had unfair termination provisions with its wholesalers (termination with cause on five days' notice and without cause on thirty days' notice). This clause is consistent with our theory that termination should be a sanction. See Andrew McLaughlin, An Economic Analysis of Resale Price Maintenance (unpublished Ph.D. dissertation, Univ. Calif. at Los Angeles 1979) for further discussion and analysis of the Coors litigation.

solved by the use of these vertical restraints is related to the unique production process employed by Coors. Coors developed a sterile-fill or aseptic brewing process as an alternative to pasteurization. The aseptic brewing process controls the amount of live bacteria in the bottled beer by enclosing the product in a sterile, refrigerated system after the malt extract is boiled with the hops. This process, while creating a high quality beer, also creates a product that deteriorates fairly rapidly at room temperature. Coors is essentially an unpasteurized draft beer sold in bottles and cans and, like draft beer that is shipped in chilled barrels and marketed under refrigerated conditions, Coors must be kept refrigerated to maintain its quality. Coors beer was shipped by refrigerated trucks and insulated rail cars to distributors who were required to have refrigerated warehouses. Dealers 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.[22]

It is clear that these refrigeration and product rotation services do not fit the standard "consumer 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 dealer who refrigerates the beer and, then, purchasing the beer at a discount price from a dealer who does not refrigerate. A dealer free-riding problem exists, however, because consumers cannot detect quality deterioration before purchase, and consumers who receive a low quality product do not blame the particular dealer for the poor quality. If consumers even partially attribute the poor quality to the product generally, that is, to the manufacturer, then a dealer who shirks on supplying these services imposes an external cost on the manufacturer and on the other dealers of the product.[23]

Coors solved this free-riding problem at the wholesale level by creating a perfect exclusive territory arrangement with each dealer account as-

[22] If dealer refrigeration space was not available, dealers were required to have a strict product rotation policy and to maintain even more limited inventories with distributors recommended to service such accounts twice weekly. See Beer Quality and Refrigerated Marketing, statement by Jeffrey H. Coors to the Annual Distributors' Meeting of March 1, 1977, at 8.

[23] It may be rational for consumers to "blame" the manufacturer and to decrease demand for the product generally when they receive a poor quality product from a particular dealer because consumers know that product quality is determined by inputs that are supplied at both the manufacturer and dealer levels. Hence, rational consumers assign some probability that poor quality products are due to manufacturer production problems or manufacturer failure to properly monitor dealers. Benjamin Klein, Transaction Cost Determinants of "Unfair" Contractual Arrangements, 70 Am. Econ. Rev. 356 (Papers and Proceedings 1980), discusses this problem in a franchising context, denoting it as the "superhighway" or low probability of repeat sale problem.

signed to a particular wholesale distributor.[24] Coors denied distributors the right to ship beer into other distributors' territories and terminated distributors who did so. In addition to increasing the probability of repeat sale and preventing interdealer free riding, the evidence indicates that the exclusive territories represented valuable assets. Although Coors imposed maximum resale price maintenance on its distributors, a premium stream appears to have been created. When Coors opened new areas of distribution, significant excess demand existed for the initial grant of the exclusive territory, and the exclusive franchises sold for significant values when ownership rights were transferred.

On the retail level, Coors faced the same problem that it faced on the wholesale level. Because a consumer shops at different stores and cannot detect the quality of Coors beer before purchase, retailers have an incentive to shirk on the supply of refrigeration and rotation services. On the retail level, however, it is completely impractical for Coors to assign customers to individual dealers or to give retailers exclusive geographic territories. For these territories to possess the market power necessary to generate the correct premium stream and to internalize the interdealer free-rider problem, the territories would have to be uneconomically large. Therefore, on the retail level, Coors employed minimum resale price maintenance rather than an exclusive territory arrangement and monitored retailers' provision of refrigeration and product rotation services.

V. Manufacturer Purchase of Dealer Promotional Services

The problem solved by the Coors marketing arrangement is caused by the fact that consumers cannot detect dealer services before purchase. This gives dealers the incentive to shirk on the supply of these services. Nevertheless, even when consumers are fully aware of the extent of dealer services before they make a purchase, less than the desired quantity of dealer services may be supplied when there is a high manufacturer price-marginal cost margin and it is in the manufacturer's interest to have significant expenditures made by dealers on promotional services that increase sales. This is the case for wholesale distribution of all "premium" brands of beer, whether pasteurized or not, and other highly

[24] After the Federal Trade Commission decision, Coors adopted contracts with their wholesale distributors that included area of prime responsibility provisions. These provisions, since the Sylvania case, *supra* note 1, have been upheld as legal and important elements for protecting 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).

advertised products.[25] At the retail level, consider, for example, a department store's marketing of a brand name perfume, where the manufacturer's margin is extremely high and where the manufacturer desires the store to supply services such as shelf space and salespeople providing product demonstrations. Dealers determining the level of these services will not take account of the effect of the services on increased manufacturer sales and profits.

If the desired promotional services increase the value of the product on all units to all consumers by the same amount and the value of the services is greater than the cost of the services, then competing dealers will have the correct incentive to supply services despite the fact that dealers do not take account of manufacturer profitability. Since a dealer can increase the price of the product by the value of the services he supplies, services will be provided to the point where the marginal value of services to consumers is equal to the marginal cost to dealers of providing services. The competitive process will lead to the supply of the optimum quantity of services from both the consumers' and manufacturer's point of view.[26]

When consumers differ in the value they place on promotional services, however, competing dealers will not supply the services because they will not be able to increase the price on the particular units sold to the particular consumers that value the services. Moreover, the manufacturer may desire dealers to provide promotional services even though the total cost of the services exceeds the amount consumers are willing to pay for the services.[27] For example, assume that the wholesale price of an ounce of perfume is $45, that the competitive retail price is $50, and that there are inframarginal consumers who are purchasing the product and receiving consumer surplus. Further assume that there is a potential marginal consumer who values the product at only $40. Absent the promotional ser-

[25] The increased importance of advertising and distributor promotional efforts has led beer producers, as well as soft drink bottlers, to establish exclusive territory wholesale marketing arrangements for their products.

[26] Goldberg, *supra* note 3, argues that competitive dealers will supply less than the desired level of services, such as shelf space, by drawing an inappropriate analogy between consumers as fish and dealers as fishermen and assuming the existence of an "overfishing" externality. As opposed to their being caught like nonrational fish, however, it is useful to consider consumers as having property rights in themselves and making voluntary utility maximizing decisions in choosing the desired level of services. Moreover, if supplying promotional services such as shelf space is analogous to putting a fishing line into a lake, then dealer "overfishing" is likely to lead to too much shelf space rather than too little.

[27] The following analysis is similar to that provided in William S. Comanor, Vertical Price-Fixing, Vertical Market Restrictions, and the New Antitrust Policy, 98 Harv. L. Rev. 983 (1985). As we shall see, however, Comanor draws incorrect and misleading policy implications.

vices, such as a product demonstration, this marginal consumer will not purchase the product. If a product demonstration that has a total cost of, say, $30 increases the value of the product to the marginal consumer by only $10 and is not valued at all by the inframarginal consumers, the demonstration would not be voluntarily supplied by dealers. The added $50 sale to the marginal consumer will not cover the $30 promotional expenditure. As long as the manufacturer's marginal cost of producing the perfume is less than $15, however, it will pay the manufacturer to have the product demonstration provided because the manufacturer's profit on the additional unit is greater than the $30 cost of the demonstration. In effect, the manufacturer desires to price discriminate in favor of the demonstration-sensitive marginal consumer by having $30 spent to cut the effective price of the product to that consumer by $10.[28]

If the manufacturer were vertically integrated into retailing, this targeted promotion could be accomplished by the direct provision of the desired promotional services free of charge to consumers. Provision of promotional services is more profitable for a vertically integrated manufacturer than increasing sales by decreasing the price of the product because there are different types of consumers. The manufacturer cannot determine ex ante which consumers should receive selective price cuts, and, even if he could, the manufacturer cannot prevent arbitrage between consumers. Therefore, if the manufacturer lowers the price of his product, he must decrease the price for all consumers. However, if the manufacturer supplies promotional services that are of particular value to marginal consumers, this action provides a focused price decrease merely for these consumers.

Marginal consumers who are deciding whether to purchase the manufacturer's product can be thought of as consuming a relatively large fraction of promotional services such as product demonstrations. And, because consumption of product demonstrations entails a time cost, inframarginal consumers who are already purchasing the product are unlikely to consume the promotional services. Alternatively, instead of assuming that marginal consumers have increased consumption rates of the

[28] Subsidization of product promotion as targeted marketing may take many forms. For example, sales effort may be required to convince a consumer contemplating the purchase of a "stripped" standard model that he ought to buy a deluxe model with extra features; or sales effort may be required to convince a consumer to purchase "extra" units of a product. Our analysis of promotional services merely requires a larger effect of the services on any of these margins compared to its effect on units already sold. For simplicity of exposition we refer to particular types of consumers and assume that without the promotional services the marginal consumer will not purchase from the manufacturer at all.

promotional services, the manufacturer can be thought of as supplying promotional services that are public-type goods, such as advertising, displays, or shelf space, which marginal consumers are more sensitive to than are inframarginal consumers. The empirical relevance of the increased sensitivity of marginal customers to promotional services is evidenced by the fact that manufacturers and dealers often provide such services at a zero price. In fact, the underpricing of services to obtain additional sales is almost a definition of promotional services—if the services were priced at cost, they would be considered as part of the product.[29]

In the absence of vertical integration, the manufacturer must adopt a marketing arrangement that assures the supply by dealers of a greater level of promotional services than those dealers would voluntarily supply. The manufacturer accomplishes this by creating an implicit contractual understanding with the dealer whereby the dealer agrees to provide the desired level of promotional services in exchange for a payment from the manufacturer. The contract is implicit because measurement problems prevent the manufacturer and dealer from contracting on the services directly. The payment may be made by the manufacturer with the use of vertical restraints such as an exclusive territory or resale price maintenance arrangement, which creates a dealer price-cost margin sufficient to cover the costs of providing the desired increased level of promotional services. This implies that the manufacturer payment for promotional services is made on the basis of dealer output, which is a good measure of services supplied (if the dealer is selling at the correct price).[30] If insufficient manufacturer-specific dealer investments exist, the manufacturer also must use the vertical restraints marketing arrangement to provide dealers with a premium above the cost of the desired services. In any event, the manufacturer must always monitor dealer performance and terminate dealers who violate the implicit contractual understanding regarding the supply of promotional services.

[29] The underpricing of promotional services cannot be explained by the minimization of transaction costs. In many cases it would be economically feasible for the manufacturer or dealer to charge the customer directly for services such as demonstrations. The charge would not be too small relative to the cost of collection because the services are not cheap to provide, and dealers often do charge for other less expensive items such as shopping bags.

[30] Some dealer services, such as linear feet of shelf space, may appear to be easily measurable, and, therefore, a direct manufacturer contract with the dealer for the supply of these services in return for a per-unit time payment may appear to be possible. The *value* of the services in terms of added manufacturer sales may be difficult to measure, however, and, since value is likely to be closely related to actual dealer sales, an implicit payment based on dealer output frequently is preferred.

VI. The Prevention of Dealer Overcompensation for Promotional Services

There are two general ways in which the dealer can violate the implicit contractual understanding with the manufacturer regarding the supply of promotional services—by supplying fewer services than implicitly contracted for or by increasing the compensation received for the implicitly contracted quantity of services. Consider the first potential violation. Since the payment from the manufacturer for promotional services is in a per-unit output form, dealers will have an incentive to reduce the level of services below the desired level whenever there are diminishing returns to services. The dealer is paid for a desired average level of services per unit sold, but the marginal unit of service desired by the manufacturer produces less than the average increase in sales. As in our perfume example above, the dealer will not have the appropriate incentive to make the $30 expenditure on promotional services necessary to sell the last unit of the product. The dealer is compensated by the manufacturer to make this expenditure, but the compensation is paid on all the dealer's previous sales. When a profit-maximizing dealer reduces services to a level below that desired by the manufacturer, the dealer is overcompensated for the services actually supplied.

The prevention of dealer overcompensation can also explain manufacturer use of exclusive dealing as a complementary marketing device that is used with resale price maintenance and exclusive territory arrangements.[31] For example, consider a marketing arrangement where a manufacturer grants an exclusive territory or area of prime responsibility to dealers in order to create the correct quasi-rent stream that will assure dealer supply of promotional services. Recognizing the distortion of marginal dealer incentives to supply services given the average compensation scheme implied by this arrangement, the manufacturer must monitor dealer performance and terminate dealers who do not supply the desired level of services, that is, dealers who do not fully develop and take advantage of their assigned areas. The manufacturer, however, has only an imperfect measure of what the sales in each territory should be. Therefore, the manufacturer will also monitor the level of promotional services directly, such as the number of salespeople hired by the dealer. These measures will also be imperfect, however, and, because of the manufacturer's "average sales" compensation scheme, dealers will have the incentive to use their promotional efforts to switch marginal consumers to

[31] Overstreet, *supra* note 15, at 84–101, documents the fact that exclusive dealing is frequently employed in conjunction with exclusive territories or resale price maintenance.

other relatively unknown (unadvertised) brands that sell for a lower retail price, but which possess higher dealer margins.

Although competition among manufacturers, including manufacturers of relatively unknown products, for dealer sales effort is desirable, the ability of dealers to obtain double compensation for the same sales effort is undesirable. Dealers are reneging on the implicit contractual understanding with the manufacturer if they first accept payment for desired dealer services with an exclusive territory–maximum resale price or minimum resale price maintenance arrangement, both accompanied by a reduction in the wholesale price, and then do not supply the services but, instead, switch marginal consumers to an alternative product. Exclusive dealing prevents such switching and thereby lowers the required quasi–rent stream necessary to assure dealer performance.

Our explanation for exclusive dealing is distinct from the explanation given by Howard Marvel.[32] Marvel emphasizes the use of exclusive dealing to prevent dealer "free riding" on tangible and intangible manufacturer investments, such as advertising or dealer training, which get the consumer in the dealer's door to begin with. Marvel distinguishes this theory from the conventional textbook view of exclusive dealing, where the practice does not protect manufacturer investments but, rather, is said to encourage dealer sales efforts. Although the Marvel analysis correctly explains the motivation for exclusive dealing in many cases, many of the examples of exclusive dealing more closely fit this conventional textbook view that Marvel rejects.

For example, consider the *Standard Fashion*[33] dress pattern case that Marvel discusses in great detail. Marvel recognizes that manufacturer investments in advertising or dealer training were relatively unimportant in this case and instead emphasizes the manufacturer's investment in pattern designs as the economic rationale for exclusive dealing. He is correct in recognizing that successful patterns could be easily copied by rival manufacturers, but he is incorrect in claiming that exclusive dealing prevents such copying. Exclusive dealing would not prevent established full-line firms from copying the pattern and adding it to their line. Collusion among the established firms would be necessary to prevent such copying. Further, exclusive dealing would not prevent new limited-line firms from copying the pattern unless exclusive dealing also created a barrier to entry.

Instead, consistent with our theory, it appears much more likely that

[32] Howard P. Marvel, Exclusive Dealing, 25 J. Law & Econ. 1 (1982).

[33] Standard Fashion Co. v. Magrane-Houston Co., 258 U.S. 346 (1922).

exclusive dealing encouraged the supply of dealer promotional services for a product with a low marginal cost relative to price. Dealer services were extremely important in the marketing of dress patterns, with the manufacturer-dealer contractual arrangement explicitly specifying that dealers provide a pattern department at a suitable, generally first-floor location, a "lady attendant" to assist customers, and a minimum inventory level.[34] Most important, in addition to the exclusive-dealing requirement, dealers were also subject to resale price maintenance. This suggests that exclusive dealing, by preventing switching, did not prevent free riding on a manufacturer investment but, rather, prevented free riding on the manufacturer's payment scheme for dealer services.

The second general way dealers can violate the implicit contractual understanding with the manufacturer is, not by reducing the level of services they supply to promote the manufacturer's product, but by taking actions that increase the compensation they receive for a given level of services. Since service compensation is made in per-unit output terms, a dealer who keeps the level of services constant but lowers product price and thereby expands his sales will increase his service compensation. The dealer will be overpaid for the level of services provided, and other (non-price-cutting) dealers will be underpaid for the service they provide. Therefore, we can expect the other dealers to cut back their supply of services or perhaps (given fixed costs of handling distribution of a product) to drop the manufacturer's product completely.[35]

The individual dealer who engages in price competition to attract the manufacturer's inframarginal consumers could claim that these consumers do not demand the promotional services. Therefore, even though the dealer's per-unit service level is reduced by the price competition, they could claim that consumers are not harmed. Such dealers are merely arbitraging the manufacturer's targeted promotional services marketing scheme and taking advantage of the manufacturer's decrease in the wholesale price that is necessary to create an appropriate average dealer margin. It makes little economic sense to claim that "competition" merely offers consumers a choice of alternative price and service levels because such unlimited price competition gives inframarginal consumers the ability to pay a price below cost. Although such inframarginal con-

[34] Marvel, *supra* note 32, at 13.

[35] As the Seventh Circuit notes in Valley Liquor, Inc. v. Renfield Importers, Ltd., 678 F.2d 742 (1982), at 744, "If a supplier wants his distributors to emphasize non-price rather than price competition, . . . he will be hostile to price cutters because they will make it harder for his other distributors to recoup the expenditures that he wants them to make on presale services to consumers and on other forms of nonprice competition."

sumers do not demand services and, therefore, are not "free riding" in the standard sense of first shopping at a full-service dealer to receive services before buying the product at a no-service discount dealer, they are "free riding" on full-service retailers in the sense that they are taking advantage of the manufacturer's quasi rent–generating marketing arrangement and lower wholesale price on all units as a mechanism to subsidize the supply of promotional services to the marginal consumers. Such free riding is just as harmful to full-service retailers as the standard type of free riding and, if permitted, could not survive in long-run equilibrium.

This analysis is applicable to a great number of vertical-restraints marketing arrangements. For example, consider the use of resale price maintenance by brand name clothing manufacturers marketing their products through department and specialty stores.[36] The key features of these cases are that the manufacturers have substantial margins and that retail sales effort and shelf space are key determinants of aggregate demand, but that these services are not generally subject to consumer free riding.

An alternative explanation for manufacturer control of dealer distribution is the prevention of consumer free riding on "certification services."[37] According to this alternative explanation, consumer free riding occurs when consumers observe that an authorized brand name department store carries a product and then purchase the product at an unauthorized discount store. The certification services hypothesis implies that we would expect resale price maintenance for new, relatively unknown products where the potential free riding is greatest. Instead, we observe resale price maintenance being used as a marketing technique for many very well known apparel manufacturers who do not appear to require certification services, while relatively unknown, nonbrand name products infrequently employ the price-maintenance marketing technique.

[36] For example, resale price maintenance has been used for the sale of London Fog raincoats, Florsheim shoes, Levi Strauss jeans, Jonathan Logan and Palm Beach sportswear, and Gant shirts. See Overstreet for a list of products subject to Federal Trade Commission resale price maintenance litigation over the 1965–82 period. Overstreet, *supra* note 15, at 84–101. A list of products covered by resale price maintenance during an earlier period can be found in Ward S. Bowman, Jr., The Prerequisites and Effects of Resale Price Maintenance, 22 U. Chi. L. Rev. 825, 833–35 (1955).

[37] See Howard P. Marvel & Stephen McCafferty, Resale Price Maintenance and Quality Certification, 15 Rand J. Econ. 346 (1984); Sharon Oster, The FTC v. Levi Strauss: An Analysis of the Economic Issues, in Impact Evaluations of Federal Trade Commission Vertical Restraints Cases 47 (R. N. Lafferty, R. H. Lande, & J. Kirkwood eds., FTC Bureau of Competition and Bureau of Economics 1984); and Timothy Greening, Analysis of the Impact of the Florsheim Shoe Case, in Impact Evaluations of Federal Trade Commission Vertical Restraints Cases 91 (R. N. Lafferty, R. H. Lande, & J. Kirkwood eds., FTC Bureau of Competition and Bureau of Economics 1984).

Oster attempts to explain this discrepancy by arguing that the Levi Strauss resale price maintenance policy may have been profitable initially when the brand was little known, but that Levi Strauss continued to use the policy when it was no longer profitable. This "mistake" explanation for the existence of resale price maintenance, that is, that the Federal Trade Commission was doing Levi Strauss a favor by bringing action against them,[38] seems extremely implausible. First of all, it suggests that such "mistakes" were coincidentally also being made in the marketing of a great number of other brand name apparel products. Second, contrary to Oster's claim, Levi's were well known long before Levi Strauss adopted resale price maintenance. It was only after Levi Strauss left the Army and Navy stores and moved upscale into major department stores that it adopted resale price maintenance. Resale price maintenance was necessary to enforce the supply of the new higher level of desired dealer promotional services.

The analysis also appears to explain the arrangement adopted by Monsanto in marketing agricultural herbicides to distributors who, in turn, resold the herbicides to retail dealers.[39] Although the Supreme Court correctly recognized that "[t]he manufacturer often will want to ensure that its distributors earn sufficient profit to pay for programs such as hiring and training additional salesmen or demonstrating the technical features of the product, and will want to see that 'free riders' do not interfere,"[40] the standard form of consumer free riding does not appear to have been practiced by Spray-Rite. Monsanto claimed that "Spray-Rite's distributorship had been terminated because of its failure to hire trained salesmen and promote sales to dealers adequately."[41] While Spray-Rite did fail to promote the product, however, it does not appear to have sold to individuals who first obtained the promotional services from another distributor. Instead, Spray-Rite primarily sold at a discount to knowledgeable, large volume customers who did not require the promotional services. While these customers did not obtain services from other distributors, they did take advantage of how Monsanto paid for the supply of such services—by setting a margin at the distribution level "to ensure that its distributors earned sufficient profit to pay for" the services. Spray-Rite and its customers were free riding on this implicit contractual arrangement.[42]

[38] See FTC v. Levi Strauss & Co., D-9081 (July 12, 1978) and subsequent state actions.

[39] *Supra* note 5.

[40] *Id.* at 1470.

[41] *Id.* at 1467.

[42] To avoid this free riding, many manufacturers often handle such large established customers themselves.

When the manufacturer's margin is large and, hence, one is likely to observe the use of vertical restraints as part of an arrangement to insure the supply of promotional services, it is also likely that such arrangements will be efficiency enhancing because the increase in sales to the marginal consumers implies a large increase in producer surplus.[43] Moreover, there may be a substantial increase in consumer surplus to the now inframarginal—previously marginal—consumers who learned about the product and now are receiving substantial benefits.

Against these gains one must trade off any loss in consumer welfare from a potential increase in the price charged previously inframarginal consumers. It is unclear, however, that vertical restraints cause prices to rise for these inframarginal consumers. If promotional expenditures are not marginal costs, the price change will depend solely upon the change in the elasticity of demand at the price charged absent the vertical restraint. Promotional services shift out the demand curve and, therefore, make it more inelastic, increasing the price. Since marginal consumers value the promotional services more than inframarginal consumers, however, the demand curve also becomes flatter and more elastic, decreasing the price.

More importantly, promotional services, especially those dealing with a product's image, are likely to create some value for inframarginal consumers. Further, as the court recognized in *Sylvania,* declaring vertical restraints illegal is not likely to eliminate the promotional services but merely may result in "a shift to less efficient methods of obtaining the same promotional effects."[44] This, in fact, may explain the increase in direct manufacturer advertising of brand name clothing since repeal of the Miller-Tydings and McGuire acts in 1975.[45]

[43] Comanor, *supra* note 27, correctly states that the efficiency criterion is the change in the sum of consumer plus producer surplus but then ignores producer surplus throughout his analysis and concentrates solely on the possibility that consumer surplus may decline. Although he creates a hypothetical example where inframarginal consumers experience a loss of consumer surplus, he fails to trade off this loss with the increase in producer surplus. It certainly does not follow from his analysis, as he asserts, that vertical restraints on "established" products should be either per se illegal or that manufacturers should have the burden to demonstrate that the restraints have benefitted consumers generally. Such a broad policy conclusion based on an incomplete result derived from a hypothetical example merely reveals Comanor's bias against promotional services. His identical analysis could be applied to a vertically integrated firm supplying such services directly without any vertical restraints.

[44] *Supra* note 1, at 2560 n.25.

[45] Peter B. Pashigian, Demand Uncertainty and Sales: A Study of Fashion and Markdown Pricing (Working Paper No. 49, Univ. of Chicago, Center for the Study of the Economy and the State, 1987) documents that apparel manufacturers in the last decade have assumed more of the promotion function previously carried out by retailers, but he has mistakenly attributed this change to "the reduced cost of contacting customers through the television and print media and the increased cost of using sales people to inform consumers." *Id.* at 13. It is unlikely that any large shift has occurred in these factors over the last ten years.

Independent of legal constraints, the vertical integration solution, where the manufacturer provides desired services directly rather than relying on the dealer to provide the services, is frequently adopted when the manufacturer's margin is very large and the quantity of desired dealer services is also very large and not easily measurable. For example, perfume and cosmetics manufacturers often rent space in a department store and use their own employees to provide product demonstrations.[46] Even when manufacturers do not adopt a vertical integration solution, they often directly supply some of the services by providing racks, displays, and other forms of advertising.[47] In general, the manufacturer will provide services directly when the desired services are a large fraction of the value of the product and a shirking dealer can easily expand output. Under such conditions the premium stream required to prevent dealer shirking may be greater than the manufacturer's possible cost disadvantage of providing the service directly.

VII. Manufacturer Control of the Number and Type of Dealers

A form of promotional services that may be desired by a manufacturer is an increased number of retail outlets, where the use of retail outlets is analogous to other attention-getting promotional devices such as shelf space. Increased outlets, with individual dealers operating at outputs less than their minimum average cost, may be optimal from the manufacturer's perspective when marginal consumers are differentially sensitive to the number of outlets. As with other promotional services, a greater number of retail outlets than would exist in an uncontrolled environment can be supported only by restricting price competition.[48]

An interesting example is automobile marketing, where the manufacturer's margin is large and dealer marginal costs are rising slowly. The marginal cost to a dealer of selling an additional automobile is essentially equal to the manufacturer's wholesale (invoice) price plus dealer inventory and preparation cost. This marginal cost remains essentially flat over a wide range of dealer selling rates. Hence, letting dealers order and

[46] See, for example, FTC v. Germaine Montiel Cosmetiques Corporation, C-3098 (November 19, 1982). This solution is also frequently adopted within a department store for fur retailing, which often entails a significant amount of services.

[47] Esprit and Ralph Lauren are among the brand name clothing manufacturers that build entire "boutiques" in department stores.

[48] This is the "outlets hypothesis" for resale price maintenance presented by Gould & Preston, See J. R. Gould & L. E. Preston, Resale Price Maintenance and Retail Outlets, 32 Economica 302 (1965). A similar argument is also presented in B. S. Yamey, The Economics of Resale Price Maintenance (1954), 49–52. These authors do not explain why dealers cannot get consumers to pay for the manufacturer-desired number of outlets.

receive as many automobiles as they wish, and compete freely on the basis of price, would lead to a small number of very large dealers. But automobile manufacturers do not want the average size of a dealer determined at the point where a dealer's marginal cost finally rises sufficiently to cover the dealer's fixed cost of operation.

Automobile manufacturers cannot use resale price maintenance or exclusive territories to get the larger desired number of dealers in their distribution network. Since the sale of automobiles involves substantial price bargaining and corresponding price differences across customers, and because partial payment is often made in terms of an automobile trade-in, resale price maintenance is not feasible. In addition, given the large value of an individual purchase, consumers are willing to travel significant distances to shop. Therefore, exclusive territories would have to be extremely large to generate the required premium.

Instead of vertical price or territorial restraints, automobile manufacturers rely on a quantity allocation arrangement to maintain "small dealer" quasi rents. Dealers generally cannot obtain unlimited quantities of all models but are allocated automobiles on a formula based on past dealer sales and zone-level sales and on current market conditions. Allocations vary with market demand in order to provide dealers with a normal rate of return on their fixed cost capital investments at a sales rate where price is above the dealer's marginal cost. The allocations change dealer pricing incentives by increasing the dealer's "effective" marginal cost of selling an auto.[49]

In addition to controlling the number of dealers, manufacturers may also want to control the type of dealers who market their products. 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 the product's image.[50] Given such concern, the mere existence of the product at a discount dealer destroys some of the product's image.[51] Within this marketing context, resale price mainte-

[49] This arrangement should be distinguished from the complementary attempt by manufacturers to assure that dealers receive a minimum number of automobiles to maintain reasonable inventory levels, thereby preventing "book dealers" from free riding on inventories of full-service dealers. For a description of such standard free-riding problems, see, for example, United States v. General Motors Corp., 384 U.S. 127 (1966).

[50] A Lenox china marketing vice president testified that "we would lose our identity as being a prestige product if every conceivable type of retail outlet were to carry our . . . line." See Victor P. Goldberg, Enforcing Resale Price Maintenance: The FTC Investigation of Lenox, 18 Am. Bus. L. J. 225, 246 (1980).

[51] See, for example, Jacob Jacoby & David Mazursky, Linking Brand and Retailer Images: Do the Potential Risks Outweigh the Potential Benefits? 60 J. Retailing 105 (1984). Jacoby and Mazursky also note that a discount outlet may use a high-end product, even if selling at a nondiscount price, to enhance its own reputation for high quality merchandise.

nance prevents image deterioration by creating a premium stream and, therefore, a potential sanction that prevents the product from being transshipped from an authorized dealer to the discounter.

More generally, such a mechanism is necessary if the manufacturer is to control distribution of its product for whatever reason it desires. For example, if the manufacturer wishes to avoid the standard form of consumer free riding on dealer product demonstrations, and if manufacturer-specific dealer investments do not exist, the manufacturer will not be able to avoid this free riding without a premium stream generated by a vertical restraint. Without such a potential sanction the manufacturer will not be able to prevent transshipping of its product from authorized dealers to, for example, unauthorized free riding telemarketers. This is because once an authorized dealer takes title to a product, the dealer generally can legally sell it to whomever he pleases. A vertical restraint that creates a premium stream gives the manufacturer the ability to control dealer distribution by being able to effectively terminate dealers who transship their product to unauthorized dealers.

VIII. Conclusion

Our framework contrasts with the standard economic paradigm of an optimal, incomplete contractual arrangement, which involves the setting of explicit contract terms so that the direct returns of alternative actions make the incentives of the transacting parties correct. This standard contract does not describe real world contract arrangements. Consider, for example, the employment of a worker. First of all, it is generally recognized that it is uneconomic to create a complete contingent contract to govern the employment relationship. A complete contingent contract entails large transaction costs, rigidities, and hold-up potentials associated with initial contractual negotiation and renegotiation in the face of changing market conditions. In addition, many elements of performance, such as the energy and enthusiasm the worker devotes to a particular task, are essentially unmeasurable (although not unobservable) and must remain unspecified and unenforceable in court.

Once we have an incomplete contract, the question becomes one of how the employer will motivate employees to perform along the contractually unspecified elements of performance. The employer generally will not adopt a contractual arrangement that motivates employees by changing the direct return from performance. For example, if the employer attempts to induce desired behavior along the unspecified dimensions of employee performance by giving each employee a share of the firm's profit, the optimum share would have to equal 100 percent—with offset-

ting initial lump sum payments by each employee to the employer. This arrangement would create great distortions, including an incentive for the employer to sabotage production (or pay off an individual worker not to perform). In addition, the employer certainly would not want to perform in a manner that results in an unanticipated profit expansion (for example, by introducing a product innovation). It is obvious that one sees incredible contracts like this only in the hypothetical worlds of theoretical economics.

In the real world, an employee is hired or a manufacturer-dealer distribution agreement is made under incomplete contracts, where both the employee and the dealer derive at least part of their motivation to perform well by the threat of termination. Employers police their employees, as manufacturers police their dealers, by observing their behavior and by reserving the option of terminating underperformers. Employers or manufacturers do not attempt to induce worker or dealer performance solely by changing the direct returns from alternative behaviors. Once it is recognized that it is efficient for transactors to adopt a premium-termination enforcement mechanism, the contractual arrangement must be designed to optimally distribute quasi rents between the transacting parties. Vertical restraints, by shifting some rents from the manufacturer to the dealers, have this effect and thereby help to assure dealer performance of unspecified but essential elements of the contractual understanding.

This framework has great explanatory power. In addition to explaining how vertical restraints can induce dealers to supply special services that consumers can obtain free of charge from other dealers, a mechanism for which is lacking in the standard free riding on special services theory, the framework explains dealer supply of services that cannot be detected by consumers before they make a purchase (the *Coors* case) and dealer supply of the desired level of promotional services when there is no consumer free riding (the marketing of branded clothing or the *Monsanto* case). More generally, this framework is applicable to any service that a manufacturer wishes a dealer to perform that is not in the dealer's own short-run self-interest and where an explicit contract cannot be written and enforced.

This analysis may help the public and the courts to understand the important economic role of vertical restraints. Most economists recognize that vertical restraints are usually voluntarily adopted by transacting parties as a way to efficiently distribute products that require point-of-sale services, and that much private litigation surrounding their use actually involves contract disputes rather than antitrust problems. As a logical matter, vertical restraints employed by transactors with no market power cannot be anticompetitive. Nevertheless, it has been difficult to persuade

noneconomists that this view, especially with regard to resale price maintenance, is valid. This conclusion remains unpersuasive because an empirically relevant procompetitive explanation for vertical restraints has been missing. In particular, many of the instances of the practice do not correspond with the classic consumer free riding paradigm upon which the standard economic analysis is built. Our theory, which empirically rests not upon consumer free riding but upon a more general desire of the manufacturer that dealers adequately promote its product, corresponds much more closely with reality.

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